United States General Accounting Office

GAO

Report to Congressional Committees

October 2001

DEFENSE LOGISTICS

Actions Needed to Overcome Capability Gaps in the Public Depot System

G A O

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GAO-02-105

Contents

Letter 1

Results in Brief 2
Background 5
Weaknesses in Core Policy and Implementation Leave Little Assurance That Capabilities Will Be Developed to Support Wartime Requirements 12
Investments In Facilities, Equipment, and Personnel Have Been Insufficient 26
Policy Gaps Could Lead to Shortfalls in Non-Depot Maintenance Logistics Capabilities 34
Conclusions 35
Recommendations for Executive Action 36
Matter for Congressional Consideration 37
Agency Comments and Our Evaluation 37

Appendix I **DOD Initiatives That Could Affect Core and Core-Related Processes** 39

Appendix II **Scope and Methodology** 42

Appendix III **GAO Contacts and Staff Acknowledgments** 44

GAO Contacts 44
Acknowledgments 44

Appendix IV **Comments by the Department of Defense** 45

Related GAO Reports 49

Table

Table 1: Retirement Eligibility Status and Average Age of the Total Civilian Depot Maintenance Work Force 29

Figures

Figure 1: Workload and Workforce Trends in Military Maintenance Depots 6
Figure 2: Computed Core Work Requirements for Depot Maintenance 11
Figure 3: Service Use of "Like" Workloads to Assume a Repair Capability 17
Figure 4: Capital Investments in Maintenance Depots 27

Abbreviations

DOD Department of Defense
OMB Office of Management and Budget

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United States General Accounting Office
Washington, DC 20548

October 12, 2001

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

The Honorable Bob Stump
Chairman
The Honorable Ike Skelton
Ranking Minority Member
Committee on Armed Services
House of Representatives

In recent years the Department of Defense (DOD) has implemented a policy change placing increased reliance on defense contractors for overhaul and maintenance and related logistics activities. This policy initiative has generated questions from the Congress about the capability and future viability of existing in-house logistics activities, particularly that of the military depots that have traditionally performed the largest share of the Department's depot maintenance work. DOD is required under 10 U.S.C. 2464 to identify and maintain within government-owned and -operated facilities a core logistics capability, including the equipment, personnel, and technical competence required to maintain weapon systems identified as necessary for national defense emergencies and contingencies. Specifically, the Secretary of Defense is to identify the workloads required to maintain the core logistics capabilities and assign to government facilities sufficient peacetime workload to ensure cost efficiency and technical competence, while preserving capabilities necessary to fully respond to national defense emergencies and contingencies.

Your committees have expressed concerns about the need to continue the performance of mission-essential, or core, maintenance activities in military depots and the long-term viability of military industrial facilities in light of DOD's increased reliance on the private sector to accomplish logistics support activities such as the maintenance of weapon systems.

The Report of the House Committee on Armed Services, Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001 (2001 Defense Authorization Act),[1] directed that we review various issues related to the Department's logistics support planning and capabilities. As agreed with your offices, in this report we are addressing the extent to which (1) core depot maintenance policy and practices will result in military depots being able to perform core work in support of national defense emergencies and contingencies; (2) investments in facilities, equipment, and human capital are adequate to support the long-term viability of military maintenance depots; and (3) non-maintenance core logistics capabilities have been identified.

In November 1993, the Department approved a standard methodology for the military services' use in computing core depot maintenance requirements[2] in terms of the number of direct labor hours required to accomplish the identified work and relating the core requirements to its war planning scenarios.[3] Direct labor hours represent a measurement of output core capabilities generated by using such input factors as facilities, equipment, and trained personnel. The direct labor hours are associated with capabilities for specific weapons identified by the various war plans. The standard methodology was designed to identify the weapon systems tied to the various war plans and determine peacetime depot maintenance workloads that would provide the capability for maintaining those systems in wartime. The Department recently completed the Quadrennial Defense Review (QDR), a strategic review of its defense goals, objectives, and capabilities. Implementation of the QDR could influence the way DOD approaches its future management of its core logistics capabilities.

