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Report to Congressional Committees

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DEFENSE LOGISTICS

Air Force Report on Contractor Support Is Narrowly Focused

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Contents

Abbreviations

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Congressional Committees

For many years, the Air Force has relied on contractors for most of the required logistics support for aircraft that are similar to commercially available aircraft.[1] Examples of aircraft using this kind of support include the C-9 aeromedical evacuation aircraft and the KC-10 tanker/airlift aircraft. Also, some high-cost, classified systems that are produced in small quantities, such as the U-2 reconnaissance aircraft, use this type of support arrangement. Using such an arrangement for systems similar to those used in the private sector can result in savings because it is possible to share common parts supply and other support structure costs, such as maintenance facilities and personnel, with other public and private sector users. Since the mid-1990s, the Department of Defense (DOD) and the services have initiated actions to expand the use of such contractor logistics support to other military programs. The Air Force is the service with the most extensive use of this logistics support strategy.

Section 344 of the National Defense Authorization Act for Fiscal Year 2000 required the Secretary of the Air Force to provide a report to the Congress by February 1, 2000, identifying all Air Force programs that are currently using or planning to use a program the Air Force refers to as Total System Performance Responsibility or similar contractor support programs.[2] For these contractor-supported programs, the report was to include an evaluation of how the programs support warfighting readiness and how the programs complement the support provided by the government's logistics depots and affect core government logistics management skills. The evaluation was also to address the process and criteria used by the Air

[1]Contractor logistics support includes such functions as determining requirements for spare and repair parts, engineering services, and maintenance and is usually provided on a long-term basis.

[2] Though there is not an established definition, the term "Total System Performance Responsibility " has generally been used to describe forms of long-term contractor logistics support under which a contractor, rather than the government, is responsible for the integration of logistics support functions such as providing engineering support, identifying requirements for spare and repair parts, and performing maintenance on weapon systems. Section 344 does not contain either a definition or a description of Total System Performance Responsibility.

Force to determine whether government employees or the private sector can perform logistics management functions more cost-effectively.

By a letter dated February 11, 2000, the Air Force submitted the Total System Performance Responsibility report to the Congress. The report is 3 pages long, with a 2-page attachment providing a definition of Total System Performance Responsibility and a listing of eight programs—four current programs, two planned programs and two similar programs. The body of the report listed the mandated requirements and gave a one-paragraph discussion on two issues and a five-paragraph discussion on the third issue.

Section 344 also required us to evaluate the Air Force's report and report to the Congress. Accordingly, this report addresses the extent to which the Air Force's report provides a comprehensive treatment of issues required by section 344 and gives a complete picture concerning the Air Force's reliance on Total System Performance Responsibility and similar programs. Specifically, we address the extent to which the report (1) identified programs or systems[3] using or planning to use contractor support arrangements, (2) supported the Air Force's view that the contractor support provides equal or superior warfighting capabilities; (3) identified the impact of such support arrangements on the government's logistics depots and core government logistics management skills; and (4) identified processes and criteria followed in determining whether government employees or the private sector can perform logistics management functions more cost-effectively.

Results in Brief

Overall, the Air Force's report, through use of a narrow definition of terms, does not provide as complete a picture as it might have concerning the Air Force's reliance on Total System Performance Responsibility and similar programs. Further, the report provides only limited responses to specific questions contained in section 344. Specifically:

[3] In responding to the section 344 requirement to report on programs, the Air Force was system specific in its reporting. Accordingly, we also provide information on a system basis.

- Although the Air Force was required to identify all of its programs that are using or planning to use such support arrangements, the definitions used resulted in the identification of eight programs or systems as using or planning to use such support arrangements.[4] Given the lack of definitions for Total System Performance Responsibility and similar programs in section 344, we do not question the legal propriety of the definitions the Air Force used in its report. However, a more complete picture of the Air Force's use of multifunction, long-term contractor support would include many other systems and subsystems, including those using interim contractor support arrangements involving multiple logistics functions that usually extend for long periods of time. The Air Force could have included at least 75 systems that are using or planning to use such support arrangements.[5]
- Although the Air Force was required to report on how these contractor support arrangements are expected to support readiness and warfighting capability, it provided a limited analysis for its conclusion. While the report generally links the use of such support arrangements to equal or better weapon system availability and readiness, the impact of such support arrangements on readiness is uncertain because other factors that affect these areas are not addressed. For example, while the aircraft systems with such support arrangements have higher mission capable rates compared to other systems, they also have advantages that have contributed to this success. Contributing factors are that aircraft receiving this contractor support are relatively new and have a small fleet size, which contribute to fewer maintenance problems and a less complex supply chain.
- While the report was expected to address the impact of these contractor support arrangements on the government's logistics depots and on core government logistics management skills, the report provided only cursory comments on the process the Air Force used to make workload allocation decisions for depot maintenance. It did not discuss the impact of contractor support on government depot maintenance capabilities or address other logistics management skills that may need to be maintained in-house. Thus, the report did not provide a clear picture of

[4] The report also acknowledges that the Air Force currently manages 27 major weapon systems and many other simulator or equipment items through contractor logistics support but does not cite them specifically or include them in its analysis.

[5] As used in this report, the term “system” refers to systems such as aircraft, missiles, radar, and ground communications systems and to subsystems such as engines and avionics.

the impact of contractor support on core government logistics management skills, including that required for the military depots.

- In responding to the requirement to identify the processes and criteria followed in determining whether government employees or the private sector can perform logistics management functions more cost-effectively, the report states that a business case analysis[6] or a cost comparison is performed to determine the best value solution. However, our work shows that this process is not always followed. For example, the Air Force decided on a future support strategy for the Joint Surveillance Target Attack Radar System without performing a business case analysis or a cost comparison. Additionally, when a business case analysis is performed, the analysis is sometimes limited.

