

DOCUMENTED BRIEFING

RAND

Implementing Performance- Based Services Acquisition (PBSA)

*Perspectives from an Air Logistics
Center and a Product Center*

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*Prepared for the
United States Air Force*

Project AIR FORCE

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PREFACE

The Air Force is in the process of implementing performance-based practices within its service contracts to improve service quality and reduce costs. RAND's Project AIR FORCE is supporting these efforts. Our early research focused on installation support services. Recently, the Deputy Assistant Secretary for Contracting (SAF/AQC) asked us to include purchased services that support weapon system development and sustainment activities as well. This Documented Briefing describes an analysis of the application of performance-based practices in service contracts at an Air Force Air Logistics Center and a Product Center. It is part of the Project AIR FORCE study "Improved Implementation of Performance-Based Services Acquisition: Managing Performance and Assessing the Effects of Practices," sponsored by SAF/AQC. It should be of interest to the Air Force and Department of Defense communities.

For almost a decade, RAND has been helping the Department of Defense improve the way it purchases goods and services. Readers may also be interested in selected related studies:

- *Implementing Best Purchasing and Supply Management Practices: Lessons from Innovative Commercial Firms* by Nancy Y. Moore, Laura H. Baldwin, Frank Camm, and Cynthia R. Cook, RAND DB-334-AF, 2002, which can be downloaded from www.rand.org/publications/DB/DB334
- *Federal Contract Bundling: A Framework for Making and Justifying Decisions for Purchased Services* by Laura H. Baldwin, Frank Camm, and Nancy Y. Moore, RAND MR-1224-AF, 2001, which can be downloaded from www.rand.org/publications/MR/MR1224
- *Performance-Based Contracting in the Air Force: A Report on Experiences in the Field* by John Ausink, Frank Camm, and Charles Cannon, RAND DB-342-AF, 2001, which can be downloaded from www.rand.org/publications/DB/DB342
- *Strategic Sourcing: Measuring and Managing Performance* by Laura H. Baldwin, Frank Camm, and Nancy Y. Moore, RAND DB-287-AF, 2000, which can be downloaded from www.rand.org/publications/DB/DB287

- *Incentives to Undertake Sourcing Studies in the Air Force* by Laura H. Baldwin, Frank Camm, Edward G. Keating, and Ellen M. Pint, RAND DB-240-AF, 1998
- *Strategic Sourcing: Theory and Evidence from Economics and Business Management* by Ellen M. Pint and Laura H. Baldwin, RAND MR-865-AF, 1997.

Research on services acquisition and broader purchasing and supply management policy in the Air Force continues within the Resource Management Program of Project AIR FORCE. For additional information or to convey comments on this document, please contact Dr. Laura H. Baldwin at (412) 683-2300 x4901 or at Laura_Baldwin@rand.org.

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SUMMARY

In April 2000, Dr. Jack Gansler, Under Secretary of Defense for Acquisition and Technology, established the goal that at least 50 percent of all service acquisitions, measured in dollars and contracts, should be performance-based by 2005. Air Force interest in performance-based service contracts preceded Dr. Gansler's memorandum. On April 1, 1999, the Air Force issued Air Force Instruction (AFI) 63-124, *Performance-Based Service Contracts (PBSC)*, which contains guidance on implementing performance-based practices for purchasing a wide range of services to support its installations, employees, and war-fighting capability. Under what is now called performance-based services acquisition (PBSA), buyers should (1) describe *what* service is desired and not *how* to do it, (2) use measurable performance standards and quality assurance plans, (3) specify procedures for reductions in fee or price when services do not meet contract requirements, and (4) include performance incentives where appropriate.

Previous RAND research has supported the implementation of PBSA practices in the acquisition of installation support services purchased through operational contracting activities. In March 2001, SAF/AQC asked RAND to expand its research scope to support ongoing Air Force efforts to implement PBSA for services purchased by the Air Force Materiel Command (AFMC) that are related to the acquisition and sustainment of weapon systems. This Documented Briefing presents what we learned about the application of performance-based practices in these service areas during interviews at an Air Logistics Center (ALC) and a Product Center.¹

An important lesson from the interviews is that the nature of the services purchased within the "systems" sides of these two Centers—that is, program offices that support weapon systems, common subsystems, and special mission capabilities—differs from that of installation support services in ways that affect the implementation of AFI 63-124. Many installation support services (e.g., grounds maintenance) are commercial services with accepted performance standards and robust commercial

¹Assurances of anonymity for the personnel we interviewed prevent us from further identification of these Centers.

markets. Performance of such services can often be measured objectively and repeatedly over time. In contrast, many of the services purchased on the systems sides of these Centers allow only infrequent opportunities for performance evaluation, deal with tasks for which it is difficult to define a “successful” outcome *ex ante*, or lend themselves only to subjective evaluations. Additionally, proprietary data, rapid evolution of technology, and limited demand for some of these services limit the competition for their provision. As a result of these distinctions and the fact that the examples in the current version of the AFI focus on installation support services, personnel perceive some ambiguity about the definition of a “service” for purposes of the AFI.

Many at the ALC and the Product Center feel that it is difficult or impossible for systems contracts to satisfy all four of the PBSA criteria described in AFI 63-124. In particular, they find it difficult to satisfy the requirement to use “measurable performance standards.” They interpret this to mean that the desired result of a service must be known in advance and that objective data must be collected frequently to measure performance against that result. This interpretation cannot be applied easily to many services purchased on the systems sides of these Centers. Despite this difficulty, however, both Centers use a performance-based approach (applying the other three criteria) to purchase many services, and many personnel feel that they can determine and convey whether a contractor met their needs. As a result, we conclude that many of the approaches used by the ALC and the Product Center satisfy the *intent* of AFI 63-124.

Because of the nature of services purchased by these Centers and some confusion about the interpretation of PBSA practices, the Air Force could improve implementation of AFI 63-124 by clarifying the universe of services to which it applies. The Air Force could also provide examples of what kinds of performance objectives and monitoring activities satisfy the criterion for “measurable performance standards” (or serve as substitutes) in the context of services for which objective measures of success are difficult to develop.

ACKNOWLEDGMENTS

Although the material in this document is the responsibility of the authors, we wish to acknowledge the many employees of the Air Logistics and Product Centers that we visited who graciously donated their time to help us learn about the application of performance-based practices within service contracts at these two organizations. Because of our pledge of confidentiality, we are unable to identify them by name; however, without their help, this research would not have been possible.

Many of our RAND colleagues provided valuable comments and assistance. We thank Nancy Moore and Charles Lindenblatt for their analyses of Air Force contracts data and Mary Chenoweth for her in-depth review that greatly improved our final document. In addition, Frank Camm, Edward Keating, Ellen Pint, and Bob Roll provided helpful comments on an early draft, and Belinda Greenfield provided valuable document assistance.

ACRONYMS

A&AS	Advisory and assistance services
AFCESA	Air Force Civil Engineer Support Agency
AFI	Air Force Instruction
AFM	Air Force Manual
AFMCA	Air Force Materiel Command
AFMIA	Air Force Manpower and Innovation Agency
ALC	Air Logistics Center
CFR	Code of Federal Regulations
CFT	Contractor field team
COTS	Commercial-off-the-shelf
CPARS	Contractor Performance Assessment Reporting System
DAU	Defense Acquisition University
DoD	Department of Defense
FAR	Federal Acquisition Regulation
FFRDC	Federally Funded Research and Development Center
FPDS	Federal Procurement Data System
FY	Fiscal year
LRU	Line replaceable unit
OEM	Original equipment manufacturer
OMB	Office of Management and Budget
PBSA	Performance-based services acquisition
PBSC	Performance-based service contracts
PSC	Product/Service Code
QASP	Quality Assurance Surveillance Plan

R&D	Research and development
RFP	Request for Proposal
SAF/AQC	Air Force Deputy Assistant Secretary for Contracting
SCA	Service Contract Act
SOO	Statement of objective
SOW	Statement of work
T&M	Time and materials
TIM	Technical Interchange Meeting

1. INTRODUCTION



**Implementing Performance-Based
Services Acquisition (PBSA):
Perspectives from an Air Logistics
Center and a Product Center**

**John Ausink, Laura H. Baldwin,
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During April and May 2001, we visited an Air Force Air Logistics Center (ALC) and a Product Center to explore the use of performance-based practices in their service acquisition activities.² We decided to conceal the identities of these two Centers to encourage personnel to share the challenges as well as the successes they are encountering in implementing new practices. This Documented Briefing describes what we learned during our interviews and through review of solicitations, contracts, surveillance documents, and incentive plans associated with selected purchased services.

²The Air Force has three ALCs (Ogden ALC, Oklahoma City ALC, and Warner Robins ALC) and four Product Centers (Air Armament Center, Aeronautical Systems Center, Electronic Systems Center, and Space & Missile Systems Center).

To the extent that experiences at these two Centers are representative of the Air Force's other Centers, the lessons that we draw from these interviews should be broadly applicable. We believe this is the case and assume that the other Centers would provide additional insights.