Results in Brief

The Department's core depot maintenance policy is not comprehensive and the policy and implementing procedures and practices provide little assurance that core maintenance capabilities are being developed as needed to support future national defense emergencies and contingencies. Several factors preclude this assurance. First, the existing policy is not comprehensive. It does not provide for a forward look at new weapon

[1] Report 106-616, May 12, 2000, pp. 338-9.

[2] Depot maintenance as defined in 10 USC 2460 is the material maintenance and repair requiring the overhaul, upgrading, or rebuilding of parts, assemblies, or subassemblies, and the testing and reclamation of equipment as necessary, regardless of the source of funds or the location at which the maintenance or repair is performed.

[3] This methodology was revised in November 1996.

systems and associated future maintenance capability requirements. Nor does it link to source-of-repair policies and procedures for new and upgraded systems. As a result, the Department has not undertaken the development of a strategy to add the capabilities that will be needed in the public depot system to repair the weapon systems that will replace the ones that are being retired and now dominate the current core workload. The lack of such a strategy limits the timely identification and acquisition of equipment, facilities, and technical skills needed in the workforce to meet future needs. The advance planning needed to meet future needs is critical because past experience has shown that it can take up to 5 years to establish a new in-house capability.

Second, the various procedures and practices being used by the services to implement the existing policy are also affecting the establishment of core capability. For example, the services' use of "like" workloads to satisfy the core requirements and risk assessments to reduce core capability have the impact of further reducing the amount of core work performed in DOD facilities on such major systems as the C-17 and F-117 that support contingency plans. To illustrate, the Air Force reduced its core capability for airframes by 66 percent through the risk assessment process. Additionally, actual direct labor hours on workloads assigned to public depots are less than called for in core capability work requirements and because the core process is not linked to DOD's planning, programming and budgeting system or to DOD's strategic planning process, funding shortfalls continue to affect the Department's ability to establish and retain required core capability. The net effect of these policy and practice deficiencies is twofold. It limits the extent to which new technologies are introduced into the depot system and reduces training opportunities on core workload, resulting in diminished depot capabilities, including facilities, equipment, and trained personnel. The Office of the Secretary of Defense and each service, to varying extents, have recently begun efforts to improve core and core-related processes, but the results of these initiatives are uncertain.

Investments in facilities, equipment, and human capital have not been sufficient in recent years to ensure the long-term viability of the services' depots. DOD's downsizing of its depot infrastructure and workforce since the end of the Cold War was done without sound strategic planning. Because of the shortcoming in core policy, the manner in which the services have implemented the existing policy and the lack of investment in capital equipment and sound human capital succession planning, the capabilities remaining in the depot system are not setting the foundation to meet future repair needs. Today's military depot capability is primarily

in the repair of older systems and equipment, not new systems. At the same time, the average age of the depot worker is 46, with about one-third of the depot workforce eligible to retire within the next five years. Only recently has the Department begun to consider changes that could address these deficiencies, but it is unclear to what extent changes will be implemented, since the Department continues to express a preference for outsourcing maintenance and other logistics activities. Further, the Department continues to lack a sound policy and plan to provide for the development of facilities, equipment, and human capital to meet future depot core requirements. Before DOD can know the magnitude of the challenge of revitalizing its depot facilities and equipment and its depot workforce, it must first know what its future workloads will be; what facility, equipment, and technical capability improvements will be required to perform that work; and what personnel changes will be needed to respond to retirements and workload changes. Since the services have not yet conducted an assessment to enable the identification of future requirements in sufficient detail to provide a baseline for acquiring needed resources, they are behind in identifying solutions and required resources to implement them.

The Department has not established policies or processes for identifying non-maintenance core logistics capabilities for activities such as supply support, engineering, and transportation. Whether this is required by statute has been the subject of debate. Resolving this policy issue is becoming more important as the Department increases its outsourcing and develops new strategies to rely on the private sector to perform many logistical support activities. Without well-defined policy and procedures for identifying core requirements for other critical logistic areas, the Department will not be in a position to ensure that it will have the needed capabilities for the logistics system to support our essential military weapons and equipment in an emergency.