Background

The Air Force has for many years used the term contractor logistics support to describe its strategy of using contractors to provide long-term logistics support in such functional areas as supply management, engineering, and depot maintenance. The term "interim contractor support" is used when the support capability is expected to be transitioned eventually from the contractor to the government. For some programs, such as missile or electronic systems, warranties have been included in contracts with equipment manufacturers that, in essence, may result in long-term contractor support.[7] Terms such as flexible sustainment and Total System Performance Responsibility have been used more recently for long-term contractor support arrangements that have given contractors greater responsibilities and control for support of military systems and equipment. While no formal definition of Total System Performance Responsibility has been established, Air Force officials state generally that the difference between Total System Performance Responsibility and contractor logistics support is that for the former category, the contractor, rather than the government, is the integrator of all the support functions.

[6] A business case analysis is a review or an assessment of business-related issues regarding a specific action or recommended change. This process involves the identification of time, resources, management, cost, timing and quantification of savings and other tangible results.

[7] Under a warranty, a contractor provides whatever support activities are necessary to assure that the system is available whenever needed and the cost of this service is generally included in the contract price. Some of the more recent warranties were for as much as 10 to 20 years.

Under other forms of contractor logistics support, the government is the integrator of the support functions.

Regardless of definitions, the extent of contracting for logistics support has often been a source of concern and debate between DOD and the Congress and has led to various legislative provisions affecting DOD's ability to contract with the private sector for logistics support services. One such provision is 10 U.S.C. 2466, which provides that not more than 50 percent of the funds made available in a fiscal year to a military department or a defense agency for depot-level maintenance and repair can be used to contract for private sector performance. Another provision is 10 U.S.C. 2464, which provides for core logistics capability that is to be identified by the Secretary of Defense and to be owned and operated by the government.[8]

We have issued reports in recent years addressing the allocation of depot maintenance work between the public and private sectors. In March 2000, we provided testimony before the Subcommittee on Readiness and Management Support, Senate Committee on Armed Services, on the Secretary of the Air Force's waiver of the 50-percent limitation on the use of contractor maintenance.[9] With the percentage of such private sector support to the Air Force growing closer to the 50-percent ceiling in recent years, Members of Congress have expressed concern about increased reliance on contractor support. A list of related products is included at the end of this letter.

[8] Core capability is the equipment, personnel, and services needed to repair or maintain weapon systems or other military equipment to ensure an effective and timely response to a mobilization, national defense contingencies or other emergencies.

[9] *Depot Maintenance: Air Force Faces Challenges in Managing to 50-50 Ceiling* (GAO/T-NSIAD-00-112, Mar. 3, 2000).

Report Presents Limited View of the Use of Total System Performance Responsibility or Similar Programs

While it was required to identify all Air Force programs that are currently using or planning to use Total System Performance Responsibility or similar programs, the Air Force used a narrow definition of terms. Given the absence of definitions in the legislation, the Air Force has broad discretion in defining terms for reporting purposes. Nevertheless, our analysis shows that the Air Force is using or planning to use long-term multifunction contractor support arrangements for many other systems in addition to the eight identified in the report.

Air Force Criteria

Section 344 mandated that the Air Force report to the Congress, identifying all programs using or planning to use Total System Performance Responsibility or similar programs. The report focuses only on eight weapon system platforms. For purposes of its report, the Air Force defined Total System Performance Responsibility as "a product support strategy for major weapon system platforms whereby one or a limited number of contractors are responsible for system modifications, integration tasks and sustainment tasks to meet warfighter requirements.[10] The government remains accountable for program execution." The Air Force defined "similar programs" as those programs where contractors perform some or all of the logistics functions in support of major weapon system platforms.

The report identifies four systems that currently use Total System Performance Responsibility—the B-2 bomber, the F-117 fighter, the C-17 cargo aircraft, and the Intercontinental Ballistic Missile. The report also lists two systems planning to use Total System Performance Responsibility—the U-2 reconnaissance aircraft and the Joint Surveillance and Target Attack System. It also identifies two systems using similar support programs—the KC-10 tanker/airlift and the E-4 command and control aircraft. While the report also states there are 27 weapon systems and many other simulator or equipment items using contractor logistics support, only 2 of these are major weapon system platforms—the KC-10 tanker aircraft and the E-4 command and control aircraft. Thus, only those two were reported as similar programs.

Given the lack of definitions for Total System Performance Responsibility and similar programs in section 344, we do not question the legal propriety

[10] While the report does not define the term "platform," Air Force officials told us that the term refers to systems that deliver a weapon such as bomber and fighter aircraft.

of the definitions the Air Force used in its report. However, a more complete picture of the Air Force's use of multifunction, long-term contractor support would include many other systems and subsystems, including those using interim contractor support arrangements involving multiple logistics functions that usually extend for long periods of time. It would also include contractor warranties, which involve multiple functions provided under long-term contracts.[11]

In discussions with Air Force program managers, we identified 127 systems and subsystems that managers are currently managing and obtained information on the type of support arrangements used or being planned. Using the more complete set of factors noted above, we identified 67 additional systems—for a total of 75 that are using or planning to use various forms of multifunction, long-term contractor support. Of those remaining, 39 systems are using other logistics support strategies—10 using government support and 29 using or planning to use a combination of public and private sector support; the type of support to be used for 13 systems had not yet been determined at the time of our review. These are summarized in appendix I.

A breakdown of the 127 systems included in our analysis is shown in table 1.

[11] Interim contractor support or warranties for individual components were not part of this analysis unless they were included in systems that were described as having mixed support strategies.