We Learned About Purchased Services and PBSA Opportunities

- **Early Air Force PBSA implementation efforts focused on installation support services**
- **AFMC buys many services that support weapons and other mission capabilities**
- **SAF/AQC wants to ensure that performance-based practices are implemented Air Force-wide**

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In April 2000, Dr. Jack Gansler, the Under Secretary of Defense for Acquisition and Technology, established that a minimum of 50 percent of Department of Defense (DoD) service acquisitions, in both dollars and contracts, be performance-based by the year 2005. Performance-based practices are expected to help the DoD improve performance, innovation, and competition in purchased services, often at a reduced cost.³ In October 2000, the Air Force began tracking the use of performance-based service contracts through a new data field on the DD Form 350, Individual Contracting Action Report, which records information about contract transactions over \$25,000.

Air Force efforts to implement performance-based practices preceded Dr. Gansler's memorandum. In 1999, SAF/AQC issued an Air Force Instruction, AFI 63-124, containing guidance for implementing

³See Gansler (2000).

performance-based services acquisition (PBSA) practices.⁴ It is based on the Federal Acquisition Regulation (FAR) Part 37 definition of a performance-based service contract,⁵ including (1) a description of the desired results, not the method of provision; (2) the use of measurable performance standards and quality assurance surveillance plans; (3) provisions for reductions of price or fee when a service is not performed or does not meet contract requirements; and (4) the use of positive incentives, where appropriate. This instruction applies to virtually all Air Force service contracts over \$100,000 annually.

The Air Force purchases a broad range of services to support its installations, military and civilian employees, and primary war fighting capabilities. Initial Air Force PBSA implementation efforts focused on installation support services purchased through operational contracting activities. RAND's previous and current research supports these implementation efforts.⁶ In March 2001, SAF/AQC asked us to expand our research scope to include the services that the Air Force Materiel Command (AFMC) purchases to develop and support the Air Force's weapon systems. These services were of interest to SAF/AQC primarily for two reasons. First, AFMC spent over \$12.5B on these services in FY 2000, compared to just over \$6.5B Air Force-wide on operational services.⁷ Second, AFMC was just beginning to implement AFI 63-124 broadly due to delays associated with a union protest.

⁴AFI 63-124, *Performance-Based Service Contracts (PBSC)*, April 1, 1999, is currently in revision under the new title *Performance-Based Services Acquisition (PBSA)*. The proposed revision that the authors have seen includes changes to clarify ambiguities reported by Air Force organizations that are implementing PBSA practices.

⁵See FAR Part 37, *Service Contracting*, Subpart 37.6—*Performance-Based Contracting*.

⁶See Ausink et al. (2001).

⁷These numbers are from an analysis of Air Force data on FY00 contract transactions over \$25,000. The Air Force tracks these contracts through the DD Form 350, Individual Contracting Action Report. Service contracts were identified through the Product/Service Code (PSC) associated with each contract. The PSC for service contracts begins with a letter rather than a number. Service contracts were assigned to Air Force organizations based on the office contracting code of the purchasing organization, which is part of the DD Form 350 record for each contract. Services were further classified as related to operational contracting, sustainment, or weapons development by examining the office contracting code, office name, and address. We thank our RAND colleagues, Nancy Moore and Charles Lindenblatt, for creating these classifications and performing these data analyses.

Headquarters AFMC suggested that we visit an ALC and a Product Center to learn about the kinds of services purchased and opportunities to apply performance-based practices in these activities.

In what follows, we will provide examples of performance-based practices currently used in services contracts at this ALC and Product Center and illustrate how selected practices satisfy (in our opinion) the intent of AFI 63-124.

We Interviewed a Wide Range of Personnel Involved in Diverse Purchasing Activities

- **ALC: Six Product Directorates that purchase services related to supporting systems**
- **Product Center: Three Program Offices that purchase services related to acquiring systems**
- **Operational contracting at each**
- **Contracting, requirements, and program management personnel**

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We spent four days at the ALC. During this time, we met with program managers and other “requirements personnel” (e.g., engineers or other subject matter experts) as well as program contracting officers from six Product Directorates that support weapon systems, common subsystems, and special mission capabilities. These and other related Product Directorates form the “systems” side of the ALC. We also met with requirements personnel and contracting officers who participate in operational contracting activities in support of the installation and those who are responsible for implementation of AFI 63-124 at this ALC.

We spent a day and a half at the Product Center. We met with contracting officers and program management personnel from operational contracting and three Program Offices that purchase services to support the Center’s system acquisition activities. We also met with contracting personnel responsible for implementing purchasing policy at this Product Center.

We discuss the types of services addressed during these interviews in the next chapter.

We Can Summarize Our Observations in Four Main Points

- **Services purchased on the “systems” side of AFMC differ from installation support services in ways that are important for implementation of AFI 63-124**
 - **Application of AFI to certain services was questioned**
- **Both Centers already use a performance-based approach to purchase many services**
- **However, personnel are struggling to reconcile their surveillance and performance measurement activities with the FAR definition of PBSC**
 - **In our view, many of the described approaches satisfy the *intent* of AFI**
- **SAF/AQC can improve implementation of AFI by clarifying its application to AFMC systems services contracting**

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First, services purchased by the Product Directorates and Program Offices at these two Centers to support acquiring and sustaining weapon systems and other mission capabilities (“systems” contracting activities) differ from installation support services in ways that affect the Air Force’s efforts to implement AFI 63-124. For example, many of the systems services involve rapidly evolving or obsolete technologies with limited demand, resulting in limited competition; it is often difficult to define in advance a “successful” outcome for the service; there may be infrequent opportunities to observe performance; and it can be difficult to measure performance objectively.

These differences, combined with the fact that the examples in the AFI currently focus on operational contracting activities, cause some personnel at these Centers to question whether the AFI really applies to the kinds of services they buy. In fact, we were repeatedly asked how we define services for the purposes of our study.

Although it was not raised during our interviews, the definition of the universe of services to which AFI 63-124 applies has broad implications. It

significantly affects how the Air Force evaluates its progress toward meeting Dr. Gansler's 50 percent goal for PBSA.

Second, many of the services acquisition activities that were discussed during our interviews reflect performance-based practices. In particular, Product Directorates and Program Offices convey to their contractors what they need, not how to perform the work; they can evaluate and substantiate whether the contractor is meeting those needs; and in some cases, they use positive and/or negative incentives to align the contractor's activities with the customer's needs. Interestingly though, few attribute adoption of performance-based practices to AFI 63-124; rather, they credit acquisition reform and Ms. Darleen Druyun's "Lightning Bolts" for the changes in practices.⁸

Third, many of these Centers' current performance-based practices clearly match three of the four parts of the FAR Part 37 definition of a PBSA activity used in AFI 63-124. However, personnel are struggling to link their surveillance and performance management activities to their strict interpretation of the requirement for "measurable performance standards" to evaluate contractor performance.

In spite of the hesitation of many personnel to label their services contracts containing performance-based practices as PBSA activities, it is our opinion that many of the services contracting activities at these Centers satisfy the intent of AFI 63-124.

Finally, it became clear to us during our interviews that SAF/AQC could improve implementation of AFI 63-124 Air Force-wide (and thus improve its ability to meet the PBSA goal set by Dr. Gansler) by clarifying how it can and should be applied to the diverse types of services contracts found within the systems side of AFMC.

⁸Ms. Druyun is the Principal Deputy Assistant Secretary of the Air Force for Acquisition and Management. In May 1995, Ms. Druyun issued the first of a series of initiatives she called Lightning Bolts to reform Air Force acquisition and sustainment processes. The goal was to implement faster, better, and cheaper ways of doing business.

2. NATURE OF SERVICES AT THE ALC AND PRODUCT CENTER

Outline

- **Nature of Services at the ALC and Product Center**
- **Application of Performance-Based Practices**
- **Summary and Implications**

The remainder of this Documented Briefing is organized as follows. First, we describe the kinds of services purchased by the ALC and Product Center, focusing on those characteristics that are important for implementation of AFI 63-124. We then compare the services acquisition practices at these Centers to the four-part definition of a performance-based service contract found in FAR Part 37. We conclude with a summary of our observations and implications for our current research. In the Appendix, we provide a detailed discussion of the uncertainty surrounding the set of services to which AFI 63-124 applies.

The ALC and Product Center Purchase a Broad Range of Services

- **Operational contracting for installation support services**
 - **Facilities and equipment support, information management, communications, base supply**
 - **Aircraft-related services, such as launch and recovery, air show support, maintenance of support equipment and towing vehicles**
- **Systems contracting**
 - **Advisory and assistance services (A&AS)**
 - **Other engineering services**
 - **Component repair**
 - **Research and development**
 - **Logistics/sustainment services**

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During our visits to the ALC and Product Center, we learned about two categories of services: services purchased by operational contracting to support infrastructure and activities at the installations themselves, and services purchased by the Product Directorates and Program Offices to acquire and support weapon systems and other mission capabilities.

The operational contracting organization at each Center purchases a wide range of services. Examples from our discussions are listed in the chart above.

We learned about five types of services on the systems sides of these two Centers.