This report contains a number of recommendations for executive action designed to improve the Department's criteria and tools for managing and overseeing the development of core capabilities in its depots and other logistics activities. In commenting on a draft of this report, the Department concurred with our recommendations to improve core depot maintenance policies and procedures and to develop strategic and implementation plans for maintenance depots. The Department did not concur with our recommendation to develop policies to identify core capabilities for non-maintenance logistics activities, stating that it has not identified any core logistics capabilities beyond those associated with depot maintenance and repair and sees no need to do so. As a result, we added a matter for

congressional consideration in the final report, suggesting that the Congress may want to review the coverage of 10 U.S.C. 2464 and, if deemed appropriate, clarify the law.

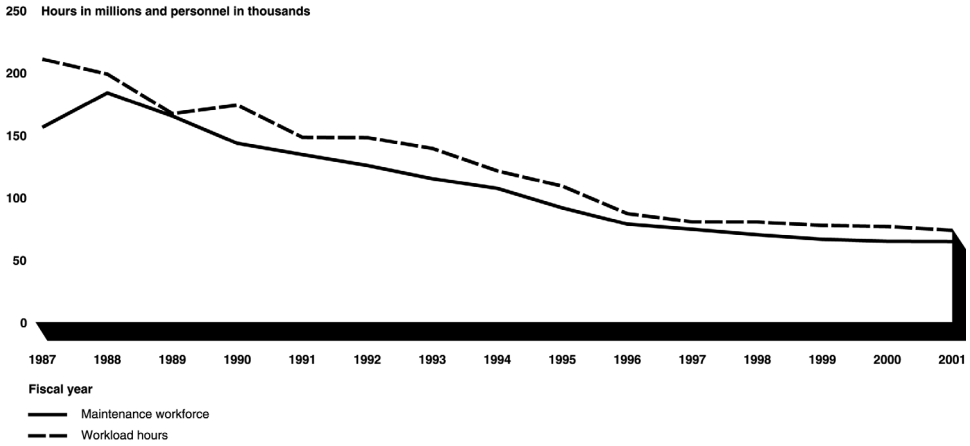
Background

In recent years, Congress and DOD have had an ongoing debate concerning core depot maintenance capabilities and the work needed to support these capabilities; the role of military depots; and the size, composition, and allocation of depot maintenance work between the public and private sectors. Since the mid-1990s, DOD policy and advisory groups have called for contracting with the private sector for a greater share of the Department's logistics support work, including depot maintenance, and related activities such as supply support, engineering, and transportation. An integral part of the policy shift is the debate over how DOD identifies its core logistics capabilities that are to be performed by federal employees in federal facilities. The Deputy Under Secretary of Defense for Acquisition, Technology, and Logistics is responsible for maintenance issues, including core. We recently testified on core capabilities, DOD management of the depot system, and related issues.[4]

DOD estimates that it will spend about one-third of its $297 billion budget for fiscal year 2001 on logistics support activities at military maintenance, supply management, engineering, distribution, and transportation activities and at thousands of contractor locations. As a result of force structure reductions, depot closures under the base realignment and closure process in fiscal years 1988 to 2001, and DOD's desire to place greater reliance on the private sector for the performance of depot maintenance, the number of "major" depots (those employing more than 400 persons) was halved from 38 to 19. During this same period, the total amount of work (measured in direct labor hours) accomplished at the military depots was cut in half and the depot maintenance workforce was reduced by about three-fifths (from 156,000 in fiscal year 1987 to about 64,500 in fiscal year 2001) as shown in figure 1. At the same time, annual funding for contracted depot maintenance work has increased by 90 percent.

[4] *Defense Maintenance: Sustaining Readiness Support Capabilities Requires a Comprehensive Plan* (GAO/01-533T, Mar. 23, 2001).

Figure 1: Workload and Workforce Trends in Military Maintenance Depots



Source: DOD.

Overview of Core and the Depot Maintenance Core Methodology

The provisions of 10 U.S.C. 2464 concerning the identification and maintenance of a core logistics capability and DOD implementing guidance are aimed at ensuring that repair capabilities will be available to meet the military needs should a national defense emergency or contingency occur. The concept of core work is not unique to DOD. However, the term gained increased importance in its relationship to military depots in the 1980s and 1990s. The concept of core and the identification of core capabilities for depot maintenance began in the 1980s; and until the early 1990s, each of the services used its own processes for determining core workloads needed to support the identified depot maintenance capabilities.

