



DEPARTMENT OF DEFENSE

JOINT AUDIT REPORT

JOINT CONTRACTING FOR DEPOT MAINTENANCE OF SECONDARY ITEMS

Report No. 98-085

March 4, 1998

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Acronyms

| | |
|------|----------------------------------|
| CAGE | Commercial and Government Entity |
| FSC | Federal Supply Class |
| ICP | Inventory Control Point |
| NSN | National Stock Number |

March 4, 1998

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE
(ACQUISITION AND TECHNOLOGY)

SUBJECT: Audit Report on Joint Contracting for Depot Maintenance of
Secondary Items (Report No. 98-085)

We are providing this audit report for review and comment. This audit was requested by the Joint Logistics Commanders, and was performed as a joint audit effort under the auspices of the Joint Logistics Audit Planning Group. The Naval Audit Service led this audit effort with participation from the DoD Inspector General and Army and Air Force audit organizations.

The Under Secretary of Defense (Acquisition and Technology) did not provide comments on the draft report. DoD Directive 7650.3 requires that all recommendations be resolved promptly. Therefore, we request that the Under Secretary of Defense (Acquisition and Technology) provide comments on the final report by May 4, 1998.

We appreciate the courtesies extended to the audit team. Questions on the audit should be directed to Ms. Barbara M. Cobble, Naval Audit Service, at (703) 604-2027 (DSN 664-2027) (bcobble@audit.navy.mil) or Mr. Luther Bragg, Naval Audit Service, at (703) 604-0739 (DSN 664-0739) (lbragg@audit.navy.mil). The audit team members are listed on the inside back cover. See Appendix F for report distribution.

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DoD Joint Logistics Audit Planning Group

Report No. 98-085
(Project No. 7LD-5027)

March 4, 1998

Joint Contracting for Depot Maintenance of Secondary Items

Executive Summary

Introduction. This audit was requested by the Joint Logistics Commanders and was performed as a joint audit effort under the auspices of the DoD Joint Logistics Audit Planning Group. The Naval Audit Service led this effort, with participation from the DoD Inspector General and Army and Air Force audit organizations. Joint contracting for depot-level maintenance involves having a contractor perform maintenance for more than one DoD component under a single contract administered by just one DoD component. DoD guidance emphasizes the desirability of joint contracting agreements between the Services to achieve the most cost-effective depot maintenance possible. The reviewed data files contained 5,643 separate maintenance contracts valued at \$1.8 billion that were open as of the second quarter of FY 1997.

Objectives. The objectives of the audit were to determine opportunities for combining existing depot maintenance contracts into joint contracts, and to identify savings from increased use of joint contracts for depot maintenance.

Audit Results. The Services did not identify and initiate actions to use joint contracts for depot-level maintenance. We determined that at least 3,479 contracts, valued at \$1.2 billion, in our audit universe, involving multiple Services using the same repair facility or supplier, were candidates for joint contracting. Opportunities for joint contracting may also exist for repair of similar items. Since there were no current or historical examples of joint contracting agreements, we could not identify specific savings. However, we believe many opportunities for administrative efficiencies and economies-of-scale cost savings exist.

Summary of Recommendations. We recommend that the Under Secretary of Defense (Acquisition and Technology) expand DoD guidance relative to joint contracting to better facilitate such contracting, and charter an Integrated Product Team to develop a joint contracting process. In addition, we recommend that the Deputy Under Secretary of Defense (Acquisition Reform) integrate a joint contracting training module into course curricula to ensure that personnel receive joint contracting training.

Management Comments. Comments were not received to a draft of this report. Therefore, we request that the Under Secretary of Defense (Acquisition and Technology) provide comments on the final report by May 4, 1998.

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Part I - Audit Results

Audit Background

This audit was requested by the Joint Logistics Commanders and was performed as a joint audit effort under the auspices of the Joint Logistics Audit Planning Group. The Joint Logistics Commanders asked the Group to determine whether there are opportunities for joint contracting in depot maintenance.

Depot-level maintenance represents the most extensive level of maintenance and entails repair, rebuilding, and major overhaul of principal end items (e.g., aircraft, ships, and tanks), parts, assemblies, and subassemblies. It also includes limited manufacture of parts, modifications, reclamation, technical support, and testing, as well as software maintenance.

DoD spends about \$11 billion to \$14 billion annually for depot-level maintenance. Projected costs for FYs 1996 through 2001 exceed \$74 billion. Of the total DoD estimated cost of \$11.5 billion for FY 1997, about \$7.0 billion was for work to be performed in Government-operated facilities (organic maintenance) and \$4.5 billion was for work to be performed at privately operated facilities (contract maintenance). Contract maintenance includes depot-level maintenance of principal end items and secondary items (reparable components, minor end items, and repair parts). This audit focused on contract depot-level maintenance for Service-managed, secondary reparable items.

DoD 7000.14-R, "DoD Financial Management Regulation," March 16, 1993, requires each DoD component to report depot maintenance workloads and identify the portions that are inter-service and joint contract. Inter-service represents maintenance performed by the organic (Government-owned) activity of one Service in support of an activity from another Service. Joint contracting is maintenance performed by a contractor for more than one DoD component under a single contract administered by just one DoD component. For FY 1996, DoD reported \$423 million in inter-service and joint contracting depot maintenance and repair work. Of this amount, \$417 million (98.6 percent) was organic maintenance and \$6 million (1.4 percent) was contract maintenance. (See Appendix E for definitions of key terms.)

A related key goal of the DoD is to reduce the operating and support costs for its weapon systems and equipment. Joint contracting is in keeping with this goal and Goal 9 of the "DoD Acquisition" National Performance Review, DoD Reinvention Impact Center, to eliminate the layers of management through streamlined processes while reducing the DoD acquisition and related workforce by 15 percent by the year 2000.

Audit Objectives

The objectives of the audit were to:

- Determine opportunities for combining existing depot maintenance contracts into joint contracts.
- Identify savings from increased use of joint contracts for depot maintenance.

See Appendix A for a discussion of the details on scope, methodology, management control program, and related prior audit coverage.

Joint Contracting

The Services did not identify and initiate action to use joint contracts for depot-level maintenance of secondary items. We determined that at least 3,479 contracts in our audit universe of 5,643 contracts involved multiple Services using the same repair facility or supplier. The 3,479 contracts were candidates for joint contracting. Opportunities for joint contracting may also exist for repair of similar items. While Defense policy required establishment of joint contracting maintenance arrangements, guidance did not provide specific criteria for identifying joint contracting opportunities, and did not establish processes to accomplish joint maintenance contracts. As a result, the Services missed opportunities for administrative efficiencies and economies-of-scale cost savings.

Policies and Procedures

The Federal Acquisition Regulation, Part 37, "Service Contracting," defines a service contract as a contract that directly engages the time and effort of a contractor whose primary purpose is to perform an identifiable task (such as maintenance, overhaul, and repair) pertinent to equipment, supplies, or systems. Contracts awarded to a single source without the benefit of competition must be justified in accordance with Part 6, Subpart 6.3, "Other than Full and Open Competition."

DoD Directive 4151.18, "Maintenance of Military Materiel," August 12, 1992, establishes policy and assigns responsibility for the performance of DoD materiel maintenance, including maintenance of hardware, equipment, and software, for both organic and contract types of maintenance. It is DoD policy that inter-service (involving multiple Services), intra-service (within the same Service), and joint contracting maintenance support arrangements shall be established and executed to achieve the most cost-effective depot maintenance possible, consistent with readiness requirements of the Services.

Use of Joint Contracts

Existing Maintenance Contracts. The Services did not identify and initiate action to use joint contracts for depot-level maintenance of secondary items. We obtained data files from the Services' Inventory Control Points (ICPs) for depot-level maintenance contracts that were open during the second quarter of FY 1997. We identified seven contracts where one Service reported using another Service's repair contract. However, these seven contracts related to the repair of items used by more than one Service that required materiel support rather than joint

contracting. Thus, the Services' data did not contain any cases of joint contracting. We interviewed ICP personnel, including contracting officers, engineers, equipment specialists, item managers, and program managers. ICP personnel were not aware of their use of any joint contracts for depot-level maintenance of secondary items.