At both Centers, personnel focused much of our conversations on advisory and assistance services (A&AS) because personnel perceive that

these present special challenges in implementing AFI 63-124.⁹ As the name suggests, the primary purpose of A&AS is to provide advice or assistance in managing some aspect of Air Force work.¹⁰ At these two Centers, these services appear primarily to include ongoing staff support activities in the Product Directorates and Program Offices, such as collection and analysis of data from the field, assistance with preparation of briefings, graphics, financial management, administrative support, technical order management, and software support. At the Product Center, in one Program Office that is in the middle of an acquisition, 25 of the 29 people in the office were A&AS contractor staff.

A second service category that received a lot of attention during our interviews is engineering services that fall outside of A&AS. Many services that we learned about at the ALC fall within the subcategory of “Sustaining Engineering.” Personnel frequently described them as services to address a specific problem. For example, a contractor might be hired to help the ALC address a new airframe problem discovered during heavy maintenance (i.e., overhaul activities) and to provide a technical report describing (a) its cause, (b) whether there is reason to believe that the whole fleet is affected by it, and (c) several alternatives to fix it. Other examples include evaluation of a software problem, updating scenarios in a simulator, management of obsolete parts for a weapon system, and analysis of maintenance policy questions (e.g., the benefits of two-level versus three-level maintenance¹¹).

A third type of service purchased by the ALC is component repair. For example, the ALC sends a contractor a broken line replaceable unit (LRU) and the contractor returns a serviceable one within a specified number of days.

Fourth, at the Product Center, we learned about research and development services. According to one person we interviewed, these services generally result in the design for a weapon system or mission

⁹Because of the potential to use A&AS contractors inappropriately to perform activities that should be performed by government personnel, A&AS receives high-level attention and scrutiny. Challenges associated with defining requirements and managing these contracts are the subject of a recent DoD Inspector General report. See Office of the Inspector General, Department of Defense (2000).

¹⁰*AFMC Advisory and Assistance (A&AS) Guide* (2001).

¹¹For systems supported through two-level maintenance, repairs occur at the flight line and a centralized facility such as a depot. Three-level maintenance adds intermediate maintenance capabilities, typically in a back shop at the installation.

capability. Services like these are characterized by a series of tasks along a “critical path” with associated milestones.

Finally, both the ALC and Product Center purchase services that we have grouped into the category of logistics or sustainment services. Some aspects of aircraft heavy maintenance or engine overhaul would fall within this category, although these can also be thought of as a type of remanufacturing. Another example is depot-level support for a mission-critical computer system. The contractor provides serviceable electronic cards, fixes software problems, performs diagnostics, and forecasts future availability problems.

In the next two charts, we will describe the characteristics of these services that are important for implementation of AFI 63-124 by contrasting operational and systems services.

Many Installation Support Services Are Ideally Suited to AFI 63-124

- **Many services are found in the commercial sector**
 - **Commercial performance standards are often available**
 - **Many services have a robust industrial base**
- **Performance of many services can be evaluated repeatedly**
- **Performance can often be measured objectively**

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The Air Force is in the process of incorporating into AFI 63-124 detailed examples of how to apply performance-based practices within contracts for operational services. Given the nature of these services, it can be fairly straightforward to apply PBSA to them.

First, many operational services have close, if not exact, analogues in the commercial sector. For example, commercial firms maintain office buildings, fleets of vehicles, and information technology infrastructure. Providers of aircraft-related services must also maintain the associated infrastructure.

One person in operational contracting shared with us that the commercial nature of many of these services makes it easy to apply performance-based practices. There are commercial standards of performance readily available to reference. In addition, many firms provide these types of services, so the Air Force is not beholden to any one service provider, which makes performance incentives more meaningful.

Second, many of the services purchased through operational contracting (e.g., janitorial services, grounds keeping, or equipment maintenance)

occur continuously or repeatedly over time, so the customer can evaluate contractor performance frequently. One person described this as the ability to measure the incremental value added by the contractor.

Finally, and perhaps most importantly, performance of many of these activities can be measured objectively. The customer can measure the height of the grass, calculate equipment availability, and check to make sure preventive maintenance is performed on time. These measured outcomes can then be compared to a clear standard of success to objectively determine whether the contractor performed well.

Systems Services Differ from Operational Services in Important Ways

- **Some activities have a “task order” flavor**
 - **Limited opportunities to evaluate performance**
- **It may be difficult to define a “successful” outcome in advance**
 - **“Learning that what you asked for is impossible may still be useful”**
- **Performance evaluation is subjective for some services**
 - **Many services are evaluated as “pass/fail”**
- **Competition is limited in many cases**
 - **Proprietary data, obsolescence, rapid evolution of technology, limited demand**

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During our interviews, personnel repeatedly offered their assessments of how services on the systems side differ from operational contracting activities. Here, we focus on the distinctions that are relevant to implementation of AFI 63-124.

First, many activities on the systems side have a “task order” flavor, rather than being ongoing activities that occur repeatedly over time. As discussed earlier, engineering support services often address a specific problem. Repair of certain types of components may occur infrequently. Research and development activities can have long stretches between critical milestones. In each of these cases, the customer has limited opportunities to evaluate performance. Although contractors often provide monthly reports on their activities, more than one person asserted that these are only loosely correlated with whether the Air Force gets what it needs. One person noted that progress within engineering and research and development services does not occur in a linear fashion; there may be periods during which little progress is made interspersed with others during which much is accomplished.

Next, it may be quite difficult to define a successful outcome *ex ante*. For example, the new desired capability might not be feasible given current technology or funding levels. Personnel at the ALC described an engineering services contract to analyze more efficient ways to track tool usage by aircraft maintainers in the depot. At the end of the study, each of the alternatives proposed by the contractor required more resources than the ALC could provide; however, personnel from the Product Directorate that paid for the study indicated that they were pleased with the contractor's efforts and the information they received. In their eyes, actually implementing a new way to track tool usage was not the only possible successful outcome for the study. One of the Program Offices described a depot-level maintenance contract for a mission-critical computer system. It would seem straightforward to determine success for this type of contract—i.e., a specified level of system availability—but a lack of funding caused the Program Office to constantly prioritize the contractor's maintenance activities to address only the most critical issues at any one time.¹²

In part due to the difficulty in defining success *ex ante*, personnel expressed the opinion that many services on the systems side cannot be evaluated objectively. In fact, personnel repeatedly described outcomes as “pass/fail”—i.e., either the result of the service met the customer's needs or it didn't. A&AS contractors “pass” if they satisfy the needs of the Program Offices or Product Directorates that they support. An engineering assessment of how to fix a new maintenance problem succeeds if Product Directorate engineers are satisfied that the potential solutions make sense. A research and development project is successful if the Program Office feels that the contractor made a good effort to figure out how to provide the desired capability, even if the capability proves to be too difficult at this time.

Finally, our discussions indicate that competition is more limited for systems services contracts than for operational services contracts. Many of the systems contracts we learned about during our two visits are sole-

¹²Similarly, because of low turnover of inventories of some Air Force components, it may be difficult to assess whether some repair contracts are successful. An Air Force customer may not discover a problem with a given repair until after the contract that covered that repair has been closed out.

source contracts.¹³ This can occur for a variety of reasons. For some maintenance contracts, the Air Force does not own the technical data, so only the original equipment manufacturer (OEM) can provide the service. Personnel at both Centers said that technological obsolescence also contributes to the prevalence of sole-source contracts. Some of the electronic components on Air Force weapon systems are based on older technologies that are no longer used in the commercial sector. This means that sometimes even the OEMs are no longer willing or able to support older military-unique technologies, so another firm must be hired to reverse-engineer parts of weapon systems. With limited demand for the capability to repair or enhance such systems, the Air Force often cannot support more than one source of supply. In other mission areas, the Air Force is constantly pushing the technical community to come up with better ways to meet its needs. For military-unique equipment, Air Force personnel told us that it is difficult to generate enough demand to support the efforts of more than one firm to develop specialized expertise and invest in pushing technology forward. This is especially problematic for some of the newer aircraft weapon systems with small fleet sizes.

¹³Based on an analysis of FY01 DD350 data on Air Force service contracts, our colleague, Mary Chenoweth, notes that AFMC's Product Centers allocated 56 percent of their systems service contract dollars (captured in the DD350 data) through sole-source contracts; the figure was 46 percent for AFMC's ALCs. In comparison, 29 percent of operational services contract dollars were awarded through sole-source contracts.

The ALC and Product Center Question Which Services Are Subject to PBSA

- **Regulations provide different definitions of “services” and different lists of PBSA exemptions**
- **“Repair” versus “remanufacturing” is an issue at the ALC**
- **The Product Center hesitates to call activities on the systems side “services”**
- **Some seem to think PBSA should only apply to services governed by the Service Contract Act**

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During our interviews at both Centers, we were repeatedly asked how we define services for the purpose of our research. This is a central implementation question because, rather than listing every activity for which performance-based practices apply, AFI 63-124 simply states that it applies to all service contracts greater than \$100,000 annually, except for a list of exemptions found in Attachment 2 of the AFI. Thus, one must understand the definition of the universe of services to determine whether the AFI applies to a given activity.

We discovered that the reason the answer to the service question was so important to the people we interviewed at the Centers is that many of their activities that look like services to us are not considered services within the systems side of AFMC. Thus, many questioned how (if at all) AFI 63-124 applies to them. The question of applicability was reinforced by the emphasis on operational contracting activities within the current version of the AFI.