The Core Concept as Used in the Private Sector and DOD

The concept of core is one that has usage in the private sector and in the government with respect to decisions over whether support functions might best be provided in-house or outsourced to contractors. In recent years, as private sector firms have approached decisions on whether or not to outsource various activities or functions, they first evaluate the business to identify those activities that are critical to the performance of the mission of the business and which the owners or managers believe they should perform in-house with workers in their employment. These "core" activities are not evaluated for contracting out. Remaining activities are studied to determine if in-house performance can be improved and/or costs can be reduced. The results of this assessment are compared with offers from external businesses. The criteria for outsourcing would

generally be that the external business would provide these non-core activities for less cost and/or would provide improved capability or better service than can be provided using internal resources. Essential to an understanding of how private businesses use this concept is the fact that decisions over what is core is a somewhat subjective determination, one that is not absolute. What one business considers core and not subject to contracting out, another business might identify as a candidate for outsourcing. For example, Disney World retains as company employees the maintenance workers who keep their rides functioning at a high readiness condition while another recreation facility might decide to contract out the responsibility for equipment maintenance.

Within the government, the concept of "core" and a related concept of "inherently governmental" are a key part of the government's policy regarding what activities it should perform with federal employees and what activities the private sector should perform. Office of Management and Budget (OMB) Circular A-76, which was first adopted in 1966, sets forth the general government policy that federal agencies are to obtain commercially available goods and services from the private sector when it is cost-effective to do so.[5] A commercial activity is one that is performed by a federal agency and that provides a product or service, such as base operating support or payroll, that could be obtained from a commercial source. The handbook implementing A-76 provides the procedures for competitively determining whether commercial activities government agencies are currently performing should continue to be done in-house (or by another federal agency) or whether they should be contracted to the private sector.

At the outset, inherently governmental activities—those that are so intimately related to the exercise of the public interest as to mandate performance by federal employees[6]—are reserved for government

[5] DOD has annually compiled an inventory of commercial functions and activities performed in-house, in compliance with OMB Circular A-76. These inventories are important as DOD has sought in recent years to identify commercial activities involving thousands of positions that could be subject to competition to determine whether it would be more cost effective to maintain the activities in-house or contract with the private sector for their performance. Since 2000 these inventories have been maintained under the Federal Activities Inventory Reform Act of 1998 (31 U.S.C. 501 note), which directs agencies to develop annual inventories of their positions that are not inherently governmental.

[6] Federal Activities Inventory Reform Act, section 3 (31 U.S.C. 501 note).

performance. These activities are thus in a sense "core" and outside the coverage of A-76. The core concept appears again within the universe of commercial services covered by A-76. The circular exempts from its cost comparison provisions activities that make up an agency's "core capability." Thus, under the circular, the government will retain a minimum core capability of specialized scientific or technical in-house employees necessary to fulfill an agency's mission responsibilities or to meet emergency requirements.[7] Again, these activities are reserved for government performance. While the term "inherently governmental" is defined in statute and in the circular and the term "core" is defined in the circular, agency officials exercise broad discretion in applying them to agency functions. Depot maintenance workloads valued at $3 million or more are exempt from the A-76 process by 10 U.S.C. 2469.[8]

The use of the A-76 process in DOD has proven to be controversial with concerns often expressed about the fairness of the process and of the cost comparisons between the public and private sectors. Section 852 of the 2001 Defense Authorization Act provided for a panel of experts to be convened by the Comptroller General to review process and procedures governing the transfer of commercial activities from government personnel to the private sector. The panel is required to report its findings and recommendations to the Congress by May 1, 2002.

Legislation was enacted in 1984 that sought to add clarity to the meaning of "core" as it applies to logistics activities involving military facilities.[9] The provision, codified at 10 U.S.C. 2464, provides for a concept of core to be applied to DOD logistics activities. Under the current provision the Secretary of Defense is required to identify and maintain a "core logistics capability" that is government-owned and operated to ensure the existence of a ready and controlled source of technical competence and resources so that the military can effectively and timely respond to mobilizations, national defense emergencies and contingencies. The capabilities are to include those necessary to maintain and repair the weapon systems and equipment that are identified by the Secretary in consultation with the Joint Chiefs of Staff as necessary to meet the nation's military needs.