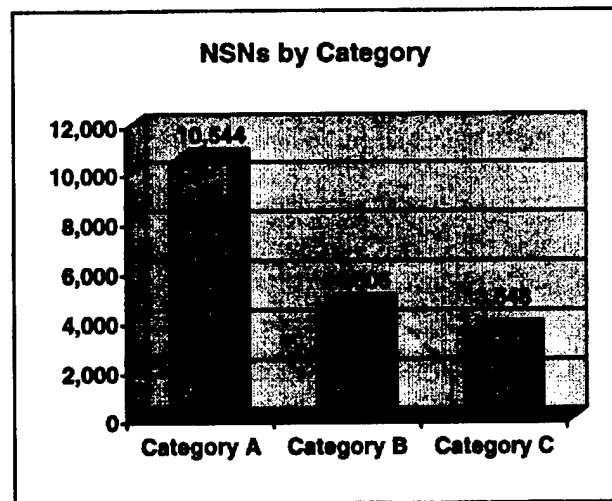
Consolidation Opportunities. Opportunities exist to consolidate repair requirements for two or more Services on joint contracts. We analyzed the Services' depot-level maintenance contracts for commonalities and identified three categories of criteria where joint contracting opportunities may exist:

Category A - Same repair facility: Services separately contracting with the same repair facility.

Category B - Same supplier: Services separately contracting for repairs of items that are supplied by the same contractor (manufacturer).

Category C - Similarity of items: Services separately contracting for repair of items that may be similar enough to warrant a joint contract (the items have the same Federal Supply Class (FSC), same item name, and similar standard price).

The data files provided by the ICPs contained 5,643 separate contracts, valued at \$1.8 billion, for repair of 18,698 items with separate national stock numbers (NSNs). We determined that the 5,643 contracts were awarded to 1,791 separate contracting entities. By applying the described criteria (Categories A, B, and C), we divided the contract data files into three unique subsets matching the criteria. As shown in the chart at right, of the 18,698 NSNs, 10,544 applied to Category A, 4,606 applied to Category B, and 3,548 applied to Category C.



Joint Contracting

Consolidation opportunities exist in Category A (same repair facility) and Category B (same supplier). We also noted there was the potential for joint contracts related to Category C (similarity of items).

Same Repair Facility. Instances where two or more Services already have repair contracts at the same repair facility represent the best opportunity for joint contracting. We used the Commercial and Government Entity (CAGE) codes to identify repair facilities. By comparing CAGE codes among contracts in the data files, we determined that 308 of the 1,791 repair facilities had repair contracts with multiple Services (a separate contract for each Service). The 308 repair facilities account for 2,554 contracts, valued at \$860 million, or about 45 percent of all repair contracts in the data files. (Appendix B lists the CAGE codes, name of repair facility, location, and number of contracts awarded for instances where at least five contracts were awarded to the same repair facility.) To test the feasibility of joint contracting, we reviewed 20 "scenarios" (41 contracts). Hereafter in this report, scenarios refer to instances with at least two repair contracts in more than one Service.

We determined that multiple Services using the same repair facility under separate contracts represent joint contracting opportunities. The following Tables 1 through 3 illustrate three examples of such joint contracting opportunities from our audit sample:

Table 1
Example 1 of Potential Joint Contract
for Same Repair Facility

Repair Facility: GEC-Marconi Electronic Systems Corporation, Wayne, NJ
 Service Activities: Army Communications-Electronics Command
 and Naval Inventory Control Point

| Details on Contracts | | | | |
|----------------------|-----------------|---------------------------------|---------------|--|
| Service | Contract Number | Length of Contract | Dollar Value | Weapon System |
| Army | DAAB0795DA013 | 1 year with two 1-year options | \$4.9 million | AN/ASN-128 Lightweight Doppler System and AN/ASN-137 Improved Lightweight Doppler System |
| Navy | N0038395D004J | 3 years with two 1-year options | \$3.5 million | AN/APN-187 Doppler Velocity Altimeter Radar Set |

| Items on Contracts | | |
|--------------------|------------------|-----------------------------|
| Contract Number | NSN | Item Name |
| DAAB0795DA013 | 5998-01-281-1950 | Circuit Card Assembly |
| | 5998-01-281-1951 | Circuit Card Assembly |
| | 5841-01-318-0654 | Receiver-Transmitter, Radar |
| N0038395D004J | 5841-00-168-3486 | Computer, Tracker, FR |
| | 5841-00-168-3487 | Control Indicator |
| | 5841-00-168-3489 | Receiver-Transmitter |
| | 5841-00-168-7683 | Antenna, Microwave |
| | 5841-00-168-7707 | Electronic Component |
| | 5841-00-168-7896 | Power Supply |
| | 5998-00-168-7894 | Circuit Card Assembly |
| | 5998-01-346-5378 | Circuit Card Assembly |

**Table 2
Example 2 of Potential Joint Contract
for Same Repair Facility**

Repair Facility: Moog Inc. Aircraft Group, Torrance Operations, Torrance, CA
 Service Activities: Naval Inventory Control Point and Oklahoma City Air Logistics Center

| Details on Contracts | | | | |
|----------------------|-----------------|--------------------------------|---------------|---|
| Service | Contract Number | Length of Contract | Dollar Value | Weapon System |
| Navy | N0038395G002H | 2 years | \$3.0 million | Components of Flight Control System for F/A-18 Aircraft |
| Air Force | F3460195D0366 | 1 year with two 1-year options | \$1.0 million | Hydraulic Motor/ Actuator for F-16 Aircraft |

| Items on Contracts | | |
|--------------------|------------------|---------------------------|
| Contract Number | NSN | Item Name |
| N0038395G002H | 1650-00-418-3158 | Servo Valve, Hydraulic |
| | 1650-01-089-6802 | Housing-Sleeve-Slid |
| | 1650-01-089-6804 | Housing-Sleeve-Slid |
| | 1650-01-253-5836 | Servo Cylinder |
| | 1650-01-253-5837 | Servo Cylinder |
| | 1680-01-125-8905 | Transmission, Mechanical |
| | 1680-01-125-8906 | Transmission, Mechanical |
| | 1680-01-125-8907 | Transmission, Mechanical |
| | 1680-01-125-8909 | Transmission, Mechanical |
| | 1680-01-114-0225 | Transmission, Mechanical |
| | 6695-01-125-8859 | Transducer, Motional |
| | 6695-01-301-0814 | Transducer, Motional |
| F3460195D0366 | 1650-01-302-3404 | Hydraulic Motor |
| | 1650-01-308-0839 | Hydro-Mechanical Actuator |
| | 1650-01-261-8078 | Hydro-Mechanical Actuator |

Table 3
Example 3 of Potential Joint Contract for Same Repair Facility

Repair Facility: Litton Systems Inc., Electron Devices Division, Williamsport, PA
 Service Activities: Army Missile Command and Sacramento Air Logistics Center

| Details on Contracts | | | | |
|----------------------|-----------------|--------------------------------|---------------|--|
| Service | Contract Number | Length of Contract | Dollar Value | Weapon System |
| Army | DAAH0196C0232 | 1 year with 1-year option | \$6.0 million | PATRIOT Crossed Field Amplifier assemblies |
| Air Force | F0460696D0078 | 1 year with two 1-year options | \$6.7 million | Traveling Wave Tube applicable to AN/FPS-108 |

| Items on Contracts | | |
|--------------------|------------------|---------------|
| Contract Number | NSN | Item Name |
| DAAH0196C0232 | 5960-01-110-2668 | Electron Tube |
| F0460696D0078 | 5960-01-011-6358 | Electron Tube |

The preceding examples present excellent opportunities to consolidate requirements into one contract for the repair facility. The contracts were awarded in the same fiscal year, cover similar periods of time, and were for repair of similar types of items. For Example 1, both the Army Communications-Electronics Command and the Naval Inventory Control Point had previous contracts with this same repair facility awarded in FY 1991. Therefore, the Army and Navy missed two prior opportunities to consolidate requirements.