Each time we were asked how we define services, we responded with the definition found in FAR Part 37.101, which governs service contracts. According to this regulation, a service contract is one in which the

primary task of a contractor is to perform an identifiable task rather than to furnish an end item of supply.¹⁴

We quickly learned that this definition is not easy to apply, as a variety of regulations provide different lists of what might be considered a service. The legislation most often cited in our interviews was the Service Contract Act of 1965, which places certain wage and employment obligations on a contractor. The section of the Code of Federal Regulations (29 CFR 4.130) that implements this Act provides a list of 55 services to which the Act applies. FAR Part 22.1003-5, which implements the Act for federal contracts, provides a more concise list of services, all of which are included in the CFR list. FAR Part 22 also has a long section that distinguishes repair services, which are governed by the Service Contract Act, from *remanufacturing*, which is considered to fall under the Walsh-Healey Act (under which contractor obligations are slightly different).

In addition to lists that help define what constitutes a service, there are other regulatory lists that describe what services should be purchased using performance-based practices. For example, FAR Part 37 lists several service “areas” covering many services that are listed in the CFR related to the Service Contract Act, but these areas also include several services that are not explicitly mentioned in the CFR or in FAR Part 22. Among these are advisory and assistance services (A&AS), architect-engineer services, communications services, research and development, and transportation services. However, FAR Part 37 explicitly exempts four types of services from performance-based practices: certain architect-engineer services, construction, utility services, and services that are incidental to supply purchases. This list differs in some ways from the exemptions in the current version of AFI 63-124. Finally, the Air Force’s PBSA Implementation Plan (developed in response to Under Secretary of Defense Gansler’s requirement that 50 percent of all services be acquired in a performance-based manner by 2005) provides a “universe of services” to which PBSA should be applied.¹⁵ This list contains some, but not all, of the services in FAR Part 37 and adds base operations and support services, medical services, and undefined “other” services. Like FAR Part 37, the Air Force implementation plan excludes architect-engineer

¹⁴“Service contract’ means a contract that directly engages the time and effort of a contractor whose primary purpose is to perform an identifiable task rather than to furnish an end item of supply. A service contract may be either a nonpersonal or personal contract. It can also cover services performed by either professional or nonprofessional personnel whether on an individual or organizational basis.”

¹⁵See U.S. Air Force (2000).

services, but unlike the FAR, it also excludes research and development acquisition.

To further illustrate the complexity of distinctions among services and opinions about services to which PBSA applies, many personnel at the ALC classify their component repair contracts as remanufacturing or supply activities rather than services.¹⁶ As such, the contracts are exempt from the Service Contract Act (Walsh-Healey applies instead). Because of this distinction, personnel feel justified in exempting these contracts from PBSA. (More detail about the differences between these Acts and their relevance to PBSA is provided in the Appendix.) At the Product Center, a senior executive said that there was “an aversion to calling the process of design, development, and production a service.” In a discussion about performance management, a program manager pointed out “R&D is not under the Service Contract Act”; another said the Product Center does not consider R&D to be a service because it results in a design (i.e., product). In another discussion, we heard “Logistics personnel don’t have experience with the Service Contract Act, and fear it [because it increases complexity, limits contract lengths¹⁷, and increases wage rates].” These comments all arose during discussions of performance-based practices. In light of the comments from the ALC, it is clear that some organizations at each of these Centers have developed the impression that PBSA should only be applied to contracts that involve services covered by the Service Contract Act.¹⁸

We suspect that these comments are a reflection of the understanding at the ALC and the Product Center that PBSA is, in general, easier to implement in operational services (grounds maintenance, etc.), many of which can be accomplished by people with basic skill levels, than in systems services, which often require personnel with specialized training.

¹⁶This is because they view the serviceable component, rather than the repair, as the end product.

¹⁷Contract length for contracts subject to the Service Contract Act is limited to five years (see 41 USC 353). Some component repair contracts cover ten years.

¹⁸In an analysis of FY01 DD350 data on Air Force service contracts, Mary Chenoweth found that 45 percent of operational service contract dollars are recorded as being associated with services that fall under the Service Contract Act; only 1 percent is associated with the Walsh-Healey Act. In contrast, 26 percent of ALC’s and 7 percent of Product Center’s systems service contract dollars are associated with the Service Contract Act, while 28 and 44 percent, respectively, fall under Walsh-Healey.

We heard that the lower skilled people are exactly those whom the Service Contract Act was designed to protect.¹⁹

¹⁹In fact, the definition of a “service employee” given in FAR Part 22.1001 excludes “any person employed in a bona fide executive, administrative, or *professional* capacity.” (emphasis ours)

3. APPLICATION OF PERFORMANCE-BASED PRACTICES

Outline

- **Nature of Services at the ALC and Product Center**
- **Application of Performance-Based Practices**
- **Summary and Implications**

We now turn to the successes and challenges personnel at the ALC and Product Center are encountering in their efforts to implement performance-based practices in their service contracts. We focus primarily on systems contracting activities.

ALC and Product Center Personnel Assert Many Systems Contracts Meet Three PBSA Requirements

- ✓ 1) Describe requirements in terms of results required rather than the methods of performance of the work
- ? 2) Use measurable performance standards and quality assurance surveillance plans
- ✓ 3) Specify procedures for reduction of fee or reduction to price of a fixed-price contract when services are not performed or do not meet contract requirements
 - Air Force encourages reperformance at no cost when possible
- ✓ 4) Include performance incentives when appropriate

From FAR Part 37 and AFI 63-124

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According to FAR Part 37.6 (which AFI 63-124 implements), performance-based contracts satisfy four criteria.²⁰ First and foremost, requirements must reflect *what* the purchaser or user of the services needs, not *how* the work should be performed.

Second, there should be measurable performance standards (for quality, timeliness, etc.) and performance thresholds so that the purchaser, through the quality assurance surveillance plan, can track performance against clear goals.

Third, the contract should contain provisions to reduce the fee or the cost of a fixed-price contract if services do not meet the purchaser's specified needs. The Air Force considers the contract clauses 52.246-4 and 52.246-5, which specify reperformance at no additional cost in the event of unsatisfactory work, to satisfy this requirement.

²⁰For a contract to be recorded in the Federal Procurement Data System (DD Form 350) as performance-based, a minimum of 80 percent of the anticipated obligations under the procurement must satisfy the four criteria (FPDS, 2002).

Finally, performance incentives, such as award fees or award-term contracts, should be used when appropriate.

In most of our interviews, we walked through this definition to learn how personnel are applying these practices and where they see additional opportunities. People at the ALC and Product Center said that they were not meeting all of the requirements of AFI 63-124; one individual said that we would not find one contract on the systems side of AFMC that satisfies all four criteria of the instruction. Nonetheless, the opinion of most of the people we talked to is that they have been writing performance-based contracts for years.

In reference to the four-part definition of a performance-based service contract, across the range of services contracts discussed, contracting officers and requirements personnel felt that the majority of their descriptions of service requirements in their contracts are outcome-based (i.e., stated in terms of “what” not “how”); effective quality assurance programs to manage outcomes are in place; reperformance is an option to address any deficiencies; and incentives are available.

In fact, AFMC FAR 5337.91 (Services Contracts), which was rescinded when AFI 63-124 was approved for AFMC, listed many of the key components of a performance-based service contract—and at least one person we interviewed thought that A&AS was better managed under the old regulation.²¹ We were also told that when the old regulation was in force, there were separate training coordinators for operational contracting and A&AS contracting.

The problem that virtually everyone on the systems side of the ALC and Product Center has with implementation of AFI 63-124 is the incorporation of measurable performance standards. In the next few charts, we’ll summarize comments on the four parts of a performance-based service contract, saving the difficult part (measurable performance standards) for last.

²¹The rescinded regulation described “policies and responsibilities for surveillance of service contracts where the place of performance for the effort is the center or laboratory where the contract is awarded.” While the regulation also said that the contracting officer was required to “ensure contractor performance is measurable and appropriate surveillance can be accomplished,” the AFI 63-124 language requiring “measurable performance *standards*” is apparently interpreted to be more burdensome. (emphasis ours)

Describing Results Required Is Generally Not a Problem

- **Many requirements can be stated in terms of “what,” not “how”**
- **Sometimes *how* something is done still matters**
 - **Environmental management, flight safety, packaging**
- **Confusion about AFI terminology for description of requirements**
 - **“A SOO is performance-based”**
 - **“A SOW is a contractor’s detailed ‘how to’ plan”**

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We were told that for many service contracts at these two Centers, describing requirements in terms of results is relatively easy. One A&AS contract describes a task as follows:

The contractor shall assist with the preparation, production and presentation of performance measurements. Such measurements shall include, but not be limited to [Center] metrics, SPO metrics, and Business Area metrics. These performance indicators shall be maintained and updated monthly.

We were told that component repair contracts use a lot of “boilerplate” performance-based language indicating that the Air Force will send the contractor an unserviceable item and expect to receive a serviceable one within a specified number of days. There are clear performance metrics for quality (deficiency reports) and timeliness.²² For a vehicles

²²Mary Chenoweth’s analysis of quality deficiency reports for a group of Air Force component repair contracts indicated that while these reports represent the best single source of data on contractor quality, their usefulness is limited by incomplete record-keeping.

maintenance contract, mobile maintenance performance requirements are specified by the allowed response times for roadside assistance calls, which vary by time of day. One Product Directorate described a portion of its software-related services as “the contractor will update software X in equipment Y to have capability Z.”