[7] To achieve a given in-house level of performance, a government activity may use contract labor to support its in-house capability.

[8] Under the statute, the Department is required to use public private competitions if it wishes to convert such workloads to private sector performance.

[9] Department of Defense Authorization Act, 1985, P.L. 98-525 (1984).

Further, the Secretary is to identify the workloads required to maintain the core capabilities and to require their performance in government facilities. Finally, the Secretary is to assign these facilities sufficient workloads to ensure peacetime cost efficiency and technical competencies and surge capacity and reconstitution capabilities to support our military strategic and contingency plans.

In addition to the 10 U.S.C. 2464 requirements described above, 10 U.S.C. 2466 specifies that no more than 50 percent of the funds made available for depot maintenance may be spent for private sector performance. This sets aside 50 percent of the funding for public-sector performance of these workloads in essence establishing a minimum public-sector core for depot maintenance. Before the 1997 amendment, private-sector performance was limited to no more than 40 percent.[10] The trend in DOD in recent years has been toward increasing reliance on the private sector for depot maintenance work and increasing reliance on original equipment manufacturers for long-term logistics support.

Depot Maintenance Core Methodology

In November 1993, the Office of the Deputy Under Secretary of Defense for Logistics outlined a standard multi-step method for determining core requirements and directed the services to use this method in computing biennial core requirements. In 1996, the core methodology was revised to include (1) an assessment of the risk involved in reducing the core capability requirement as a result of having maintenance capability in the private sector and (2) the use of a best-value comparison approach for assigning non-core work to the public and private sectors.

The current core methodology provides a computational framework for quantifying core depot maintenance capabilities and the workload needed to sustain these capabilities. It includes three general processes:

- The identification of the numbers and types of weapon systems required to support the Joint Chiefs of Staff's wartime planning scenarios;
- The computation of depot maintenance core work requirements measured in direct labor hours to support the weapon systems' expected wartime operations as identified in the war planning scenarios; and

[10] National Defense Authorization Act for Fiscal Year 1998, P.L.105-85 (1997), section 337.

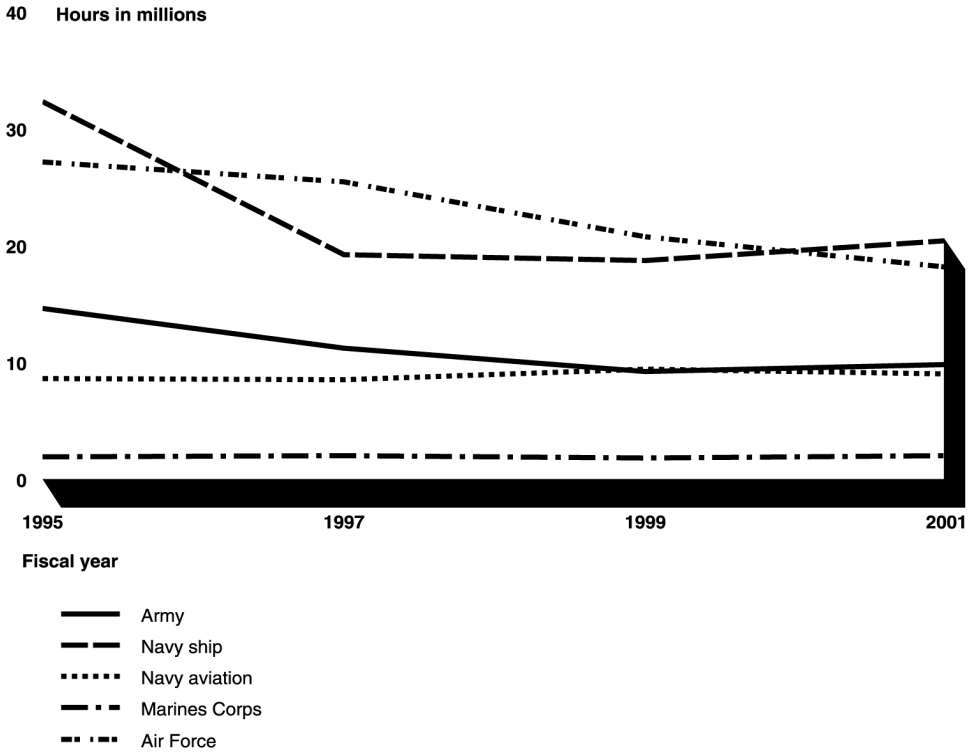
- The determination of industrial capabilities (including the associated personnel, technical skills, facilities, and equipment) that would be needed to accomplish the direct labor hours identified above that is generated from the planning scenarios. That determination is adjusted to translate those capabilities into peacetime workloads needed to support them. These peacetime workloads represent the projected core work requirements for the next program year in terms of direct labor hours. For example, the estimate made in fiscal year 2000 projected the core requirements for fiscal year 2001.