In addition to identifying opportunities for consolidating repair requirements of multiple Services with the same repair facilities, we identified opportunities for intra-service consolidations. ICPs within the same Service had prepared separate depot maintenance contracts with the same repair facilities. Table 4 provides an example:

Table 4
Example of "Intra-Service" Consolidation Opportunities

| Contract No. | CAGE | ICP/Location |
|---------------------|-------------|--|
| F3460196D0354 | 017N4 | Oklahoma Air Logistics Center |
| F4160896D0847 | 017N4 | San Antonio Air Logistics Center |
| N0010492GA016 | 017N4 | Naval Inventory Control Point (Mechanicsburg office) |
| N0038392GK201 | 017N4 | Naval Inventory Control Point (Philadelphia office) |

From the contract data provided by the ICPs, we determined that 1,926 contracts were awarded to the same repair facilities by multiple intra-service ICPs. Table 5 shows the intra-service opportunities for consolidating depot maintenance repair contracts with the same repair facility:

Table 5
Intra-Service Opportunities for Consolidating Contracts

| Service | No. of CAGEs | No. of Contracts |
|----------------|---------------------|-------------------------|
| Army | 11 | 63 |
| Navy | 116 | 810 |
| Air Force | 136 | 1,053 |
| Total | 263 | 1,926 |

Same Supplier. The second category reviewed includes instances where at least two different Services had existing depot maintenance contracts that contained items supplied by the same contractor and were repaired by that supplier or an alternate repair facility. Due to time constraints, we excluded from our analysis all items having multiple original supplier CAGE codes. There were 925 contracts, valued at \$312 million, remaining after the exclusions. (Appendix C lists the CAGE codes, name of supplier, location, and number of contracts awarded where at least three contracts were for repair of items supplied by the same contractor.) To test the feasibility of combining these contracts, we reviewed 11 scenarios (49 contracts) in which items with common supplier CAGE codes were being repaired by at least 2 Services under separate contracts.

We determined that items supplied by the same contractor provide opportunities for joint contracting. Table 6 illustrates an example:

Table 6
Example of Potential Joint Contract for Same Supplier

Supplier: Tektronix Inc, Beaverton, OR

| Contract Number | Repair Facility | Length of Contract | Value (\$000) | Weapon System |
|--|--|--|----------------|---|
| DAAB0795DB755 (Army) | Wilcox | 1 year with four 1-year options | \$4,525.2 | AN/FPN-66 Radar Terminal |
| N0010492GA094 (Navy) | Tektronix Inc. | Basic Ordering Agreement with requirements for 7 years | \$110.0 | General Purpose Electronic Test Equipment |
| F0960396M1853 & F0960397M0200 (Air Force) | Event Systems and Digicomp (Tektronix Inc. listed as potential source of repair) | Purchase Orders | \$4.0 \$0.4 | F-15/16 Flight Simulator Terminal |

As shown in Table 6, opportunities exist for joint contracting among more than two Services. The contracts in the example cover a similar time period and the items were supplied (manufactured) by the same contractor.

We concluded that the above example was an opportunity to consolidate requirements into one repair contract. In the example, we determined that under Contract A, one activity is currently paying \$1,746 for the repair of a graphics terminal (7025-01-353-2481) while another activity is having this same item repaired for \$450 at another repair facility. By combining Army, Navy, and Air Force requirements, Tektronix (the supplier of all the items) or the other repair facilities may be able to offer DoD significant savings on overall repair costs.

Contracts Meeting Categories A and B Criteria. From the data files, we determined that 2,015 of the 5,643 contracts (36 percent) met both criteria (same repair facility and same supplier). These instances offer the best opportunities for joint contracting -- the Services currently have separate contracts with the same company to repair items that were supplied by the same company (the repair facility and the supplier facility may not be at the same location).

Similarity of Items Being Repaired. The last category for identifying joint contracting opportunities involves items with similar characteristics. We used the FSC, item name, and standard price to identify items for review. To determine similarity, we requested technical data and asked Service and DoD Inspector General engineers for their input. There were 2,164 contracts, valued at \$591 million, having 3,548 items from which to identify items meeting similarity criteria. To test the feasibility of joint contracting, we reviewed 38 scenarios (81 contracts) with the similarity criteria. (Appendix D provides a listing of instances in which at least 10 similar items were being repaired in the same FSC. Other similar items also exist in Categories A and B.) Table 7 illustrates a joint contracting opportunity based on same FSC, same item name, and similar standard prices, involving the Army (Army Communications-Electronics Command) and Navy (Naval Inventory Control Point):

Table 7
Example of Potential Joint Contract for Similar Items

| Service | Original Equipment Manufacturer | NSN | Item Name | Standard Price |
|---------|---------------------------------|------------------|---------------|----------------|
| Army | RCA Corporation | 5960-01-030-5345 | Electron Tube | \$15,982 |
| Navy | Texas Instruments | 5960-00-140-1600 | Electron Tube | \$15,790 |

The above example was identified by DoD Inspector General engineers as a candidate for joint contracting. While other instances of joint contracting for the repair of similar items may exist, such instances would each require a detailed engineering analysis on a case-by-case basis to determine the feasibility of consolidating.

Sample Results. As shown in the various tables and discussions above, the Army, Navy, and Air Force are not identifying and acting on multiple opportunities to consolidate their depot-level requirements into joint contracts. We selected a judgmental sample of 69 scenarios (including all 3 categories) and determined that 35 of 69 scenarios were candidates for joint contracting consideration. The results indicated that items with the same repair facility (Category A) and the items coming from the same supplier (Category B) were prime candidates for consolidating, while similar items being repaired (Category C) can also be candidates for consolidation but not as frequently. The primary reasons scenarios were not candidates for consolidation were: awarding sole source contracts (17 scenarios discussed below), developing organic

(government-operated) capabilities (10 scenarios), and phasing out items (4 scenarios). Sample results are summarized in Table 8, while details on each of the 69 scenarios are available upon request.

Table 8
Sample Results Regarding Consolidation Opportunities

| Criteria | Contract Scenarios | No. of Contracts | Value (\$ Millions) | Consolidation Opportunities | |
|----------|--------------------|------------------|---------------------|-----------------------------|----|
| | | | | Yes | No |
| A | 20 | 41 | \$142.4 | 18 | 2 |
| B | 11 | 49 | \$246.2 | 9 | 2 |
| C | 38 | 81 | \$245.3 | 8 | 30 |
| Total | 69 | 171 | \$633.9 | 35 | 34 |

Impact of Sole Source Contracts on Joint Contracting Opportunities

In our audit sample, 140 of 171 contracts were awarded sole source. We reviewed justification and approval sections of contracts and determined that DoD contracting officials complied with the Federal Acquisition Regulation, Part 6, Subpart 6.3. However, we did not verify the accuracy of the data supporting the justifications. The most common reasons for awarding contracts sole source were lack of technical data, highly specialized equipment, trained personnel, test equipment, or proprietary data.

We evaluated the extent to which sole sourcing of selected maintenance contracts would limit opportunities for joint contracting. For Category A (same repair facility), the practice of awarding maintenance contracts to sole source contractors does not limit joint contracting opportunities, since the Services are using the same repair facilities. For Category B (same supplier), the practice of using sole source contracts limited joint contracting opportunities in 2 of the 11 scenarios reviewed. For both of these scenarios, the Navy awarded sole source contracts to repair facilities that were not listed as competitive sources for the corresponding Air Force contracts. While the Navy typically awarded repair contracts to the original equipment manufacturer, the Warner Robins Air Logistics Center established an aggressive program for source development and selection. This program should also increase sources of repair.

For Category C (similarity of items), the practice of using sole source contracts limited joint contracting opportunities in 15 of the 38 scenarios reviewed. In 4 of the 15 scenarios, individual Services awarded sole source contracts to repair facilities that were not listed as sources for the corresponding competitive contracts in other Services. For the remaining 11 scenarios, separate Services awarded sole source contracts to different repair facilities, thereby precluding opportunities for joint contracts.

Expanding Published Guidance and Creating Processes

DoD Directive 4151.18 encourages joint contracting by indicating that joint contracting maintenance arrangements should be established to achieve the most cost effective depot maintenance possible. However, DoD guidance is not specific enough to enable the Service ICPs to achieve such joint contracting. Contracting and maintenance personnel use some general criteria when combining secondary items on depot maintenance contracts (i.e., same weapon system, same manufacturer, similar technology, and age of equipment being repaired). At Service ICPs, we reviewed procedures for combining repairable items on depot maintenance contracts. ICP personnel used various criteria for combining items on maintenance contracts but did not consider combining requirements for other Services and in some cases intra-service requirements. This criteria included weapon system, manufacturer, or equipment type. To accomplish combined depot-level maintenance requirements, more specific guidance is needed.