Most people we interviewed seemed convinced that using performance-based requirements is beneficial; however, several people at both Centers noted that there are many services that should not be purchased using “pure” performance-based requirements. Environmental management services were cited more than once as an example. Personnel told us that the Air Force cannot transfer its legal responsibility to the contractor; as a result, it must have a greater degree of control over how the services are provided to ensure compliance with federal regulations. Similarly, aircraft maintenance related to safety-of-flight issues must be performed according to a step-by-step process governed by technical orders. Contractor field teams that install modifications at installations are provided with detailed instructions. Some component repair contracts specify packing and shipping requirements in laborious detail. When we asked about this, we were told that unlike many commercial items, some types of Air Force components may sit in warehouses for many months or years, so packaging integrity is crucial.

The AFI’s reference to the requirements document as a “statement of work” led to some confusion among systems personnel. There was some discussion by the systems personnel at both Centers about perceived differences between statements of work (SOWs) and statements of objective (SOOs). In the opinion of many, a SOO is the document that tells the contractor what the Air Force needs; the contractor responds with a SOW that describes its plan to meet that need. One person even commented that the AFI 63-124’s use of the term SOW (even though the AFI specifies that the term should be interpreted broadly) and its description of the SOW format might actually *discourage* the writing of short performance-based requirements documents. In this person’s opinion, engineers accustomed to writing SOWs in the old style would interpret the AFI format as a requirement to include all of the “how to” information they have used in the past.²³ Operational contracting

²³For some component repair contracts, the Air Force may include a SOO in the request for proposal (RFP). Then a contractor will propose how it will meet the objectives in a SOW. If acceptable, the contract then includes the SOW that the contractor, not the Air Force, produced.

personnel did not express as much confusion over the distinction between SOWs and SOOs.

As a side observation, we interviewed several people who referred to themselves as performance-based contracting “converts.” These people used to tell contractors how to perform the work and now are supporters of telling contractors what the Air Force needs and letting the contractor figure out how to meet those needs. A program manager from one Product Directorate said that he used to work with industry early in the process to help specify the requirements. Sometimes the collaboration ultimately led to requirements so specific that they could only be satisfied by a particular model number produced by the contractor with whom he had conferred during the requirements development phase. Now this program manager promotes working with industry and with contracting officers to define the Air Force’s needs independently of technologies available by any particular contractor and using this to construct a SOO. He asserted that the performance-based approach has led to increased competition as well as more innovative and improved solutions to the Product Directorate’s needs. Similarly, one requirements person from operational contracting said that he believes the new performance-based approach provides more opportunities for contractors to succeed in meeting the Air Force’s needs.

Education on “How” Versus “What” Is Still Needed for People New to PBSA

- **Many personnel on the systems side of the ALC struggle to relate SAF/AQC briefing to their job**
- **Some Product Center personnel found DAU course helpful**
- **There’s no substitute for working through a real example**
 - **Support from AFMIA, AFCESA was particularly useful for operational contracting**

Even though personnel reported a lot of success in using performance-based service requirements, we learned about some barriers to success at both Centers. We were told that some Program Offices still try to purchase A&AS by specifying requirements for specific numbers of people with certain skills and experience. In discussions with personnel from operational contracting at both Centers, we were told that some requirements personnel are having difficulty distinguishing between specifying “what” they need and specifying “how” the work should be accomplished. For example, there was confusion about whether it is appropriate to tell a painting contractor that the paint should be mixed to match across a large wall or that the wall surface should be prepared for paint, filling in cracks and smoothing uneven surfaces. Some asserted that if they specify more than “paint the wall,” the requirement is no longer performance-based. These personnel felt that they could not express what the installation truly needed within the new format. We discerned that one source of difficulty is that some requirements personnel remember the previous performance problems that led to the old process-based statements of work, instructions, and regulations, and fear that the problems will recur with statements of work that are less detailed.

Based on these anecdotes, it appears to us that the Air Force could benefit from additional training on how to implement performance-based practices, particularly for requirements personnel. Many people we interviewed had received some training already. Most of those at the ALC had attended a recent on-site briefing on PBSA provided by SAF/AQC. However, those who work on the systems side expressed frustration that the information provided was tailored to operational contracting activities rather than the services they purchase for the Product Directorates. In contrast, no one at the Product Center had seen this briefing. However, a select group that included XP (Plans and Programs) and acquisition personnel had attended a course taught by the Defense Acquisition University (DAU). We were told that they thought it was quite useful.

When we raised the topic of training with the operational contracting organization at each Center, we were told that formal training is useful but not sufficient, even when it is built around case studies. They believed that the most effective learning experience is working through a real example with knowledgeable support. Personnel at one Center received hands-on assistance from the Air Force Manpower and Innovation Agency (AFMIA); a person spent a week with them helping to convert their requirements from process-based to performance-based. Personnel at the other Center benefited from information provided by the Air Force Civil Engineer Support Agency (AFCESA). Personnel stated that they believed this was the best training that they had received on applying performance-based practices to their work.

Reperformance Is More Common Than Reductions in Fee or Cost

- **Most use the reperformance option**
 - **Although some feel that it is inappropriate for professional services**
- **Services appropriate for cost-based contracts present challenges**
 - **Time and materials (T&M) makes reductions difficult**
 - **Failure may not be due to shirking, difficult to justify reperformance at no cost**
- **Contract termination or poor CPARS ratings are other options**

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In our interviews, personnel discussed the use of formal (contractual) and informal incentives to align contractor activities with the needs of the Air Force.

In our discussions of negative incentives, we learned of a few examples in which reductions in fees or cost (commonly referred to as “deducts”) are used. One Product Directorate at the ALC has an aircraft heavy maintenance contract in which the contractor and the Air Force split any cost overruns (or underruns).²⁴ We heard about a contract for contractor field teams (CFTs) that includes a negative incentive, although we were not provided any details. However, many personnel from both Centers emphasized a preference for the use of reperformance at no cost to the Air Force instead of these reductions.

Interestingly, one person said that he was uncomfortable with the idea of applying reperformance to professional types of services such as A&AS,

²⁴There was some dissatisfaction arising from the fact that quality is not included in the incentive. Product Directorate staff felt that the contractor was reducing quality to cut costs and thus share in the savings.

research and development, and engineering services. He felt that reperformance is much more relevant to “workmanship” types of services. Again, we interpret this as related to the feeling that AFI 63-124 is more applicable to operational contracting and Service Contract Act kinds of activities than to the typical service on the systems side of AFMC.

Many personnel indicated that services for which the nature of the work (and even what a “successful” outcome will look like) is not known upfront, such as some engineering services and research and development, present their own challenges in implementing negative incentives. We were told that it makes sense to purchase such services through cost-based contracts, which personnel felt limited their ability to exercise deducts (perhaps the FAR definition of a performance-based service contract focuses on the use of negative incentives in fixed-price contracts for this reason).²⁵ The two primary cost-based contract types discussed during our interviews were time and materials (T&M) and cost plus fixed or incentive fee.²⁶ It appears to us that time and materials contracts are more commonly used at the ALC than the Product Center.²⁷ In these cases, the Air Force does not have an opportunity to reduce fee, and personnel indicated that it is difficult to justify not paying contractor costs. More generally, it appears to us that personnel at both Centers find it difficult to justify reperformance of these types of services at no cost due to the fact that, as discussed earlier, the contractor might not have met the original goal for some reason beyond its control. For example, it might be impossible given current technology and funding levels to create a new capability or expand the capability of an existing system. In these cases, it is unreasonable to expect the contractor to fund continued research on its own.

²⁵In a firm fixed-price contract, the price paid for the service is not adjusted based on the cost incurred by the contractor in providing the service (FAR Part 16, Subpart 16.202).

²⁶In a T&M contract, a contractor is paid for direct labor hours (a specified fixed hourly rate that includes wages, overhead, general and administrative expenses, and profit) and the cost of materials (which can include material handling costs) used in providing the service. In a cost plus fixed fee contract, the contractor receives reimbursement for allowable costs incurred in providing the service as well as a negotiated fee that is fixed at the beginning of the contract. In a cost plus incentive fee contract, the contractor receives reimbursement for allowable costs incurred in providing the service as well as a fee that is derived from the difference between the target cost for the contract and the total allowable costs incurred (FAR Part 16, Subparts 16.601, 16.306, 16.304, and 16.405-1).

²⁷Personnel at the ALC indicated that Ms. Druyun is strongly discouraging the use of cost plus contracts.

When asked how they deal with a contractor that clearly isn't doing a good job in such situations, many personnel felt that the threat of contract termination or a poor Contractor Performance Assessment Reporting System (CPARS) report provided the desired incentive. Of course, these presumably have less effect on sole-source contractors.

Positive Incentives Are More Common

- **Several operational and systems contracts have award fees**
 - **Interest in award term contracts**
- **Some question the applicability of incentives to A&AS**
 - **Many feel CPARS is an effective motivator**

One person said that he sees the Air Force moving away from negative incentives toward positive incentives such as award fees and award term contracts. His comment is consistent with our impressions from both Centers.