Table 1: GAO Analysis of Systems Using or Planning to Use Various Types of Support Arrangements as of March 2000

Type program	Type of support in use	Type of support planned	Total
Multifunctional long-term contractor support			
Total System Performance Responsibility	4	5	
Contractor logistics support	33	13	
Contractor warranty	7	11	
Interim contractor support	0	2	
Subtotal	**44**	**31**	**75**
Other			
Government supported	10	0	
Mixed public/private	26	3	
Not yet determined	None	13	
Subtotal	**36**	**16**	**52**
Total	**80**	**47**	**127**

Source: GAO analysis of Air Force data.

An example of a system that could have been included in the Air Force's report is the Space Based Infrared System. This system shows that programs other than weapon system platforms may be large and costly, and their inclusion could be important to providing a more complete picture of planned use of long-term multifunctional contractor support. The system is a replacement for the Defense Support Program, which provides early detection and warning of missile and space launches. It has an expected acquisition cost of $1.5 billion, and it is to be supported under a contractor support arrangement. The Air Force plans for a contractor to provide most support activities —including provisioning, spare parts management, and depot maintenance. This new system is expected to replace the old system on an incremental basis beginning in fiscal year 2000, and the government infrastructure that supports the old system will be phased out.

Report Provides Insufficient Evidence That Contractor Support Is Equal to or Better Than Other Support Arrangements

Although the Air Force was required to report on how Total System Performance Responsibility and similar contractor support programs are expected to support readiness and warfighting capability, the Air Force provided limited support to the conclusion it reached. While the report generally links the use of this type of contractor support arrangement to increased weapon system availability and readiness, it does not provide a sufficient basis for reaching that conclusion.

The report states that in fiscal year 1999 mission capable rates[12] were higher for aircraft systems with Total System Performance Responsibility support (F-117, KC-10, and C-17) than for other systems not supported by this type of support strategy. The report also states that, while direct comparisons are difficult, in general, logistics support provided by contractors had been equal to or better than support provided by government sources such as government depots. However, based on the report, it is not possible to determine whether contractor-provided support is equal or superior.

Several factors that were not addressed in the report can affect mission capable rates, leaving unclear to what extent contractor-provided logistics support was the major source of improved logistics support. For example, while the aircraft systems with contractor support arrangements have higher mission capable rates compared to the other systems, they also have advantages that may have contributed to this success. One key factor is that aircraft receiving contractor support are relatively new and have smaller fleet sizes, which can result in fewer maintenance problems and a less complex supply chain. Conversely, the traditionally supported aircraft noted by the Air Force (F-15, F-16, KC-135, C-5, and C-141) tend to be older and have larger fleet size, leading to more maintenance needs and a more complex supply chain. For example, the average number of deployed aircraft for the systems identified in the Air Force report as using Total System Performance Responsibility was 59, while the average size of the five reported aircraft that were traditionally supported was 586. The contractor-supported aircraft were deployed during the 1980s and 1990s compared to deployment dates in the 1960s and 1970s for the traditionally supported aircraft.

[12] Mission capable rates represent the percentage of time that an aircraft is partially or fully mission capable.

Funding support for readiness is also a critical element that can influence mission capable rates. For example, the Air Force has to prioritize requirements and determine at what level various requirements can be funded. According to Air Force officials at operating commands, funding that is designated for and restricted by specific programs, such as Total System Performance Responsibility, becomes obligations that are often characterized as "must-pay" bills and they have funding priority over other programs. While this funding commitment helps the programs that have contractor support, they can create greater funding pressures on other programs that sometimes have to absorb the impact of unanticipated requirements that emerge during the year. For example, in November 1999, Air Force Space Command officials who are responsible for funding certain requirements for the Intercontinental Ballistic Missile total support contract expressed concerns that contract cost growth was reducing the Command's operation and support flexibility in other areas.

Implications for Logistics Depots and Military Core Logistics Management Skills Are Not Fully Discussed

While the Air Force's report was expected to address the impact of Total System Performance Responsibility and similar programs on logistics depots and core government logistics management skills,[13] the report provided only cursory comments on the use of their decision process to make workload allocation decisions for depot maintenance. It does not discuss the impact of contractor support on government depot maintenance capabilities, as required by section 344. Additionally, it does not address other logistics management skills that may need to be maintained in-house. Thus, the report does not provide a clear picture of the impact of long-term contractor logistics support on core government logistics management skills, including the military depots.

Although the report indicates that the Air Force routinely evaluates the impact on core capabilities prior to a decision to contract out depot maintenance, this is not always done. Available information indicates that the Air Force has contracted out workloads in the past without reevaluating the impact on core. For example:

[13] As used in this report, the term "core logistics management skills" includes management and technical capabilities necessary to fulfill the agencies' logistics mission responsibilities. It goes beyond the traditional use of the term "core" which, under 10 U.S.C. 2464, generally relates to depot maintenance functions.

- In 1996, the Air Force privatized in place aircraft and missile inertial guidance and navigation systems work previously performed at the Aerospace Guidance and Metrology Center in Newark, Ohio. Prior to the closure of this depot, the workload in this facility had been identified as 100 percent core. About 900,000 hours of depot maintenance workload was involved.
- In 1997, the Air Force contracted out support for a new radar system after having earlier determined that this was core work.
- In 1998, the Air Force contracted for total contractor support of the F100-229 engine, although that work had been previously identified as core work.

According to key officials at the Air Force Materiel Command, the maintenance depots are not getting work involving new, advanced technology weapon systems that they would need to have if they are to establish and maintain core capabilities in these areas. This view was discussed in a February 9, 2000, memorandum from the Ogden Air Logistics Center to Headquarters, Air Force Materiel Command that stated:

"Infusion of new technology workloads from new weapon systems is essential to maintain core. Therefore the future of the [air logistics center] is contingent upon acquiring workloads in each technical repair center that will continue to provide a viable organic source of repair for the using commands. If an [air logistics center] is determined core or best value in a particular technology, then any new weapon system acquired that has the associated technology should have the respective core allocation from day one of the sustainment life cycle. The core determination is weighted heavily towards older high surge workloads. Depots are provided new workloads often only after the original equipment manufacturer loses interest."