To achieve joint contracting for depot-level maintenance, a process must be in place that will provide acquisition and logistics personnel the necessary information to effectively implement the policy guidance. Communications and procedures for interaction will be necessary for successful joint contracting efforts. An effective approach to encouraging implementation and monitoring would be establishing an integrated team of representatives from the acquisition and logistics community to develop the applicable processes. Financial planning and resource management associated with the maintenance of secondary item inventories is another integral part of the process. To ensure financial policies and accounting procedures facilitate joint contracting, the Comptroller community should be a part of the team. These processes could affect personnel with major management commands, ICPs, and/or program offices. To eliminate barriers and provide broad-based understanding, core competency training for contracting should be expanded to include joint contracting.

Potential Efficiencies

Opportunities exist for combining requirements among the Services and establishing joint contracts for depot-level maintenance of secondary items. The 2,554 contracts in which multiple Services were using the same repair facility and 925 contracts in which multiple Services were using the same supplier were prime candidates for joint contracting opportunities. In addition, the 2,164 contracts that involved multiple Services having similar items being repaired could also be considered for joint contracting.

We reviewed existing contracts to determine opportunities that could affect future contracts. Our identification of opportunities for combining requirements does not intend that current contracts be canceled and that the Services incur the associated termination costs. However, annual renewal options would not have to be exercised for future requirements, and future requirements could be combined.

A Logistics Management Institute report, "Consolidation of DoD Inventory Control Points Under the Defense Logistics Agency," September 1997, addressed the consolidation of DoD ICPs and identified potential process improvements that could produce savings. The first initiative was contracting methodology, which was identified as the most significant. The report estimated a 2- to 6-percent savings for direct and indirect personnel costs as a result of consolidation of contracting process. In addition to ICP labor costs, the report identified savings in acquisition costs and inventory investment due to consolidating the contracting process under the Defense Logistics Agency. Depot-level maintenance contracts are a portion of this universe.

Since there were no current or historical examples of joint contracting, we were unable to document specific savings that may be attributed to joint contracting for depot-level maintenance. However, as shown in the examples provided, materiel managers could achieve efficiencies through effective use of joint contracting. We would expect infrastructure reductions related to direct and indirect personnel, lower repair prices, and savings could occur in contract administration costs.

Key goals of DoD and the Services are to reduce operating and support costs for weapon systems and equipment. Joint contracting for depot-level requirements can help achieve those goals while also improving the opportunity for effective competition, and could identify the best practices for complementing depot-level maintenance. Monitoring and tracking the results will also provide a basis for considering the application of joint contracting to principal end items and other logistics processes.

Recommendations

- A. We recommend that the Under Secretary of Defense (Acquisition and Technology):
1. Expand DoD guidance relative to joint contracting to include:
 - a. Policy guidance for combining requirements for repairs to be completed by the same contractor.
 - b. Criteria to identify cases where sufficient similarity exists to warrant further analysis to determine if joint contracting could be feasible. At a minimum, the criteria should contain the same supplier/manufacturer and a combination of the same Federal Supply Class, item name, and similar standard price.
 2. Charter an Integrated Product Team to develop a joint contracting process for depot-level maintenance contracts. The Integrated Product Team should include the Office of the Secretary of Defense contracting and comptroller personnel, the Services' contracting and logistics personnel, and Defense Logistics Agency contracting personnel. The objectives of the team should include requirements to:
 - a. Establish and execute joint contracting maintenance agreements to achieve the most cost-effective depot maintenance possible.
 - b. Ensure joint contracting is used when DoD criteria are met consistent with readiness of the Services.
 - c. Design communications processes for use by the Services to exchange information necessary to accomplish joint maintenance contracts.
 - d. Establish performance reporting and measurements that monitor and track results of joint contracts in terms of support and costs.
- B. We recommend that the Deputy Under Secretary of Defense (Acquisition Reform) integrate a joint contracting training module into course curricula to ensure that personnel receive joint contracting training. Joint contracting training should include DoD criteria for identifying candidates for joint depot maintenance contracts as well as procedures for accomplishing joint depot maintenance contracts.

Management Comments Required

The Under Secretary of Defense (Acquisition and Technology) did not respond to the draft of this report. We request the Under Secretary of Defense (Acquisition and Technology) provide comments on this final report.

Part II - Additional Information

Appendix A. Audit Process

Scope and Methodology

We reviewed 171 contracts within the Services to determine opportunities for combining existing depot-level maintenance contracts into joint contracts and to identify savings derived from the use of joint contracts for the depot maintenance of secondary items. We limited our review to secondary items. Two primary reasons drove this decision – to facilitate performance of the audit and to arrive at more probable opportunities for consolidation. However, our limitation should not be construed as a constraint on the applicability of joint contracting to depot-level maintenance for all items, including principal end items. Because there were no current or historical examples of joint contracts for depot-level maintenance, we were unable to identify specific savings attributable to joint contracting.

We requested data files from all Service ICPs containing information on depot maintenance contracts that were open during the second quarter of FY 1997. The data files we received from the Service ICPs contained 7,235 records. We analyzed these records and determined that 719 were not contract document numbers and 873 had invalid or missing data. These 1,592 contract records were not further analyzed. We did not attempt to verify the accuracy of the data files provided except to ensure that the total funds reported as obligated for depot-level repair of secondary items were reasonable.

In the absence of DoD criteria, we developed criteria to analyze the 5,643 contracts. We divided the contract data into three unique categories based on the following criteria:

Category A. Services separately contracting with the same repair facility.

Category B. Services separately contracting for repairs of items that are supplied by the same contractor (manufacturer). We limited the contracts for consideration for this criteria to NSNs having one supplier.

Category C. Services separately contracting for repair of items that may be similar enough to warrant a joint contract (the items have same FSC, same item name, and similar standard price).

From the contracts in each category (A, B, or C), we judgmentally selected depot maintenance contracts to review for joint contracting opportunities. The intent is not to cancel current contracts and incur termination costs, but to identify consolidation opportunities for future requirements.

We interviewed contracting personnel, engineers/equipment specialists, item managers, and program managers for sample contracts to assess the feasibility of combining contracts and/or specific items on depot maintenance contracts. When we determined that the repairable items on contract had no future contract requirement, we performed no further analysis on those contracts and concluded that the sample was not a potential candidate for consolidation. We determined that the sole source justifications complied with the Federal Acquisition Regulation, but we did not determine the accuracy of the supporting information. We requested technical data from the ICP personnel, when appropriate, and requested engineering assistance to determine similarity.

This economy and efficiency audit was conducted from February 1997 through October 1997. The audit was conducted in accordance with auditing standards issued by the Comptroller General of the United States and, accordingly, included such tests of internal controls as were considered necessary.

Sample Selection

The Services provided data files for open depot maintenance contracts. From the Federal Logistics Information System, we extracted the supplier CAGE code and standard price for each NSN in the data files. Our analysis of the combined data files indicated that the commonalities were repair facility CAGE, supplier CAGE, FSC, item name, and similar standard price. Our sample breakout, based on the three category criteria, is shown in the following table:

| Category | No. of Scenarios | No. of Contracts |
|-----------------|-------------------------|-------------------------|
| A | 20 | 41 |
| B | 11 | 49 |
| C | 38 | 81 |
| Total | 69 | 171 |

We defined a scenario as at least two contracts in more than one Service.

Organizations and Individuals Visited or Contacted

Contacts During the Audit. We visited or contacted individuals and organizations within DoD. Further details are available upon request.

Management Control Program

DoD Directive 5010.38, "Management Control Program," August 26, 1996, requires DoD organizations to implement a comprehensive system of management controls that provides reasonable assurance that programs are operating as intended and to evaluate the adequacy of the controls.

Scope of Review of the Management Control Program. We reviewed the management control plans for each activity visited during the audit.

Adequacy of Management Controls. There were no controls in place relative to joint contracting for depot maintenance of secondary items. Consequently, no management control reviews related specifically to joint contracting were conducted. Since DoD policy was not effective at requiring activities to prepare joint contracts for depot maintenance of secondary items, there was no need for management controls.

Adequacy of Management's Self-Evaluation. Management at the Services' ICPs did not identify joint contracting for depot-level maintenance of secondary items as assessable units under the program and, therefore, did not identify or report any related material management control weaknesses.

Prior Audit Coverage

Within the last 5 years, there have been no prior audits directly related to the audit objectives.