A large operational contract that will soon be awarded will be a firm fixed-price plus award fee contract, with criteria for the award fee based on quality and technical performance. This contract uses as a baseline the costs of the three old contracts that are being replaced; contractors are advised not to compete if they cannot perform for less than the price associated with the previous contracts. The contracting officer in this case emphatically claimed that the contractor has so many incentives to perform well that if it doesn't, something is wrong.

As mentioned earlier, one aircraft heavy maintenance contract that we learned about is a fixed-price target fee contract in which cost overruns/underruns are split 50-50 by the contractor and the Air Force.

A large proposed operational contract will have a complex award fee based on the contractor's performance along three dimensions:

management, technical ability, and cost control. Each of the three categories is broken down into subelements. Weights assigned to elements change after the first year, with management receiving relatively more weight during the initial transition year (cost receives the smallest weight in each year). Contractor performance within each subelement is subjectively evaluated based on five possible ratings. Subelement ratings are rolled up to calculate the percentage of the total possible fee that will be awarded. We learned of similar award fee structures for engineering services and sustainment contracts on the systems side of this Center.

In many of our interviews, personnel expressed interest in award term contracts, in which the length of the contract is formally tied to contractor performance. However, we only saw one example of a proposed award term plan. The proposed structure is similar to the award fee described above.

Some people we interviewed believe that it is difficult to provide incentives for A&AS. Comments included “How do you evaluate whether you received the contractor’s best advice?” and “How do you incentivize pass/fail activities?” In fact, several people questioned whether performance incentives are even appropriate in this setting. In their opinion, an organization should *expect* good performance under an A&AS contract. Why should they have to pay more to get the contractor’s best advice or performance? Instead, these personnel suggested that it is the responsibility of contractors to reward the employees that perform particularly well. So, bonuses and incentives for this kind of work should come *through* the contractor, not directly from the Air Force.

Some offices feel that feedback through CPARS ratings is the best way to provide incentives to contractors for these types of services. Fortunately, there is a feeling at both Centers that these performance ratings are quite important to contractors because the ratings directly affect the contractors’ abilities to get future contracts. As an example, one Center purchases A&AS through a large umbrella contract that includes blanket purchase agreements with a number of prescreened contractors. An individual Program Office with a requirement for A&AS can select the contractors that it would like to provide proposals; full and open competition at the task order level is not necessary as long as the Program Office chooses three or more firms to compete. Contractors know that their CPARS information is used by Program Offices to help determine which firms get an opportunity to compete for individual task orders.

The anecdotes on this chart and the previous one indicate a wide range of opinions on the use of incentives and disincentives. The manager of the CFT contract said that they were trying to get away from using disincentives/deducts, but they were finding it difficult to develop positive incentives. On the other hand, another contracting officer thought that incentives were not as effective as deducts for motivation. Finally, a third group thought both incentives and deducts were necessary in combination to encourage good performance from the contractor.

“Measurable Performance Standards” Is a Sticking Point

- **Many interpret FAR language to require:**
 - **Objective performance data, collected frequently**
 - **The desired result to be known in advance**
- **It is difficult to reconcile this interpretation with A&AS and some engineering services**
 - **Assessments are often subjective**
 - **Infrequent deliverables**
 - **Correct answer is not known in advance; success may not even be possible**
- **When measurable performance standards are available, still worry about using *ex ante* measures of success**
 - **Changing requirements**
 - **Inability to control all inputs**

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Personnel at both Centers expressed the opinion that one of the biggest challenges associated with implementation of performance-based service contracts as defined by FAR Part 37 is defining measurable performance standards for the services they buy on the systems sides of these organizations. This seems to be particularly problematic for personnel working with A&AS and other engineering services contracts.

For those who had considered the applicability of AFI 63-124 to the services that they buy, virtually everyone we interviewed perceived—based on the examples given when PBSA was briefed to them—that “measurable performance standards” require frequent collection of objective performance data that allows an ongoing assessment of performance against a known measure of success, i.e., “measurable performance standards” means that you can evaluate the percentage of time the contractor met the performance goal during a certain period of time. One person suggested that a contract is only performance-based if there is a metric for daily value added. As examples, many people cited operational contracts such as grounds maintenance. In their minds, it is straightforward to specify that the grass height should be maintained between two and three inches and then to measure periodically to make sure the contractor is performing satisfactorily. This process results in a

metric that can assess the percentage of time that a requirement is met. However, personnel expressed the opinion that such measures and assessment are more difficult for some systems services such as A&AS and other engineering services.

Traditional performance assessments for A&AS and engineering services are often subjective in nature. In addition, it may be difficult to collect a series of data points on performance over a period of time. Even though a program manager may have day-to-day contact with A&AS contract staff, the best measurement of performance might be a subjective assessment of his or her satisfaction with the data analysis or briefings they provide. Many engineering services contracts are in response to a specific problem. In order to judge the quality of an engineering assessment of a structural problem in the fleet, a Product Directorate may rely on its experience with similar problems in the past, instead of on some quantitative measure. Although the contractor's plan for addressing the problem usually includes scheduled milestones, ultimate success (in terms of meeting customer needs) may not be correlated with the contractor's incremental progress. When trying to figure out how to add a particular capability to an aircraft subcomponent, the contractor might have to eliminate many potential solutions before finding the right one, so progress rarely occurs in a linear fashion.

One requirements person interprets the requirement for measurable performance standards to mean that he must know the answer to the question (outcome) in advance, in order to judge whether the contractor has performed well, which doesn't make sense for A&AS and engineering support services. According to this individual, this requires that "I've already worked out my solution, and I'll compare the contractor's solution to mine. Then I'll grade them [on how close they came to my solution]." Another person went so far as to say "there's no metric that allows an assessment of effectiveness" in A&AS.

Personnel at both Centers told us that sometimes the outcome might be that the problem cannot be solved given current technologies or resource constraints. For example, one Product Directorate asked a contractor to design an electronic component made from commercial-off-the-shelf (COTS) technology to replace a component plagued by technological obsolescence. Partway into the project, the contractor discovered a military-unique chip in the original component that could not be replaced with a commercial one; therefore, the original objective for the contract was not feasible. This discovery, while not the desired goal initially, does not preclude a successful outcome for the contract. In this case, a

performance standard that required successful problem solution (i.e., a new component made entirely from COTS technology) would have been unrealistic and inappropriate.

Personnel on the systems sides of the two Centers noted that even when objective measures of performance are available, it might not be wise to tie incentives to them. The evolving state of knowledge—and sometimes funding constraints—means that requirements for services on the systems side can change over time, making measures of success determined *ex ante* irrelevant. One example mentioned in our interviews was that priorities for maintaining a mission-critical computer system evolve over time as the Program Manager seeks to use limited sustainment funds in the most effective way. In addition, in many cases, the contractor cannot control all the inputs that contribute to ultimate performance. For example, we were told of more than one example where “timeliness” would be a poor measure of performance because of contractor reliance on government-furnished equipment. In one of these cases, it was the users’ responsibility to turn equipment over to the contractor for scheduled maintenance. Some users would hesitate to do so, since turning in the equipment meant they would lose some capability while it was being repaired, and this meant the contractor would sometimes get behind in its maintenance. It would have been wrong in this case to punish the contractor for not meeting a maintenance schedule when it was not his fault.²⁸

Some personnel felt that customer satisfaction is the only measurable outcome-oriented performance standard in some cases. One contracting officer told us that he has tried to convince SAF/AQC that customer satisfaction measures should count as measurable performance standards, but he felt he was rebuffed.

Dr. Gansler’s 2000 memo also directed the services to create implementation plans to promote the use of performance-based practices in their services acquisitions. Interestingly, the Air Force’s PBSA implementation plan (U.S. Air Force, 2000) recognizes the difficulty of applying the four-part PBSC definition to A&AS and allows the maximum practicable application of PBSA to count as full implementation:

²⁸In many component repair contracts, the “clock” for evaluating repair turnaround time stops if the contractor is waiting on materials that are supplied by the Air Force and starts again when the materials arrive. Presumably, a similar arrangement could be implemented in these cases as well.

The use of PBSA for A&AS will have unique application under this plan.... Contracts for A&AS acquire expertise and knowledge for a variety of tasks that result in subjective and intangible outputs and do not always lend themselves to the application of measurable performance objectives and thresholds as required by PBSA. Due to the subjective nature of A&AS, the methods of surveillance (i.e., 100% and/or periodic inspection, random sampling, customer feedback) used by the Air Force today for routine services are not always appropriate.... In many cases, PBSA is not suitable for all A&AS requirements; however, the use of PBSA methods should be considered and applied to the maximum extent practicable when it is advantageous (value added) to the Government. For purposes of reporting A&AS under this plan, limited application of PBSA will be considered and reported as full PBSA implementation (p. 3).

Unfortunately, the people we spoke with, as well as the SAF/AQC person referenced above who rejected the notion of using customer satisfaction as a performance standard, seemed to be unaware of this additional guidance for A&AS.