In addition to concerns about depot maintenance core capabilities, various logistics center personnel have also raised concerns about the need to retain in-house technical and management capabilities in related functional areas. These could include such functions as supply management and engineering. As responsibilities for integration and support of a system are consolidated with individual contractors, the government may no longer have a requirement to perform certain of these functions. However, since the Air Force does not have a formal process for evaluating core requirements in this area, it is not clear whether the Air Force has evaluated these functional areas of logistics to determine how much, if any, capability or expertise should nonetheless be retained within the government to assure continued performance. The Air Force is currently considering contracting out many of these positions.

Reported Process and Criteria for Making Contractor Support Decisions Are Not Always Being Followed

In responding to the requirement to identify the processes and criteria followed in making contractor support decisions, the Air Force states that it bases these decisions on a business case analysis; our work, however, shows that this process is not always being followed. Additionally, when a business case analysis is performed, the analysis is often limited.

The Air Force's report indicates that, to determine the best value solution for the Air Force's logistics support needs, a business case analysis or a cost comparison is performed, which includes consideration of total system costs and performance factors. It also indicates that the extent and timing of the assessments may vary depending on individual program circumstances and, if applicable, Office of Management and Budget Circular A-76 cost comparison procedures are used to support portions of these decisions. However, our prior[14] and ongoing reviews of the processes used by the Air Force Materiel Command to make its determinations concerning contractor support arrangements showed that they were often implemented or planned as long-range sole-source relationships with prime contractors without performing a detailed business case analysis. In some cases, where such analyses were done, the analysis was limited. Further, we found that the Air Force had often concluded that A-76 procedures did not apply.

For example, without a supporting analysis, in November 1999 the Air Force approved acquisition plans that call for a transfer of the responsibility for system support for the Joint Surveillance Target Attack Radar System from the government to a contractor. The Air Force expects to reduce support costs and improve system availability by awarding a multimillion dollar, 5-year, sole-source contract in July 2000. The contractor is to assume support responsibility that includes the air vehicle, ground support systems, operational and maintenance trainers, supply chain and spares management, systems engineering, and technical data. According to program office officials, an A-76 cost comparison is not applicable to any part of the initiative because this future support arrangement is viewed as reengineering the function rather than simply transferring work to

[14] *Defense Depot Maintenance: Contracting Approaches Should Address Workload Characteristics* (GAO/NSIAD-98-130, June 15, 1998).

the private sector. They also pointed out that a cost model will be developed and that source-of-repair assignment decisions[15] will be made as necessary. However, as of March 2000, the program office had not performed a cost-benefit analysis of this future support arrangement. In commenting on our draft report, Air Force officials stated that the program office intends to do a business case analysis when cost data becomes available from the contractor.

Our ongoing review of contracting out in the Air Force Materiel Command also shows that in those instances where cost comparisons or business case analyses were completed or are being planned, the analyses often were, or are expected to be, limited to (1) a comparison of current and projected program operating costs using existing strategy to contractors' cost estimates without consideration of whether the Air Force-managed program could be improved or (2) only the depot maintenance activity. For example, in December 1997, the program office awarded a competitive, 15-year contract for support for the Intercontinental Ballistic Missile System. The contract provides that the contractor is responsible for system support integration and for system support, major modifications, and subcontractor management. A program office analysis reported that the total support contract would save $1.2 billion over the contract period—the difference between the estimated costs of the current strategy and the proposed contractor costs. However, we found that the estimated savings could be inflated because the program office (1) did not identify whether internal improvements to current performance were feasible to reduce program costs in the out years and (2) made the assumption that actual program funding in future years will be the same as the funding requested (which generally proves not to be the case).

Agency Comments

We requested comments on a draft copy of this report from the Department of Defense. On April 13, 2000, the Assistant Deputy Under Secretary of Defense (Maintenance Policy, Programs, and Resources) and the Deputy Division Chief for Maintenance Management, in the Office of the Deputy Chief of Staff Installations and Logistics, Headquarters, U.S. Air Force, and representatives from other Air Force Headquarters offices, including Acquisition and General Counsel, provided oral comments. They generally

[15] Source-of-repair analysis is the process the Air Force uses to determine whether a government activity or a contractor will provide depot maintenance. The process results in an assignment decision to a government depot or to the private sector.

agreed with the facts presented but expressed some concerns about our observations in these areas: (1) the scope of systems included in our definition of Total System Performance Responsibility and similar programs, (2) our discussion of core logistics management skills, and (3) a statement that the depots are not getting new advanced technologies. They also made several technical comments for clarification. Where appropriate, the body of the report has been changed to reflect these comments.

Air Force officials stated that our definition of Total Systems Performance Responsibility and similar programs went broader than they believe the Congress intended. They also said they believe that warranties and interim contractor support should not be considered as Total Systems Performance Responsibility systems because the contractor does not function as the integrator as it does for Total Systems Performance Responsibility systems. We do not question the legal propriety of the definitions of Total Systems Performance Responsibility and similar programs used in the Air Force report. However, since the Air Force's definition, which limited the report to eight major weapon system platforms, included systems using contractor logistics support—a long-term, multifunction contractor support strategy where the government, rather than the contractor, is the integrator—we considered it appropriate to reflect other systems that also use this long-term multifunction contract strategy. Regarding the question of whether warranty and interim contractor support programs should have been identified as similar programs, since they also provide long-term, multifunction contractor support, we also consider it appropriate to identify systems using these support strategies.