To conclude the process, the services then identify specific repair workloads and allocate the core work hours needed to accomplish the maintenance work at the public depots that will be used to support the core capabilities.

During the latter part of the 1990s, DOD made significant changes in specific maintenance workloads it identified as supporting core capabilities. For example, in 1996 the Air Force privatized in place work on aircraft and missile inertial guidance and navigation systems performed at the Aerospace Guidance and Metrology Center in Newark, Ohio. Prior to closure of this depot, the workload—about 900,000 hours annually—had been identified as necessary to support core capabilities. Workload at the Sacramento Air Logistics Center, which next to the Newark Depot had the Air Force's highest percentage of core workload relative to total workload, was reclassified as non-core work when the center was to be closed. Similarly, maintenance of the Army's tactical wheeled vehicles had always been considered core work, with over 1 million hours of work performed in an Army depot. But after the closure of the Army's truck depot at Tooele, Utah, this work was contracted out; and in 1996 it was categorized as non-core work. More recently the Army has again categorized about 26,000 direct labor hours of truck maintenance work as core support work—less than 1 percent of the workload that the Army identified as necessary to support its core capabilities.

Figure 2 shows the services' biennial computations of depot maintenance core work requirements in direct labor hours for fiscal years 1995-2001. The reported combined core work requirements for all the military services declined by about 30 percent over that period. The Navy aviation and the Marine Corps support work stayed relatively constant while the Army's declined by 33 percent, the Air Force's declined by 33 percent, and the Navy ship requirement declined by 37 percent.

Figure 2: Computed Core Work Requirements for Depot Maintenance



Note: Navy Ship includes the Naval Warfare Centers and the Space and Naval Warfare Systems Command.

Source: DOD.

Figure 2 shows the computed core work requirements for each of the services in labor hours. As discussed later in this report, the existing policy does not provide information about future core capability requirements. Further, the work actually performed in military depots may be different than the work identified by the core process since a separate process is used for assigning maintenance workloads to the depots or to private sector facilities.

Source-of-Repair Process

A key factor influencing what workloads are actually assigned to military depots and to the private sector is the military services' source-of-repair process. Departmental policy[11] prescribes a process for determining how new and modified weapon systems are to be supported. The acquisition program guidance provides that within statutory limitations, support concepts for new and modified systems shall maximize the use of contractor provided, long-term, total life-cycle logistics support that combines depot-level maintenance for non-core-related workload along with materiel management functions. The maintenance guidance prescribes a source-of-repair decision process designed to determine whether new and upgraded weapon systems and subsystems should be repaired in military depots or contractor facilities. This guidance provides that repair decisions should be justified through rigorous, comprehensive business case analyses that consider the relative costs of public and private support options, mission essentiality, existing public and private industrial capabilities, and required core capabilities. The source-of-repair process is also supposed to consider workload allocation requirements specified by 10 U.S.C. 2466 that not more than 50 percent of annual depot maintenance funding made available to each military department be used for private sector performance.

Weaknesses in Core Policy and Implementation Leave Little Assurance That Capabilities Will Be Developed to Support Wartime Requirements

The Department's core depot maintenance capabilities policy and related implementation procedures and practices provide little assurance that core maintenance capabilities are being developed to support future national defense emergencies and contingencies. Much of the current core workload supports systems that are soon to retire; however, the core policy is not comprehensive in that it does not provide for a forward look at new weapon systems that will replace the ones that are being retired and at associated future maintenance capabilities that will likely be identified as needed to repair those systems. Further, the core policy is not linked to the department's source-of-repair policy and processes. These policy shortfalls limit the timely identification of equipment, facilities, and workforce technical skills needed to establish and retain future core capabilities. Advance planning for replacement of retiring systems and