This official acknowledgment that A&AS are not amenable to the application of measurable performance standards implies that SAF/AQC interprets such standards strictly, and this strict interpretation has been communicated to personnel at the ALC and the Product Center. Since there are several other kinds of services in addition to A&AS for which this interpretation is problematic, it is unfortunate that the implementation plan does not make allowances for them as well.

Personnel Feel QASPs Are Effective Even Without “Measurable” Standards

- **Customers can communicate to contractors their satisfaction or dissatisfaction as well as underlying reasons**
- **Some feel that the ability to monitor and report discrepancies meets the *intent* of requiring “measurable standards”**

Despite the perceived difficulty of developing measurable performance standards, virtually every person we spoke with felt that their Quality Assurance Surveillance Plan (QASP) allowed them to adequately monitor and document contractor performance so that the Air Force received the service it needed at a reasonable price. They could easily communicate their opinion of performance to a contractor, as well as the underlying reasons for the opinion, so that any performance problems would be addressed.

This ability was primarily due to close communication between Air Force and contractor personnel. In fact, several requirements personnel said that they communicate informally with their engineering services contractors several times each day. This informal communication is supplemented periodically by formal Technical Interchange Meetings (TIMs). We heard examples where quality assurance personnel regularly check with Program Managers to assess contractor performance (i.e., customer satisfaction) in A&AS. In addition, many reported that they have formal monthly or quarterly meetings between Program Office/Product Directorate and contractor staff. These meetings are used to document performance during the prior period, to discuss how the

contractor can improve performance in the coming period to better meet its customer's needs, and to communicate any unusual requirements that may be expected during the coming period.

Although many personnel we interviewed on the systems sides of the ALC and Product Center have not been checking the new data field on the DD Form 350 indicating their contracts meet the requirements for PBSA, two organizations that described their successful monitoring programs said that they did record their contracts as PBSA. In their opinion, the fact that an effective monitoring program exists satisfies the FAR requirement of having measurable performance standards for a performance-based service contract. In these cases, based on the Air Force's PBSA implementation plan, checking the PBSA data field for A&AS appears to be the right thing to do.

4. SUMMARY AND IMPLICATIONS

Outline

- **Nature of Services at the ALC and Product Center**
- **Application of Performance-Based Practices**
- **Summary and Implications**

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We conclude with a summary of our observations from our ALC and Product Center visits, suggestions for steps SAF/AQC can take to improve implementation of AFI 63-124 by clarifying how it applies to systems service contracts, and implications for our research.

Summary of Observations and Implications

- **It appears to us that many of the two Centers' service acquisition activities already satisfy the intent of the FAR definition of PBSC**
- **Clarification of how to apply AFI 63-124 to systems service contracts is needed**
 - **Universe of services**
 - **Name for the requirements document**
 - **Examples of measurable performance standards**

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To summarize, we came away from our interviews at the ALC and Product Center with the impression that many of their service contracts already incorporate the kinds of performance-based practices that the Air Force, DoD, and federal government are promoting, even if some of these practices do not match a strict interpretation of the definition of a performance-based service contract in FAR Part 37. However, it is clear that many of the people we interviewed on the systems sides of these two Centers do not believe their service contracts can be classified as such, so they are not checking the PBSA box on the DD350 form.

AFMC's ALCs and Product Centers account for most of the dollars the Air Force spends on services. SAF/AQC can improve implementation of AFI 63-124 and thus the Air Force's ability to meet the PBSA goal set by Dr. Gansler by clarifying how the FAR Part 37 definition of a performance-based service contract should be applied to service acquisition activities on the systems side of AFMC, recognizing the enormous diversity across activities and the implications of that diversity for performance evaluation and management. In particular,

- Clearer guidance is needed about which services should be purchased using the performance-based practices outlined in the FAR. For example, does AFI 63-124 apply to contracts written outside of the Service Contract Act?
- Confusion over SOW/SOO semantics needs to be eliminated. Is there a generic term that can be used to describe what the Air Force is looking for in a performance-based requirements document?
- Performance measurement and management activities that satisfy the requirement for measurable performance standards need to be better defined. Is the strict interpretation expressed during many of our interviews the correct one? Does the ability to determine whether the contractor is meeting the Air Force's needs, convey feedback about performance to the contractor, and address any problems satisfy the requirement for measurable performance standards?

For the last set of questions, the Air Force may want to expand the discussion of measurable performance standards found in its implementation plan to explicitly compare appropriate kinds of surveillance activities across the diverse types of services that it purchases. In addition, it may want to expand the "unique application" of PBSA to include other systems services that have characteristics similar to A&AS. Finally, the Air Force should consider including an explicit discussion of this issue in the next version of AFI 63-124.

Will We See Better Outcomes on the Systems Side of AFMC as a Result of PBSA?

- **Sole-source situations present challenges**
 - **Practices and incentives must be tailored to specific circumstances**
 - **Some types of incentives may be ineffective**
 - **Award term contracts**
 - **CPARS**
- **May be difficult to create baseline from historical data**
 - **Application of performance-based practices predates AFI 63-124**

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In our current research, we are developing tools or a methodology to assess how implementation of performance-based practices is affecting the Air Force, particularly how costs, quality of life, and mission capabilities have changed as a result of PBSA. During our interviews at the ALC and Product Center, we became aware of two issues that we believe may affect our ability to observe benefits within service acquisition activities on the systems side of AFMC.

First, as discussed earlier, many services are purchased within sole-source environments. Due to the lack of competition, the Air Force may have to tailor its use of performance-based practices in order to see the same magnitude of benefits that they would expect in a competitive environment. For example, personnel at one Center reported that they are encouraged to use award term contracts; however, several questioned whether award term contracts make sense within the sole-source environment. They noted that the sole-source firm knows it will be awarded the follow-on contract unless the Air Force stops using the relevant system. So they questioned why they should expect such a firm to expend resources to improve performance if a longer contract is the

only benefit. Similarly, for firms that predominantly do sole-source work, the threat of a poor CPARS rating may carry less weight than it would for a firm that operates in a competitive environment. However, other options such as award fees and deducts were raised as effective alternatives in these cases.

Second, it may be difficult to establish a baseline of contract performance before the implementation of performance-based practices. Those we interviewed on the systems side of the ALC and Product Center said that their motivation for using performance-based practices was the introduction of acquisition reform in the mid-1990s, which predates AFI 63-124. It is unclear whether the data are available to study the impact of this change in contracting practices during this period.

APPENDIX: WHAT IS A SERVICE?

What Is a Service?

- **General definition**
- **Definition for PBSA**

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In this appendix, we discuss the primary sources of information on the kinds of activities that should be considered services. We then examine current guidance on the set of services to which PBSA should be applied.

What Is a Service? Several Sources Address This Question

- **Service Contract Act (SCA) of 1965 (as amended)**
 - 41 USC, 351
- **Walsh-Healey Public Contracts Act**
 - 41 USC, 45-35
- **FAR Part 22, “Application of Labor Laws to Government Acquisitions”**
- **FAR Part 37, “Service Contracting”**
- **OMB Circular No. A-11, Section 83**

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At both the ALC and the Product Center we visited, we were asked how we define services. There are several important sources of information related to this question. The most important ones are listed on the chart above.

The Walsh-Healey Public Contracts Act “is intended to impose fair social employment standards on government contractors.” The Service Contract Act (SCA) applies to those contracts with the principal purpose of furnishing services. Both Acts require payment of minimum wages, specify penalties for noncompliance, and restrict employment of children and convicts. In addition, both use the Fair Labor Standards Act as a reference point.

FAR Part 22 describes how both Acts (as well as other labor laws) apply to government acquisitions, and provides detailed information for contracting officers on applicability, exemptions, and procedures to implement the requirements of the Acts.

FAR Part 37, which governs service contracting, discusses “areas in which service contracts are found.” An accompanying list includes many areas

that overlap lists in the SCA and FAR Part 22, but adds areas that are not discussed in the legislation.

The purpose of OMB Circular A-11, Section 83 is to categorize types of services by “object class” for budgeting purposes, since by law the President’s budget must present obligations by these object classes. This document was most discussed at the ALC, since it, along with additional guidance from AFMC, was important in distinguishing A&AS from other types of engineering services. This distinction is an important issue in budgeting at the ALC.

SCA and Walsh-Healey Apply to Different Contracts and Have Different Requirements

- **SCA applies to all contracts in excess of \$2,500, “the principal purpose of which is to furnish services through the use of service employees”**
- **Walsh-Healey applies to contracts exceeding \$10,000 that are for the manufacture or furnishing of materials**
- **Both require maintenance of employee records, but requirements differ**

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The SCA applies to contracts over \$2,500 related to the provision of services. The Walsh-Healey Act addresses contracts over \$10,000 related to the manufacture or furnishing of materials. Contracts in which personal services are to be performed in conjunction with furnishing materials or equipment are covered by the Walsh-Healey Act, but if the primary purpose is to provide services, the SCA applies.

Both the SCA and Walsh-Healey Act require the maintenance of certain records. Among these are:

1. Basic employee data to include name, address, social security number, gender, date of birth, occupation, and job classification. The Walsh-Healey Act requires that current work permits for minors be retained.
2. Compensation records to include amounts and dates of actual payment, period of service covered, daily and weekly hours, straight time and overtime hours pay, fringe benefits paid, and deductions and additions. The Walsh-Healey Act also requires the retention of data with respect to job-related injuries and illnesses,

specifically logs with dates and summaries, and details of accidents.