Air Force officials also disagreed with our observation that the Air Force does not have a process for determining core logistics management skills. They said it has a process for evaluating depot maintenance core (the equipment, personnel, and services needed to repair or maintain weapon systems to ensure an effective and timely response to a mobilization or other national emergency), and in their view, core logistics management skills are those skills necessary to manage core depot maintenance workloads. Our draft report distinguished between core logistics management skills, which includes various logistics management skills necessary to fulfill the Department's logistics mission responsibilities, and those core skills that only represent one logistics function—depot maintenance. However, we added a definition of core logistics skills to further clarify the distinction made in our report.

Finally, Air Force officials disagreed with a statement in our report that the maintenance depots are not getting work that involves incorporating new advanced technologies on new weapon systems and components—work that is needed to establish core capability for these systems. They said that the Air Force considers the technological needs of its depots through the depot maintenance core assessment methodology, which includes an analysis of technology requirements for depots. However, according to information provided us by officials at Air Force logistics centers, the Air Force's current core assessments are limited to evaluating the technological needs only for the current year's requirements, not longer-term requirements to support new system technologies. Additionally, the core analysis process tends to drive older technology systems into the depots, rather than newer ones, since the private sector is often no longer interested in the repair of older technology systems and components. Thus, the core process would not generally provide for the infusion of technology capabilities needed to support newer systems. For example, as the C-141 cargo aircraft is being phased out of the inventory, the Air Force's core methodology does not provide for acquiring the capabilities for technologies needed to support the replacement aircraft, the C-17, as it is phasing into the inventory.

Scope and Methodology

In analyzing the Air Force's report, we relied heavily upon our prior work and our ongoing work regarding the Department of Defense's and the services' contracting out plans. We interviewed officials responsible for preparing the Air Force's report but did not attempt to verify the data provided in the Air Force's report.

To address the extent to which the report identified programs or systems using or planning to use Total System Performance Responsibility and similar programs, we used information being compiled from an ongoing assignment concerning contracting out plans for the Air Force Materiel Command. We visited system program offices at the Aeronautical Systems Center, Wright-Patterson Air Force Base, Ohio; the Air Armament Center, Elgin Air Force Base, Florida; the Electronic Systems Center, Hanscom Air Force Base, Massachusetts; and the Space and Missile Systems Center, Los Angeles Air Force Base, California. We also visited program offices at the Ogden Air Logistics Center, Hill Air Force Base, Utah; the Warner Robins Air Logistics Center, Robins Air Force Base, Georgia; the Sacramento Air Logistics Center, McClellan Air Force Base, California; the Oklahoma City Air Logistics Center, Tinker Air Force Base, Oklahoma; and the San Antonio Air Logistics Center, Kelly Air Force Base, Texas.

At each program office, we examined proposals, acquisition strategy plans, and related Air Force evaluations to identify the current support strategy or planned strategy for the systems and subsystems managed by the program office. We also discussed the use or planned use of Total System Performance Responsibility and similar contractor support strategies with officials responsible for program management.

In evaluating whether the Air Force supported its view that contractor support provides equal or superior warfighting capabilities, we examined the trend in mission capable rates for the eight systems for the 5-year period, fiscal years 1995 through 1999. We also obtained from the program offices information on factors that contributed to high or low rates.

To determine whether the Air Force's report adequately addressed the impact of contract support arrangements on the government's logistics depots and core government logistics management skills, we examined the statutory requirements regarding contracting for depot maintenance and for the retention of an in-house core logistics capability. We identified prior examples where the Air Force had determined that workload previously determined to be core was subsequently contracted out. We also discussed the impact of contractor logistics support with officials at Air Force air logistics centers and system program offices.

To determine whether the Air Force report provided a comprehensive treatment of the process and criteria followed in determining whether government or the private sector can perform logistics management functions more cost-effectively, we reviewed applicable Air Force regulations and instructions regarding the requirements for analyzing cost-effectiveness of support strategies. We also examined cost analyses done by the system program offices to identify the factors and elements that were considered in such analyses. Finally, we discussed cost-effectiveness of support strategies in use or planned with officials in the system program offices.

We conducted our review from February through March 2000 in accordance with generally accepted government audit standards.

We are sending copies of this report to the Honorable William S. Cohen, Secretary of Defense; the Honorable F. Whitten Peters, Secretary of the Air Force, and the Honorable Jacob J. Lew, Director of Office of Management

and Budget; and to interested congressional committees. We will also make copies available to others on request.

Please contact me or Julia Denman at (202) 512-8412, if you or your staff have any questions concerning this report. Key contributors to this assignment were Bobby Worrell, Bonnie Carter, Fredrick Naas, Kimberly Seay, and John Brosnan.

David R. Warren, Director
Defense Management Issues

List of Congressional Committees

The Honorable John Warner
Chairman
The Honorable Carl Levin
Ranking Minority Member
Committee on Armed Services
United States Senate

The Honorable Ted Stevens
Chairman
The Honorable Daniel Inouye
Ranking Minority Member
Subcommittee on Defense
Committee on Appropriations
United States Senate

The Honorable Floyd Spence
Chairman
The Honorable Ike Skelton
Ranking Minority Member
Committee on Armed Services
House of Representatives

The Honorable Jerry Lewis
Chairman
The Honorable John Murtha
Ranking Minority Member
Subcommittee on Defense
Committee on Appropriations
House of Representatives

Our Analysis of Support Strategies for Air Force Materiel Command Systems and Subsystems as of March 2000