Appendix B. Contracts With Same Repair Facility (Category A)

The following table shows the number of contracts per CAGE code for instances where at least five contracts were awarded to the same repair facility.

| Repair CAGE | Name | Location | No. of Contracts |
|--------------------|---|---------------------|-------------------------|
| 29242 | Texas Aerospace Services Inc. | Abilene, TX | 116 |
| 50218 | International Enterprises Inc. | Talladega, AL | 98 |
| 0USU9 | Digicom Technologies | Newbury Park, CA | 94 |
| 59364 | AlliedSignal Inc. Aerospace Equip. Sys. | Tempe, AZ | 92 |
| 13499 | Rockwell Collins Inc. | Cedar Rapids, IA | 44 |
| 2F259 | Hughes Technical Services Co. | Long Beach, CA | 42 |
| 5Y609 | Duotech Services Inc. | Franklin, NC | 42 |
| 06481 | Litton Systems Inc. Guidance & Control Sys. | Woodland Hills, CA | 37 |
| 94580 | Honeywell Inc. Avionics Div. | Minneapolis, MN | 31 |
| 017N4 | AlliedSignal Inc. Electronic Systems | Teterboro, NJ | 30 |
| 98247 | Canadian Commercial Corp. | Ottawa, ON (Canada) | 30 |
| 73030 | United Technologies Corp. | Windsor Locks, CT | 29 |
| 26269 | U. S. Dynamics Corp. | Amityville, NY | 29 |
| 78286 | Sikorsky Aircraft Corp. | Stratford, CT | 28 |
| 18323 | Westinghouse Electric Corp. | Cockeysville, MD | 27 |
| 08748 | Eldec Corp. | Lynnwood, WA | 24 |
| 03538 | Lockheed Martin Corp. | Syracuse, NY | 23 |
| 70210 | AlliedSignal Inc. | Torrance, CA | 22 |
| 59211 | Parker-Hannifin Corp. Aerospace Group | Irvine, CA | 22 |
| 93835 | Parker-Hannifin Corp. | Kalamazoo, MI | 22 |
| 94987 | Cubic Defense Systems Inc. | San Diego, CA | 21 |
| 26512 | Grumman Aerospace Corp. | Bethpage, NY | 21 |
| 30331 | Concurrent Computer Corp. | Fort Lauderdale, FL | 21 |
| 98897 | Lockheed Martin Corp. | Marietta, GA | 20 |
| 94117 | Lockheed Martin Corp. | Nashua, NH | 20 |
| 35351 | Smiths Industries Aerospace & Defense Sys. | Grand Rapids, MI | 19 |

Appendix B. Contracts With Same Repair Facility (Category A)

| Repair CAGE | Name | Location | No. of Contracts |
|--------------------|--|------------------|-------------------------|
| 99167 | Sundstrand Aerospace | Rockford, IL | 18 |
| 37695 | Hughes Defense Communications Co. | Fort Wayne, IN | 17 |
| 80080 | Litton Systems Inc. Electron Devices Div. | San Carlos, CA | 17 |
| 05991 | ITT Barton | La Puente, CA | 17 |
| 0DNU9 | Applied Data Technology Inc. | San Diego, CA | 16 |
| 81873 | HR Textron Inc. Controls Div. | Valencia, CA | 16 |
| 12436 | GDE Systems Inc. | San Diego, CA | 15 |
| 97499 | Bell Helicopter Textron Inc. | Fort Worth, TX | 15 |
| 34641 | Instrument Specialties Co. Inc. | Eules, TX | 15 |
| 06129 | Raytheon Co. Electromagnetic Systems Div. | Goleta, CA | 15 |
| 96214 | Texas Instruments Inc. Defense Sys. & Elect. | McKinney, TX | 15 |
| 5Y043 | Honeywell Inc. Defense Avionics Sys. Div. | Phoenix, AZ | 15 |
| 90536 | Lockheed Martin Tactical Systems Inc. | Saint Paul, MN | 14 |
| 15280 | Litton Systems Inc. Applied Technology Div. | San Jose, CA | 14 |
| 63005 | Allison Engine Co. Inc. | Indianapolis, IN | 14 |
| 98869 | Howell Instruments Inc. | Fort Worth, TX | 14 |
| 09017 | Whittaker Corp. Electronic Sys. Div. | Simi Valley, CA | 14 |
| 0YR38 | Hewlett-Packard Co. | Clark, NJ | 13 |
| 64547 | AlliedSignal Inc. Aerospace Equipment Sys. | Tucson, AZ | 13 |
| 88236 | Communications and Power Industries Inc. | Beverly, MA | 13 |
| 94697 | Moog Inc. | East Aurora, NY | 13 |
| 19623 | Aerospace Avionics Inc. | Bohemia, NY | 13 |
| 54418 | Miltope Corp. | Hope Hull, AL | 12 |
| 97424 | Ametek Aerospace Products Inc. | Wilmington, MA | 12 |
| 07690 | Lear Astronics Corp. | Santa Monica, CA | 12 |
| 96238 | DNE Technologies Inc. | Wallingford, CT | 12 |
| 97384 | AAI Corp. sub of United Industrial Corp. | Cockeysville, MD | 12 |
| 58078 | Airtronics Inc. | Tucson, AZ | 11 |
| 14482 | Watkins-Johnson Co. | Palo Alto, CA | 11 |
| 62983 | Vickers Inc. Aerospace Marine Defense | Jackson, MS | 11 |
| 11809 | Banner Ind. Inc. Thompson Aircraft Tire | Miami, FL | 11 |

Appendix B. Contracts With Same Repair Facility (Category A)

| Repair CAGE | Name | Location | No. of Contracts |
|--------------------|---|----------------------|-------------------------|
| 88818 | Kearfott Guidance and Navigation Corp. | Wayne, NJ | 11 |
| 26055 | Parker-Hannifin Corp. Gull Electronic Sys. | Smithtown, NY | 10 |
| 80009 | Tektronix Inc. | Beaverton, OR | 10 |
| 05624 | Barber-Colman Co. Aircraft Products Div. | Loves Park, IL | 10 |
| 99193 | AlliedSignal Inc. AlliedSignal Engines | Phoenix, AZ | 10 |
| 09111 | Bearing Inspection Inc. | Santa Fe Springs, CA | 10 |
| 11312 | Teledyne Electronic Technologies Vacuum | Rancho Cordova, CA | 10 |
| 72914 | Grimes Aerospace Co. | Urbana, OH | 9 |
| 73293 | Hughes Aircraft Co. Electron Dynamic Div. | Torrance, CA | 9 |
| 89146 | Litton Systems Inc. Electron Devices Div. | Williamsport, PA | 9 |
| 57057 | NAVCOM Defense Electronics Inc. | El Monte, CA | 9 |
| 76301 | McDonnell Douglas Corp. | Saint Louis, MO | 9 |
| 73842 | The Goodyear Tire and Rubber Co. | Akron, OH | 9 |
| 89944 | Kollsman Inc. | Merrimack, NH | 9 |
| 79172 | Wallace and Tiernan Inc. | Vineland, NJ | 9 |
| 92059 | Kaman Aerospace Corp. | Middletown, CT | 9 |
| 33654 | Howden Fluid Systems Inc. | Goleta, CA | 9 |
| 04939 | Lockheed Martin Corp. | Orlando, FL | 9 |
| 99643 | Vickers Inc. Fluid Control and Actuation Div. | Los Angeles, CA | 9 |
| 29436 | Harris Computer Systems Corp. | Fort Lauderdale, FL | 8 |
| 46175 | Peerless-Winsmith Inc. | Warren, OH | 8 |
| 16331 | Lockheed Martin Corp. | Orlando, FL | 8 |
| 05167 | Pacific Scientific Co. | Duarte, CA | 8 |
| 79318 | Whittaker Corp. Whittaker Controls Div. | North Hollywood, CA | 8 |
| 80249 | Hazeltine Corp. | Greenlawn, NY | 8 |
| 06848 | AlliedSignal Inc. Aerospace Equipment Sys. | South Bend, IN | 8 |
| 07860 | Bogue Electric Mfg. Co. | Paterson, NJ | 8 |
| 09080 | Logus Mfg. Corp. | West Palm Beach, FL | 8 |
| 33322 | Wang Federal Inc. Spares/Supplies Sales | Herndon, VA | 8 |
| 94990 | Motorola Inc. Space & Systems Tech. Group | Scottsdale, AZ | 8 |
| 34860 | Litton Systems Inc. Laser Systems Div. | Apopka, FL | 8 |