The extra requirements for the Walsh-Healey Act (records that must be maintained by the employer) may explain the comment we heard that “Walsh-Healey places the burden on the contractor; with the SCA, the government shares the burden.”

The Code of Federal Regulations Provides More Details on Services

- **Types of service contracts are “too numerous to permit an exhaustive listing”**
- **Code of Federal Regulations lists 55 types of services, from aerial spraying to warehousing**

According to 29 CFR 4.130, which implements the Service Contract Act,

The types of contracts, the principal purpose of which is to furnish services through the use of service employees, are too numerous and varied to permit an exhaustive listing. The following list is illustrative, however, of the types of services called for by such contracts that have been found to come within the coverage of the Act.

The Code then lists 55 types of services, ranging from aerial spraying to warehousing or storage.

FAR Part 22 Confuses Things a Little

- **Provides an unalphabetized list**
- **All items (about 24) are included in 29 CFR 4.130**
- **FAR notes that while SCA covers repair, *remanufacturing* (including overhaul, major modifications) comes under Walsh-Healey**

As noted earlier, FAR Part 22 implements the SCA and the Walsh-Healey Act for government acquisitions. Unfortunately, it helps confuse the issue of what constitutes a service. FAR Part 22.1003-5 provides a list of types of services “that have been found to be covered by” the SCA. Although it notes that the list is not definitive or exclusive, it is presented as an unalphabetized list in a way that makes it difficult to quickly compare with the list in the CFR. All the items in the list, however, are included in the CFR list, and there are no new services listed.

This regulation also addresses the distinction between repair, which is explicitly listed in the CFR as an example of a service covered by the SCA, and “remanufacturing.” Part 22.1003-6 is a long section that provides detailed criteria to determine when “remanufacturing” is to be deemed “manufacturing” instead of “repair.” In general, “[c]ontracts principally for remanufacturing of equipment which is so extensive as to be equivalent to manufacturing” are subject to the Walsh-Healey Act instead of the SCA; the regulation devotes several paragraphs to detailed criteria that must be used to determine when this is the case.

For example, in order for a “major modification” to be considered remanufacturing, the following criteria must be met: the item must be completely or substantially torn down; outmoded parts must be replaced; the item or equipment is rebuilt or reassembled; the contract work results in the furnishing of a substantially modified item in a usable and serviceable condition; the work is performed in a facility owned and operated by the contractor.

This distinction was important for some of those we talked to at the ALC.

FAR Part 37 Confuses Things a Little More

- **“‘Service contract’ means a contract that directly engages the time and effort of a contractor whose primary purpose is to perform an identifiable task rather than to furnish an end item of supply.”**
- **Provides a list of several “areas in which service contracts are found”**
- **Includes several services not found in SCA**

FAR Part 37, which governs service contracts, confuses the issue even more. It provides a concise definition of what a service contract is (one in which “the primary task of a contractor is to perform an identifiable task rather than to furnish an end item of supply”) and then lists “areas” in which service contracts are found. This list covers many services that are listed in the CFR related to the Service Contract Act, but also includes several services that are not explicitly mentioned in the CFR or in FAR Part 22. Among these are advisory and assistance services (A&AS), architect-engineer services, communications services, research and development, and transportation services.

A Separate Question: To What Services Does PBSA Apply?

- **FAR Part 37 excludes architect-engineer services, construction, utility services, and some others**
- **AFI 63-124 and the Air Force PBSA Implementation Plan exclude other services**

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There is lots of information about what constitutes a service, but *when* performance-based practices must be applied to a service contract is a separate question.

FAR Part 37 says that agencies will use performance-based contracting methods to the maximum extent practicable for the acquisition of services “including those acquired under supply contracts.” The implication is that performance-based contracting should be used for all the service “areas” listed in FAR Part 37.101. However, four types of services are exempt from performance-based practices: (1) architect-engineer services acquired in accordance with 40 USC 541-544 as amended;²⁹ (2) construction (which is covered in FAR Part 36); (3) utility services; and (4) services that are incidental to supply purchases.

²⁹The relevant regulation is FAR Part 36.601-1: “The Government shall publicly announce all requirements for architect-engineer services and negotiate contracts for these services based on the demonstrated competence and qualifications of prospective contractors to perform the services at fair and reasonable prices. (See Pub.L.92-582, as amended; 40 U.S.C. 541-544.)” However, this part of the regulation doesn’t make clear why these architect-engineer services are exempt.

The current version of AFI 63-124 applies to “all service contracts over \$100,000,” but the instruction also provides a list of services that are exempt from PBSA. The list of exemptions includes, perhaps redundantly, architect-engineer services, but also includes other exemptions not shown in FAR Part 37.

The Air Force’s PBSA Implementation Plan (developed in response to Under Secretary of Defense Gansler’s requirement that 50 percent of all services be acquired in a performance-based manner by 2005) provides a “universe of services” to which PBSA should be applied. This list contains some, but not all, of the services that are in FAR Part 37, but also adds base operations and support services, medical services, and undefined “other” services. The plan (again redundantly) excludes architect-engineer services, but unlike the FAR, also excludes research and development acquisition.

Summary

- **Lots of information on what constitutes a service**
- **Good information on what services are excluded from PBSA**
- **There is still some confusion in the field**
 - **ALC wants repair services exempt from PBSA**
 - **Product Center: “an aversion to calling the process of design, development, and production a ‘service’”**
 - **Product Center: “R&D is not under SCA”**
 - **Product Center: logistics personnel don’t have experience with SCA and fear it**
- **Some seem to think PBSA should only apply to services governed by the SCA**

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To summarize the information in this appendix, we have seen that there are two separate questions related to the application of PBSA to the acquisition of services:

- What constitutes a service?
- To which services does PBSA apply?

The information about what constitutes a service is reasonably clear in the CFR and the FARs, although FAR Part 37 muddies the water a bit. The exemptions listed in FAR Part 37, AFI 63-124, and the PBSA Implementation Plan are also clear, though the reasons for differences in the lists are not. However, our discussions at the ALC and the Product Center raised some points about these two issues that need clarification.

For example, we heard at the ALC that some people wanted their repair services to be exempt from PBSA “because repair services are under Walsh-Healey.” This remark, which implies the opinion that ALC repair services constitute “remanufacturing,” gave us the impression that the ALC felt the application of PBSA to “services” should only be to services that are covered by the Service Contract Act. At the Product Center, a

senior executive noted that there was an “aversion” to calling the process of design, development, and production of specialized products a “service.” Since we had heard other comments about the distinction between “professional” and “nonprofessional” services, this remark may also have been an indication of an attitude that “services” are only those areas covered by the SCA, and that these were the types of services to which PBSA should be applied. The last two comments shown in the chart relate similar attitudes.

Perhaps these comments reflect an understanding at the ALC and the Product Center that PBSA is generally easier to implement in *operational* services (e.g., grounds maintenance). These are services for which performance thresholds are easily defined and services accomplished by people with generally lower skill levels than those who perform other services at the ALCs and Product Centers. These lower-skilled people are exactly those whom the SCA was designed to protect.

REFERENCES

- AFMC Advisory and Assistance (A&AS) Guide*, 2001.
- Ausink, John, Frank Camm, and Charles Cannon, *Performance-Based Contracting in the Air Force: A Report on Experiences in the Field*, RAND, DB-342-AF, 2001.
- Executive Office of the President, Office of Management and Budget (OMB), OMB Circular A-11, *Preparation and Submission of Budget Estimates*, Section 83, "Object Classification," Washington: Government Printing Office, 2001. www.whitehouse.gov/omb/circulars/a11.ootoc
- Federal Acquisition Regulation (FAR) Part 16, *Types of Contracts*.
- Federal Acquisition Regulation (FAR) Part 22, *Application of Labor Laws to Government Acquisitions*.
- Federal Acquisition Regulation (FAR) Part 36, *Construction and Architect-Engineer Contracts*.
- Federal Acquisition Regulation (FAR) Part 37, *Service Contracting*.
- Federal Procurement Data System (FPDS), *FPDS Reporting Manual Individual Contract Action Report (ICAR) (SF 279)*, Section C, FY 2002.
- Gansler, Jack S., Under Secretary of Defense (Acquisition and Technology), *Memorandum on Performance-Based Services Acquisition (PBSA)*, April 5, 2000.
- Office of the Inspector General, Department of Defense, *Contracts for Professional, Administrative, and Management Support Services*, Report No. D-2000-100, March 10, 2000.
- Service Contract Act of 1965*, Pub L. 89-286, October 22, 1965, 79 Stat. 1034 (Title 41, Section 351 et seq.).
- U.S. Air Force, Air Force Instruction (AFI) 63-124, *Performance-Based Service Contracts (PBSC)*, April 1, 1999.
- U.S. Air Force, *Performance-Based Services Acquisition (PBSA) Implementation Plan*, June 2000.
- The Walsh-Healey Public Contracts Act*, 41 U.S.C. 35-45, ch. 881, 49 Stat. 2036, 1986.