System	Type of support strategy in use	Planned support strategy	Estimated cost information
Missiles, Munitions & Support Equipment			
• (1) Joint Direct Attack Munition (JDAM)		Contractor warranty	Life-cycle acquisition cost estimate is $4 billion based on fiscal year 1996 President's budget.
• (2) Joint Air-to-Surface Standoff Attack Munition (JASSM)		Contractor warranty with total system performance responsibility	Life-cycle acquisition cost estimate is $2.1 billion based on fiscal years 1996-1999 actual budget authority.
• (3) Joint Standoff Weapon (JSOW)		Contractor warranty	Life-cycle acquisition cost estimate is $1.7 billion based on fiscal year 1999 President's budget.
• (4) BRU-57 Smart Rack		Contractor warranty with total system performance responsibility	Life-cycle acquisition cost estimate is $35.3 million for production
• (5) Sensor Fuzed Weapon (SFW)		Contractor warranty	Life-cycle acquisition cost estimate is $2 .0 billion based on fiscal year 2000 President's budget.
• (6) Wind Corrected Munitions Dispenser (WCMD)		Contractor warranty	Estimated acquisition cost for fiscal years 1995-2006 is $652.2 million based on fiscal year 1999 President's budget.
• (7) Advanced Medium Range Air to Air Missile (AMRAAM)	Contractor warranty with total system performance responsibility		Operation and maintenance costs for fiscal year 1999 totaled $760,370.
• (8) Upgrade to Maverick Air-to-Ground Missile (AGM-65H/K)	Contractor warranty		Operation and maintenance costs for fiscal year 1999 totaled $12,301,840.
• (9) Air-to-Ground Missile-130 Surface, Attack Guided Munitions (AGM-130)	Contractor warranty		Operation and maintenance costs for fiscal year 1999 totaled $3,178,434.
• (10) Guided Bomb (GBU-15)	Government/contractor logistics support		Included in AGM-130 above.
• (11) Air-to-Ground Missile (AGM-142) HAVE NAP	Contractor warranty		Operation and maintenance costs for fiscal year 1999 totaled $4,736,092.
• (12) Inter-Continental Ballistic Missile (ICBM) Program	Contractor total system performance responsibility		Operation and maintenance costs for fiscal year 1999 totaled $314,155,875.
• (13) Advanced Cruise Missile (AGM-129)	Government/contractor logistics support		Operation and maintenance costs for fiscal year 1999 totaled $22,939,730.
• (14) Air Launch Cruise Missile (AGM-86)	Government support		Operation and maintenance costs for fiscal year 1999 totaled $22,069,857.

Continued

System	Type of support strategy in use	Planned support strategy	Estimated cost information
• (15) Conventional Cruise Missile (AGM-86C)	Government/interim contractor support		Operation and maintenance costs for fiscal year 1999 totaled $4,782,100.
• (16) HARM Missile (AGM-88)	Government/contractor logistics support		Operation and maintenance costs for fiscal year 1999 totaled $9,051,809.
Aircraft			
• (17) F-22		Interim contractor support	Estimated acquisition cost is $58.6 billion.
• (18) Joint Strike Fighter		Not determined	Estimated development cost is $19 billion.
• (19) Joint Primary Aircraft Training System (JPATS)		Contractor logistics support	Estimated acquisition cost is $4 billion.
• (20) F-117A (except for engine)	Contractor total system performance responsibility		Operation and maintenance costs for fiscal year 1999 totaled $255,561,338.
• (21) T-38C – Avionics Upgrade		Contractor logistics support	Estimated acquisition cost is $855.5 million.
• Commercial Derivative Aircraft (17 weapon systems)	Contractor logistics support		Operation and maintenance costs for the following systems for fiscal year 1999 totaled:
(22) C-9 (2 models)			$35,819,279
(23) C-12 (4 models)			$15,944,032
(24) C-20 (4 models)			$31,342,243
(25) C-21			$443,520,747
(26) C-22			$4,806,795
(27) C-26 (2 models)			$7,808,059
(28) C-38			$3,731,441
(29) C-137 (2 models)			$12,140,406
(30) CT-43			$1,457,662
(31) E-4			$105,166,845
(32) E-9			$8,265,364
(33) EC-18 (2 models)			$1,656,309
(34) KC-10			$317,105,416
(35) T-3			$10,998,075
(36) T-43			$40,694,128
(37) TC-18			$9,555,999
(38) VC-25			$41,271,477
• (39) C/KC-135 (3 models)	Government/contractor logistics support		Operation and maintenance costs for fiscal year 1999 totaled $1,328,224,524.
(40) PACER CRAG	Warranty		Total estimated program cost is $479 million.
• (41) B-52 Aircraft (2 models)	Government/contractor logistics support		Operation and maintenance costs for fiscal year 1999 totaled $312,392,949.
• (42) C-5 (3 models)	Government/contractor logistics support		Operation and maintenance costs for fiscal year 1999 totaled $1,029,532,135.
• (43) C-141 (2 models)	Government/contractor logistics support		Operation and maintenance costs for fiscal year 1999 totaled $689,122,516.

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System	Type of support strategy in use	Planned support strategy	Estimated cost information
• (44) F-15	Government/contractor logistics support		Operation and maintenance costs for fiscal year 1999 totaled $1,503,762,717.
(45) Avionics Upgrade	Contractor logistics support		
(46) Low Altitude Navigation & Targeting for Night (LANTRIN)	Government/contractor logistics support		
(47) Operational Flight Program (OFP) Software Development	Contractor logistics support		
(48) APG-63(V)1 Radar Support	Contractor logistics support		
• (49) F-229 engine (for F-15E aircraft and newer F-16s)		Contractor logistics support	Estimated production cost is $1.2 billion.
• (50) F-119 engine (for F-22 and Joint Strike Fighter aircraft)	Interim contractor support	Contractor logistics support	Included in the costs of the F-22.
• (51) C-130 (Four Models)	Contractor logistics support		Operation and maintenance costs for fiscal year 1999 totaled $1,155,542,640.
(52) C-130 Avionics Modernization Program	Contractor logistics support		
(53) AC-130U (Special Operations aircraft)		Contractor total system performance responsibility	
• (54) C-17	Contractor total system performance responsibility (Flexible Sustainment)		Operation and maintenance costs for fiscal year 1999 totaled $308,179,789.
• (55) U-2 (2 models)	Contractor logistics support	Contractor total system performance responsibility	Operation and maintenance costs for fiscal year 1999 totaled $20,627,347.
• (56) T-1	Contractor logistics support		Operation and maintenance costs for fiscal year 1999 totaled $83,010,499.
• (57) A-10	Government support		Operation and maintenance costs for fiscal year 1999 totaled $469,371,422.
• (58) F-16	Government/contractor logistics support	Government/contractor logistics support	Operation and maintenance costs for fiscal year 1999 totaled $1,857,115,600.
(59) Avionics upgrade			Estimated acquisition cost is $1.6 billion.
• (60) B-1B	Government/contractor logistics support		Operation and maintenance costs for fiscal year 1999 totaled $529,283,969.
• (61) B-2	Contractor total system performance responsibility		Operation and maintenance costs for fiscal year 1999 totaled $208,164,283.