Appendix B. Contracts With Same Repair Facility (Category A)

| Repair CAGE | Name | Location | No. of Contracts |
|--------------------|--|----------------------|-------------------------|
| 19062 | Essex Cryogenics of Missouri Inc. | Saint Louis, MO | 8 |
| 99313 | Communications and Power Industries Microwave Power Tube Products | Palo Alto, CA | 8 |
| 58880 | Meggitt Avionics Inc. | Manchester, NH | 8 |
| 5D172 | Litton Systems Inc. Guidance & Control Sys. | Salt Lake City, UT | 8 |
| 12868 | Behlman Electronics Inc. Military Div. | Hauppauge, NY | 8 |
| 59885 | Rosemount Aerospace Inc. | Burnsville, MN | 8 |
| 58320 | National Airmotive Corp. | Oakland, CA | 8 |
| 50958 | Richard Wolf Medical Instruments Corp. | Vernon Hills, IL | 7 |
| 30715 | Sabreliner Corp. | Neosho, MO | 7 |
| 7Y193 | Raytheon Co. Equipment Development Lab. | Marlborough, MA | 7 |
| 31160 | Datum Inc. Bancomm-Timing Div. | Irvine, CA | 7 |
| 12338 | Sunair Electronics Inc. | Fort Lauderdale, FL | 7 |
| 09384 | Sensortronics Inc. CEC Vibrations Products | Covina, CA | 7 |
| 04971 | Rantec Microwave and Electronics Inc. | Calabasas, CA | 7 |
| 28009 | Metrum Inc. | Littleton, CO | 7 |
| 95270 | Skurka Engineering Co. | Camarillo, CA | 7 |
| 8U543 | Lockheed Martin Corp. | Johnson City, NY | 7 |
| 09062 | Signal Technology Corp. Kaltec Operations | Ft. Walton Beach, FL | 7 |
| 0W6H7 | Medial Components | Laguna Niguel, CA | 7 |
| 34984 | Data General Corp. | Westborough, MA | 7 |
| 86360 | Fairchild Space and Defense Corp. | Germantown, MD | 7 |
| 12909 | Cardion Inc. | Woodbury, NY | 7 |
| 58900 | Giga-Tronics Inc. | San Ramon, CA | 7 |
| 03640 | Lockheed Martin Federal Systems Inc. | Owego, NY | 7 |
| 07421 | Interstate Electronics Corp. | Anaheim, CA | 7 |
| 72121 | Vickers Inc. Electromechanical Div. | Los Angeles, CA | 7 |
| 83311 | Simmonds Precision Engine Systems Inc. | Norwich, NY | 6 |
| 27338 | ST Microwave Corp. | Sunnyvale, CA | 6 |
| 27914 | AlliedSignal Inc. Air Transport Avionics | Fort Lauderdale, FL | 6 |
| 33875 | Raytheon E-Systems Inc. | Richardson, TX | 6 |
| 2J622 | SCI Technology Inc., sub of SCI Systems Inc. | Huntsville, AL | 6 |

Appendix B. Contracts With Same Repair Facility (Category A)

| Repair CAGE | Name | Location | No. of Contracts |
|------------------------|---|----------------------|-----------------------------|
| 00752 | AIL Systems Inc., sub of Eaton Corp. | Deer Park, NY | 6 |
| 81039 | GEC-Marconi Aerospace Inc. | Whippany, NJ | 6 |
| 83298 | AlliedSignal Inc. Aerospace Equipment Sys. | Eatontown, NJ | 6 |
| 05157 | Cohu Inc. Electronics Div. | San Diego, CA | 6 |
| 81982 | Crane Co. Hydro-Aire Div. | Burbank, CA | 6 |
| 07639 | Leland Electrosystems Inc. | Vandalia, OH | 6 |
| 82152 | Datron/Transco Inc. | Simi Valley, CA | 6 |
| 19710 | MPC Products Corp. | Skokie, IL | 6 |
| 20886 | Encore Computer Corp. | Fort Lauderdale, FL | 6 |
| 15309 | A and M Instrument Inc. | Manchester, NH | 6 |
| 0K1Y3 | Data General Corp. | Southborough, MA | 6 |
| 96124 | HR Textron Inc. Apco Div. | Pacoima, CA | 6 |
| 94756 | Boeing North American Inc. Autonetics and Missile Systems Div. | Anaheim, CA | 6 |
| 24930 | ITT Industries Inc. ITT Gilfillan Div. | Van Nuys, CA | 6 |
| 0B6J0 | Lockheed Martin/ROLM MIL-SPEC Corp. | San Jose, CA | 6 |
| 51663 | Crane Co. Lear Romec Div. | Elyria, OH | 5 |
| 10112 | Vernitron Corp. Motion Control Group | San Ysidro, CA | 5 |
| 50027 | Flightline Electronics Inc. | Fishers, NY | 5 |
| 94144 | Raytheon Co. Missile Systems Div. | Quincy, MA | 5 |
| 17981 | SCI Systems Inc. | Huntsville, AL | 5 |
| 17863 | Litton Systems Inc. Guid. and Control Sys. | Northridge, CA | 5 |
| 05606 | Lockheed Martin Corp., Lockheed Martin Armament Systems | Burlington, VT | 5 |
| 07148 | Dynamic Controls HS Inc. | Windsor Locks, CT | 5 |
| 10138 | Astronautics Corp. of America | Milwaukee, WI | 5 |
| 99251 | Litton Systems Inc. Life Support Div. | Davenport, IA | 5 |
| 12511 | Simmonds Precision Products Inc. | Cedar Knolls, NJ | 5 |
| 12339 | Metric Systems Corp. | Ft. Walton Beach, FL | 5 |
| 66948 | Harris Corp. Govt. Communication Sys. Div. | Melbourne, FL | 5 |
| 6V542 | Prime Time Clock Shop | Ozark, AL | 5 |
| 11243 | Cosmodyne Inc. | Torrance, CA | 5 |

Appendix B. Contracts With Same Repair Facility (Category A)

| Repair CAGE | Name | Location | No. of Contracts |
|------------------------|--|-------------------|-----------------------------|
| 04984 | Space Corp. Div. of Marmon Motor Co. | Garland, TX | 5 |
| 04320 | IMC Magnetics Corp. Arizona Div. | Tempe, AZ | 5 |
| 56348 | Litton Systems Inc. Solid State Div. | Santa Clara, CA | 5 |
| 54779 | Science Applications Intl. Corp. SAI Tech. | San Diego, CA | 5 |
| 09087 | INFODEX | Wolcott, CT | 5 |
| 99207 | General Electric Co. Aircraft Eng. Bus. Grp. | Lynn, MA | 5 |
| 1K426 | Litton Systems Inc. Litton Special Devices | Springfield, PA | 5 |
| 20418 | Systems and Electronics Inc. Electronic Sys. | Saint Louis, MO | 5 |
| 24113 | General Electric Co. Aviation Service Strotherof Aviation | Arkansas City, KS | 5 |
| 09523 | Parker-Hannifin Corp. Aerospace Group | Andover, OH | 5 |
| 25500 | Lockheed Martin Tactical Systems Inc. | Akron, OH | 5 |
| 98810 | Aerosonic Corp. | Clearwater, FL | 5 |

Appendix C. Contracts for Repair of Items Supplied by Same Contractor (Category B)

The following table shows the number of contracts per CAGE code with at least three contracts. For example, the first line of the table indicates that the data files contain 86 contracts with CAGE "0Y0A6," which were for the repair of items supplied by the same contractor and being repaired by that supplier or another CAGE code in this category.