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System	Type of support strategy in use	Planned support strategy	Estimated cost information
• (62) H-1	Government/contractor logistics support		Operation and maintenance costs for fiscal year 1999 totaled $58,511,963.
• (63) H-60	Government/contractor logistics support		Operation and maintenance costs for fiscal year 1999 totaled $116,936,155.
• (64) H-53	Government/contractor logistics support		Operation and maintenance costs for fiscal year 1999 totaled $736,000.
Aircraft Subsystems			
• (65) Common Low Observables Verification System (CLOVerS)		Not determined	Estimated acquisition cost is $30 million.
• (66) Joint Service Electronic Combat Systems Tester (JSECST)		Not determined	Estimated acquisition cost is $115.6 million.
• (67) Common Organizational Level Aircraft System Tester (COAST)		Not determined	Estimated acquisition cost is $7.82 million.
• (68) Common Munitions BIT Reprogramming Equipment (CMBRE)		Contractor warranty	Estimated acquisition cost is $37.1 million.
• (69) JOVIAL software maintenance tools	Contractor logistics support		Operation and maintenance cost for fiscal year 1999 totaled $878,000.
• (70) Embedded Global Positioning System Inertial Navigation System (EGI)		Contractor warranty	Estimated acquisition cost is $415.0 million.
• (71) Towed Decoy (An/ALE-50)	Government/contractor logistics support		Operation and maintenance cost for fiscal year 1999totaled $724,000.
• (72) Joint Helmet Mounted Cueing System (JHMCS)		Not determined	Estimated development cost is $89.1 million.
Space and Missile Systems			
• (73) Space Based Infrared System (SBIRS)		Contractor total system performance responsibility	Estimated acquisition cost is $1.5 billion.
• (74) Evolved Expendable Launch Vehicle (EELV) System		Not determined (program office is buying a new launch service capability)	Estimate for development and purchase of launch services is $2.7 billion for fiscal years 1998-2003 based on fiscal year 1998 President's budget.
• (75) MILSTAR Satellite Communications System		Government/contractor logistics support	Estimated acquisition cost is $9.5 billion through fiscal year 2005 based on fiscal year 2001 President's budget.

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System	Type of support strategy in use	Planned support strategy	Estimated cost information
• (76) Global Broadcast Service (GBS)		Contractor logistics support	Estimated acquisition cost is $1 billion for fiscal years 1996-2003 based on fiscal year 1998 President's budget.
• (77) Advanced Extremely High Frequency Military Satellite Communications System (AEHF)		Contractor logistics support	Estimated acquisition cost is $2.9 billion for fiscal years 2000-2005 based on fiscal year 2000 President's budget
• (78) Wideband Gapfiller Satellites (WGS)		Not determined	Estimated acquisition cost is $872.2 million through fiscal year 2005 based on fiscal year 2001 President's budget.
• (79) Advanced Wideband System (AWS)		Not determined	Estimated acquisition cost is $292.1 million through fiscal year 2005 based on fiscal year 2001 President's budget.
• (80) Ultra High Frequency Demand Assigned Multiple Access Satellite Communications Airborne Integrated Terminal Group (DAMA-AITG)		Contractor warranty	Estimated acquisition cost is $244.7 million.
• (81) NAVSTAR Global Positioning System (GPS)	Government/contractor logistics support		Operation and maintenance costs for fiscal year 1999 totaled $27,422,061.
• (82) Satellite Control Network (SCN)	Government/contractor logistics support		Operation and maintenance costs for fiscal year 1999 totaled $216,060,650.
• (83) Spacelift Range System	Contractor logistics support		Information not available
• (84) Defense Satellite Communication System (DSCS)	Government/contractor logistics support		Operation and maintenance costs for fiscal year 1999 totaled $3,076,000.
Electronics Systems			
• (85) Global Air Traffic Management (GATM) System		Contractor warranty	Estimated acquisition cost is $2.1 billion for fiscal years 1999-2005 based on fiscal year 1999 President's budget.
• (86) Precision Landing Systems Receiver (PLSR)		Interim contractor support	Life-cycle acquisition cost estimate is $47.8 million based on fiscal year 2002 program objective memorandum.
• (87) Joint Precision Approach and Landing System (JPALS)		Not determined	Estimated acquisition cost is $116.0 million for fiscal years 1999-2005 based on fiscal year 1999 President's budget.
• (88) Mobile Approach Control System (MACS)		Not determined	Life-cycle acquisition cost estimate is $246.7 million as of October 1999.