| Repair CAGE | Name | Location | No. of Contracts |
|----------------|-------------------------------------|----------------------|---------------------|
| 0Y0A6 | Event Systems Support LLC | San Francisco, CA | 86 |
| 2B971 | Chromalloy Gas Turbine Corp. | Oklahoma City, OK | 27 |
| 02750 | Eaton Corp. Pressure Sensors Div. | Bethel, CT | 25 |
| 17475 | Gulf Aerospace Inc. | Oldsmar, FL | 21 |
| 55070 | Lucas Aerospace Inc. | Englewood, NJ | 20 |
| 12763 | Dynalec Corp. | Sodus, NY | 20 |
| 8N802 | United Technologies Corp. | East Hartford, CT | 18 |
| 33827 | GEC-Marconi Avionics Inc. | Norcross, GA | 18 |
| 40089 | Independent Technology Service Inc. | Simi Valley, CA | 14 |
| 32324 | Pacific Electronic Enterprises Inc. | Huntington Beach, CA | 14 |
| 81755 | Lockheed Martin Corp. | Fort Worth, TX | 14 |
| 35012 | Smiths Industries | Clearwater, FL | 13 |
| 07618 | La Barge Inc. Electronics Div. | Tulsa, OK | 12 |
| 5D832 | Raytheon Service Co. | Irvine, CA | 12 |
| 36659 | Lockheed Aeronautical Sys. Co. | Burbank, CA | 11 |
| 94404 | Raytheon Co. Submarine Signal Div. | Portsmouth, RI | 11 |
| 26916 | Northrop Grumman Corp. | Rolling Meadows, IL | 11 |
| 11263 | Orbit Instrument Corp. | Hauppauge, NY | 10 |
| 43999 | Boeing North American Inc. | Seal Beach, CA | 10 |
| 5W432 | California Tube Laboratory | Santa Cruz, CA | 10 |
| 8T088 | Turbine Controls Inc. | Bloomfield, CT | 9 |
| OZB13 | Pratt and Whitney San Antonio Inc. | San Antonio, TX | 9 |

Appendix C. Contracts for Repair of Items Supplied by Same Contractor (Category B)

| Repair CAGE | Name | Location | No. of Contracts |
|--------------------|--|----------------------|-------------------------|
| 09344 | Kaiser Electronics | San Jose, CA | 9 |
| 82577 | Hughes Aircraft Co. | Los Angeles, CA | 8 |
| 0ZE05 | Leica Inc. | Torrance, CA | 8 |
| 89305 | Simmonds Precision Products Inc. | Vergennes, VT | 8 |
| 2L671 | The Gyro House | Auburn, CA | 7 |
| 28287 | Teltron Technologies Inc. | Birdsboro, PA | 7 |
| 62860 | Penn Detroit Diesel Allison Inc. | York Haven, PA | 7 |
| 9S850 | Logistics Services Intl. Inc. | Jacksonville, FL | 6 |
| 28199 | Henschel Inc. | Newburyport, MA | 6 |
| 03956 | Sperry Marine Inc. | Charlottesville, VA | 6 |
| 7R034 | Diesel Injection Sales and Service Inc. | Corpus Christi, TX | 6 |
| 0KA66 | Trans Met Inc. | Cibolo, TX | 6 |
| 51025 | Amplifier Acquisition Corp. | Newbury Park, CA | 6 |
| 15755 | Abbott Electronics Inc. | Los Angeles, CA | 6 |
| 4X685 | Hewlett-Packard Co. | Mountain View, CA | 6 |
| 9R328 | Reliance Electric Industrial Co. | Philadelphia, PA | 5 |
| 2A860 | Johnson and Towers Baltimore Inc. | Baltimore, MD | 5 |
| 0GCL4 | Chrysler Technologies Airborne Sys. Inc. | Waco, TX | 5 |
| 05869 | Hughes Aircraft Co. Naval & Maritime Sys. | Fullerton, CA | 5 |
| 07217 | AlliedSignal Aerospace Canada | Etobicoke, ON (Can.) | 5 |
| 0C916 | Precision Bearing Center Div. of MPB Corp. | West Lebanon, NH | 5 |
| 058R3 | Smiths Industries Aerospace & Defense Sys. | Clearwater, FL | 4 |
| 44639 | AAR Engine Component Services Inc. | Frankfort, NY | 4 |
| 92003 | Parker-Hannifin Corp. | Irvine, CA | 4 |
| 74132 | Nothelfer Winding Laboratories | Trenton, NJ | 4 |
| 4L225 | Praxair Surface Technologies Inc. | Kansas City, MO | 4 |
| 16126 | Tri-Industries Inc. | Terre Haute, IN | 4 |
| 13619 | RFI Corp. Sub of Del Electronics Corp. | Bay Shore, NY | 4 |
| 99971 | Lockheed Martin Corp. | Liverpool, NY | 4 |
| 22624 | Marianna Airmotive Corp. | Cantonment, FL | 4 |
| 26101 | Lamar Electro-Air Corp. | Wellington, KS | 4 |

Appendix C. Contracts for Repair of Items Supplied by Same Contractor (Category B)

| Repair CAGE | Name | Location | No. of Contracts |
|------------------------|---|---------------------|-----------------------------|
| 12536 | Hughes-Treitler Mfg. Corp. | Garden City, NY | 4 |
| 0USU9 | Digicomp Technologies | Newbury Park, CA | 4 |
| 38589 | Martin-Decker Div. of Cooper Ind. Inc. | Cedar Park, TX | 4 |
| 52661 | United Technologies Corp. | West Palm Beach, FL | 4 |
| 55974 | AlliedSignal Inc. | Teterboro, NJ | 4 |
| 0YJ38 | Allison Engine Co. Inc. | Indianapolis, IN | 3 |
| 95402 | General Dynamics Corp. | Avenel, NJ | 3 |
| 99380 | Sierra Networks Inc. Sierracom Div. | Hopkinton, MA | 3 |
| 97953 | Lambda Novatronics Inc. | Pompano Beach, FL | 3 |
| 89513 | Grimes Aerospace Co. | Columbus, OH | 3 |
| 05326 | General Electric Co. | Cincinnati, OH | 3 |
| 77445 | United Technologies Corp. | East Hartford, CT | 3 |
| 9D419 | Tektronix Inc. | Gaithersburg, MD | 3 |
| 0TXM0 | T/MAC Inc. | New Brunswick, NJ | 3 |
| 77245 | Harris Corp. Government Aerospace Sys. Div. | Melbourne, FL | 3 |
| 11447 | Lockheed Martin Corp. | Camden, NJ | 3 |
| 65888 | Gallade Chemical Inc. | Santa Ana, CA | 3 |
| 07395 | Primus Technologies Corp. | Williamsport, PA | 3 |
| 56492 | Vibro-Meter Corp. Diagnostic Sys. Div. | Long Beach, CA | 3 |
| 56400 | Koellmann Gear Corp. | Waldwick, NJ | 3 |
| 01534 | Alliant Techsystems Inc. | Mukilteo, WA | 3 |
| 23163 | Chem-Tronics Inc. Sub of Interlake Co. | El Cajon, CA | 3 |
| 04879 | Arnold Magnetics Corp. | Camarillo, CA | 3 |
| 0AS45 | Service Motor Parts Co. | Montebello, CA | 3 |
| 29732 | Lockheed Martin Aerospace Corp. | Chesapeake, VA | 3 |
| 55744 | Decom Systems Inc. | Carlsbad, CA | 3 |
| 28480 | Hewlett-Packard Co. Corporate HQ | Palo Alto, CA | 3 |
| 20227 | Scientific-Atlanta Inc. San Diego Opns. | San Diego, CA | 3 |
| 08484 | Transtechology Corp. Breeze-Eastern Div. | Union, NJ | 3 |
| 52088 | Lockheed Martin Federal Systems Inc. | Manassas, VA | 3 |
| 4G316 | ED Technologies Inc. | San Antonio, TX | 3 |

Appendix C. Contracts for Repair of Items Supplied by Same Contractor (Category B)

| Repair CAGE | Name | Location | No. of Contracts |
|------------------------|--|-------------------------------|-----------------------------|
| 09205 | Lockheed Martin Aerospace Corp. | Rancho Santa Margarita, CA | 3 |
| 30782 | Litton Systems Inc. Aero Products Div. | Woodland Hills, CA | 3 |
| 19059 | Datametrics Technology Systems Corp. | Woodland Hills, CA | 3 |
| 24039 | Varo Inc. Electronic Systems Div. | Garland, TX | 3 |

Appendix D. Federal Supply Classes With Similar Items (Category C)

For the 3,548 NSNs in Category C, the following table shows each FSC having 10 or more NSNs.

| FSC No. | Description | No. of NSNs |
|---------|---|-------------|
| 5998 | Electrical and Electronic Assemblies; Boards, Cards, and Associated Hardware | 729 |
| 5999 | Miscellaneous Electrical and Electronic Components | 196 |
| 7025 | ADP Input/Output and Storage Devices | 188 |
| 6130 | Converters, Electrical, Nonrotating | 165 |
| 5895 | Miscellaneous Communication Equipment | 145 |
| 4320 | Power and Hand Pumps | 119 |
| 4820 | Valves, Nonpowered | 100 |
| 6625 | Electrical and Electronic Properties Measuring and Testing Instruments | 80 |
| 1560 | Airframe Structural Components | 71 |
| 4920 | Aircraft Maintenance and Repair Shop Specialized Equipment | 68 |
| 1377 | Cartridge and Propellant Actuated Devices and Components | 49 |
| 1680 | Miscellaneous Aircraft Accessories and Components | 48 |
| 5820 | Radio and Television Communications Equipment, Except Airborne | 46 |
| 4810 | Valves, Powered | 46 |
| 5845 | Underwater Sound Equipment | 45 |
| 5985 | Antennas, Waveguides, and Related Equipment | 45 |
| 5865 | Electronic Countermeasures, Counter-Countermeasures and Quick Reaction Capability | 39 |
| 7021 | ADP Central Processing Unit (CPU, Computer), Digital | 39 |
| 6650 | Optical Instruments, Test Equipment, Components and Accessories | 38 |
| 1430 | Guided Missile Remote Control Systems | 38 |
| 6110 | Electrical Control Equipment | 34 |
| 6685 | Pressure, Temperature, and Humidity Measuring and Controlling Instruments | 34 |
| 3120 | Bearings, Plain, Unmounted | 32 |
| 2915 | Engine Fuel System Components, Aircraft | 31 |
| 1650 | Aircraft Hydraulic, Vacuum, and De-icing System Components | 30 |
| 5840 | Radar Equipment, Except Airborne | 29 |
| 4310 | Compressors and Vacuum Pumps | 28 |
| 1270 | Aircraft Gunnery Fire Control Components | 28 |
| 6150 | Miscellaneous Electrical Power and Distribution Equipment | 27 |
| 2835 | Gas Turbines and Jet Engines, Except Aircraft; and Components | 24 |
| 1285 | Fire Control Radar Equipment, Except Airborne | 24 |
| 6105 | Motors, Electrical | 23 |
| 2825 | Steam Turbines and Components | 23 |

Appendix D. Federal Supply Classes With Similar Items (Category C)

| FSC No. | Description | No. of NSNs |
|---------|--|-------------|
| 6605 | Navigational Instruments | 23 |
| 6610 | Flight Instruments | 22 |
| 6115 | Generators and Generator Sets, Electrical | 19 |
| 1190 | Specialized Test and Handling Equipment, Nuclear-Ordnance | 19 |
| 1420 | Guided Missile Components | 19 |
| 5841 | Radar Equipment, Airborne | 19 |
| 5963 | Electronic Modules | 18 |
| 2010 | Ship and Boat Propulsion Components | 17 |
| 3110 | Bearings, Antifriction, Unmounted | 16 |
| 6660 | Meteorological Instruments and Apparatus | 16 |
| 3655 | Gas Generating and Dispensing Systems, Fixed or Mobile | 15 |
| 5960 | Electron Tubes and Associated Hardware | 15 |
| 3040 | Miscellaneous Power Transmission Equipment | 15 |
| 2910 | Engine Fuel System Components, Non-Aircraft | 15 |
| 5925 | Circuit Breakers | 14 |
| 6695 | Combination and Miscellaneous Instruments | 14 |
| 2040 | Marine Hardware and Hull Items | 14 |
| 5915 | Filters and Networks | 14 |
| 5996 | Amplifier Assembly/Subassembly and Various Components | 13 |
| 6930 | Operation Training Devices | 13 |
| 1240 | Optical Sighting and Ranging Equipment | 13 |
| 5995 | Cable, Cord, and Wire Assemblies: Communication Equipment | 13 |
| 2815 | Diesel Engines and Components | 13 |
| 5835 | Sound Recording and Reproducing Equipment | 13 |
| 1440 | Launchers, Guided Missile | 13 |
| 1660 | Aircraft Air Conditioning, Heating, and Pressurizing Equipment | 12 |
| 5955 | Oscillators and Piezoelectric Crystals | 12 |
| 1115 | Nuclear Warheads and Warhead Sections | 12 |
| 2990 | Miscellaneous Engine Accessories, Non-Aircraft | 12 |
| 2840 | Gas Turbine and Jet Engines, Aircraft; and Components | 12 |
| 5330 | Packing and Gasket Materials | 11 |
| 4140 | Fans, Air Circulators, and Blower Equipment | 10 |
| 1135 | Fusing and Firing Devices, Nuclear Ordnance | 10 |
| 3010 | Torque Converters and Speed Changers | 10 |
| 6680 | Liquid and Gas Flow, Liquid Level, and Mechanical Motion Measuring Instruments | 10 |
| 5805 | Telephone and Telegraph Equipment | 10 |
| 6920 | Armament Training Devices | 10 |
| 5975 | Electrical Hardware and Supplies | 10 |

Appendix E. Definitions of Key Terms

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|--------------------------------|---|
| Contract Administration | Contract administration refers to the wide variety of accounting, clerical, engineering, and legal functions necessary for successful execution of awarded contracts. Specific functions include corrections of errors or omissions, cost analyses, engineering surveillance to ensure compliance with contract specifications (such as cost, schedule, or technical performance), processing and approval of payments, and review of reporting requirements. |
| Contract Maintenance | Any maintenance performed under contract by a commercial organization, including original manufacturer. |
| Depot Maintenance | Maintenance performed by designated depot maintenance activities using more extensive shop facilities and equipment, as well as personnel of higher technical skills, than at lower levels of maintenance (organizational and intermediate). Depot maintenance normally consists of inspection, test, repair, modification, alteration, modernization, conversion, and rebuilding of parts on assemblies, subassemblies, components, equipment end items, and weapon systems. |
| Inter-Service | Involving more than one Service. |
| Intra-Service | Involving more than one activity but within the same Service. |
| Joint Contracting | Maintenance performed by a contractor for more than one DoD component under one contract that is administered by one component. |
| Organic Maintenance | Maintenance performed by a military department under military control using Government-owned or controlled facilities, repair parts, spares, test equipment, tools, and civil service and military personnel. |
| Secondary Items | Reparable components, minor end items, and repair parts. |

Appendix F. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition and Technology
Deputy Under Secretary of Defense (Acquisition Reform)
Deputy Under Secretary of Defense for Logistics
Director of Defense Procurement
Director, Defense Logistics Studies Information Exchange
Under Secretary of Defense (Comptroller)
Deputy Chief Financial Officer
Deputy Comptroller (Program/Budget)
Assistant Secretary of Defense (Public Affairs)

Department of the Army

Deputy Chief of Staff for Logistics
Auditor General, Department of the Army
Commander, Army Materiel Command

Department of the Navy

Assistant Secretary of the Navy (Financial Management and Comptroller)
Deputy Chief of Staff for Installations and Logistics, Headquarters, Marine Corps
Deputy Chief of Naval Operations (Logistics)
Auditor General, Department of the Navy
Director, Dudley Knox Library, Naval Postgraduate School

Department of the Air Force

Deputy Chief of Staff for Logistics
Assistant Secretary of the Air Force (Financial Management and Comptroller)
Commander, Air Force Materiel Command
Auditor General, Department of the Air Force

Other Defense Organizations

Director, Defense Contract Audit Agency
Director, Defense Logistics Agency
Director, National Security Agency
Inspector General, National Security Agency
Inspector General, Defense Intelligence Agency

Non-Defense Federal Organizations and Individuals

Office of Management and Budget
General Accounting Office
Technical Information Center, National Security and International Affairs Division

Chairman and ranking minority member of each of the following Congressional committees and subcommittees:

Senate Committee on Appropriations
Senate Subcommittee on Defense, Committee on Appropriations
Senate Committee on Armed Services
Senate Committee on Governmental Affairs
House Committee on Appropriations
House Subcommittee on National Security, Committee on Appropriations
House Committee on Government Reform and Oversight
House Subcommittee on Government Management, Information, and Technology,
Committee on Government Reform and Oversight
House Subcommittee on National Security, International Affairs, and Criminal
Justice, Committee on Government Reform and Oversight
House Committee on National Security

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