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System	Type of support strategy in use	Planned support strategy	Estimated cost information
• (89) Air Force Terminal Instrument Procedures – Replacement (AFTERPS-R)		Not determined	Life-cycle acquisition cost estimate is $17.8 million based on fiscal year 2002 program objective memorandum.
• (90) Region/ Sector Air Operations Center (R/SAOC) Modernization Program		Not determined	Estimated acquisition cost is $86.9 million for fiscal years 1997-2003.
• (91) Integrated Broadcast Service (IBS)		Contractor logistics support	Life-cycle acquisition cost estimate is $111.8 million based on fiscal year 2000 President's budget.
• (92) Intelligence Training Systems (ITS)		Government/contractor logistics support	Funding information is classified.
• (93) Distributed Common Ground System (DCGS)		Contractor logistics support	Life-cycle acquisition cost estimate is $225.6 million based on fiscal year 2000 President's budget.
• (94) Tactical Exploitation Group (TEG)		Contractor logistics support	Life-cycle acquisition cost estimate is $90.4 million based on fiscal year 2000 President's budget.
• (95) Eagle Vision		Contractor logistics support	Life-cycle acquisition cost estimate is $29.7 million based on fiscal year 2000 President's budget.
• (96) Airborne Broadcast Intelligence (ABI)		Contractor logistics support	Life-cycle acquisition cost estimate is $33.2 million based on fiscal year 2000 President's budget.
• (97) Airborne Warning And Control System (AWACS) - E-3 Sentry	Government/interim contractor support		Operation and maintenance costs for fiscal year 1999 totaled $202,851,007.
• (98) Cheyenne Mountain Complex	Contractor logistics support	Contractor total system performance responsibility	Operation and maintenance costs for fiscal year 1999 totaled $102,190,559.
• (99) High Frequency (HF) Global Communications System		Contractor logistics support	Estimated acquisition cost is $135 million for fiscal years 1995-2005 based on fiscal year 2000 program. objective memorandum
• (100) Teleinfomatics	Government support		Operation and maintenance funds are budgeted and managed at the base level thus there is no source for a cumulative value.
• (101) Integrated Digital Telecom-munications System (IDTS)	Contractor warranty		Operation and maintenance funds are budgeted and managed at the base level thus there is no source for a cumulative value.

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System	Type of support strategy in use	Planned support strategy	Estimated cost information
• (102) Command and Control Switching System (CCSS)	Contractor logistics support		Operation and maintenance funds are budgeted and managed at the base level thus there is no source for a cumulative value.
• (103) Joint Surveillance & Target Attack Radar System (JSTARS)	Government/contractor logistics support	Contractor total system performance responsibility	Operation and maintenance costs for fiscal year 1999 totaled $62,416,000.
• (104) PACER SPEAK	Government/contractor logistics support		Estimated acquisition cost is $40.7 million.
• (105) Single Channel Ground & Airborne Radio System (SINCGARS)	Contractor warranty		Estimated acquisition cost is $38.8 million.
• (106) HAVE QUICK	Government/contractor logistics support		Estimated acquisition cost is $3.1 million.
• (107) Scope Shield (SS)	Government/contractor logistics support		Estimated acquisition cost is $99.5 million.
• (108) Multi-Mission Advanced Tactical Terminal (MATT)	Contractor logistics support		Estimated acquisition cost is $56.2 million.
• (109) Joint Tactical Information Distribution System (JTIDS)	Government/contractor logistics support		Estimated production cost is $322.7 million.
• (110) Litening II Targeting System		Contractor logistics support	Estimated acquisition cost is $301 million.
• (111) Joint Tactical Radio System (JTRS)		Not determined	Estimated acquisition cost is $2.4 million.
• (112) Air Battlefield Communication and Control Center Capsules (ABCCC)	Government support		Operation and maintenance costs for fiscal year 1999 totaled $360,000.
• (113)Atmospheric Early Warning System (AEWS)	Government support		Operation and maintenance costs for fiscal year 1999 totaled $1,377,000.
• (114) Air Force Mission Support System (AFMSS)	Government support		Operation and maintenance costs for fiscal year 1999 totaled $14,085,000.
• (115) Counter-Drug Surveillance & Control System (CSCS)	Contractor logistics support		Operation and maintenance costs for fiscal year 1999 totaled $2,857,000.
• (116) Deliberate & Crisis Action Planning and Execution Segments (DCAPES)	Contractor logistics support		No operation and maintenance funding prior to fiscal year 1999.

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System	Type of support strategy in use	Planned support strategy	Estimated cost information
• (117) Ground Theatre Air Control System (GTACS)	Government support		No operation and maintenance funding prior to fiscal year 2000.
• (118) Joint Tactical Terminal (JTT)		Contractor warranty	Included in MATT above.
• (119) SHELTERS	Government support		Operation and maintenance costs for fiscal year 1999 totaled $178,000.
• (120) Theatre Battle Management Core Systems (TBMCS)	Contractor logistics support		Operation and maintenance costs for fiscal year 1999 totaled $12,982,000.
• (121) Weather Systems	Contractor logistics support		Operation and maintenance costs for fiscal year 1999 totaled $3,300,000.
• (122) Tactical Automated Security System (TASS)	Contractor logistics support		Operation and maintenance costs for fiscal year 1999 totaled $725,000.
• (123) Base and Installation Security System (BISS)	Government/contractor logistics support		Operation and maintenance costs for fiscal year 1999 totaled $1,895,000.
• (124) Weapons Storage Security System (WS3)	Government support		Operation and maintenance costs for fiscal year 1999 totaled $81,719.
Training systems			
• (125) Training systems and simulators	Contractor logistics support		Operation and maintenance costs for fiscal year 1999 totaled $57,609,000.
• (126) Air Combat Training System (ACTS).	Government/contractor logistics support		Operation and maintenance funds are budgeted and managed at the base level thus there is no source for a cumulative value.
• (127) Range Threat Systems	Government support		Operation and maintenance costs for fiscal year 1999 totaled $8,357,000.

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