[11] DOD 5000.2-R, "Mandatory Procedures for Major Defense Acquisition Programs and Major Automated Information System Acquisition Programs," provides that the program manager develop a support strategy for weapon systems, including supply and maintenance. This regulation recognizes that 10 U.S.C. 2464 requires DOD to retain core capabilities in the public depots. DOD Directive 4151.18, "Maintenance of Military Materiel" prescribes the source-of-repair requirement. The services have developed implementing instructions.

introduction of new systems and technologies into the depots is critical because it can take up to 5 years or more to establish a new in-house capability.

Further compounding the future core capabilities concerns are various core policy implementation procedures and practices that also affect the establishment of core capability. For example, services are using, to varying degrees, concepts such as like workloads and risk assessments that have the impact of further reducing the amount of core workloads that are actually performed on systems such as the C-17 that support contingency plans. These varying practices affect both the quantification of core requirements and the identification of workloads used to support core capabilities. They may also preclude defense managers or the Congress from assessing the extent to which overall core policy objectives are being met. The net effect of these practices is to reduce the amount of new repair technology being introduced into the military depots. Also, actual direct labor hours on workloads assigned to public depots are less than called for in identified core support work requirements and the need to support core capabilities is not adequately considered in service source-of-repair decisions on new and upgraded systems. Both of these situations further negatively impact the development of future core capabilities by reducing the amount of workforce training and again decreasing the extent to which new repair technologies are introduced to the depot. It is unclear to what extent recent initiatives to improve core and core-related policy, procedures, and practices will be successful.

Policy Is Not Comprehensive and Does Not Adequately Consider Future Capability and Technology Needs

The Department's core depot maintenance policy is not comprehensive in that it does not provide for a forward look at new weapon systems and associated future maintenance requirements and is not linked to the source-of-repair process. Thus, the policy for identifying core capabilities and support workloads does not plan for the development of future core capabilities because it excludes consideration of systems that are being developed or are in the early stages of being introduced into the forces. The process computes core work requirements biennially based on fielded weapon systems identified in defense warplanning scenarios.

Core Policy Does Not Require Forward Look

The core policy does not require the consideration of depot maintenance capabilities for developmental systems and systems in early production since these systems are not yet identified in defense war plans or are identified in small numbers. As a result, the determination process does not consider workloads that will be needed to support future core capabilities that would result from new systems being fielded and the associated repair technologies, methods, and equipment. Also, expected

decreases in the core workload supporting systems that are soon to retire and changes from in-house to contractor support on replacement or upgraded systems are not being adequately considered. If the services do not plan for the retiring systems' replacements in the military depot system, support for future core capabilities and the economic viability of the depots will be affected.

The Navy's consideration of core support work related to its helicopter fleet illustrates how future capability needs are not being taken into account. Maintenance and repair on the H-46 utility helicopter currently provides much of the core support workload at the Navy's Cherry Point depot. The H-46 is to be phased out of the inventory and replaced by the V-22 tilt rotor aircraft. The Cherry Point aviation depot accomplishes about 600,000 hours of work annually on the H-46, which represented about 15 percent of that depot's entire workload in fiscal year 2000. However, as the H-46s are retired, depot officials expect that workload to dwindle to zero by fiscal year 2012. Navy officials have decided that the V-22 engine will be supported commercially and are evaluating plans for all other V-22 support. Officials told us that they were considering outsourcing some component workloads, originally identified as requiring a core capability, in concert with current DOD policy preferences for outsourcing depot maintenance activities. While Cherry Point's core capability position looks favorable today, the process does not take into consideration the expected loss of H-46 work. Similarly, as the Air Force's C-141 cargo aircraft is being phased out of the inventory, the core methodology has provided for accomplishing little support work for the new generation C-17 cargo aircraft in military depots.[12]

Consideration of new and replacement workloads is important because of the advance planning time needed to establish an in-house capability. In some cases, it may take 5 years or more to establish this capability. For example, a depot business planner estimated that about 5 years would be needed from the time the core capability work requirement was first identified to fund, design, and build a C-5 painting facility, assuming that all went according to plan. Funding availability, priorities of this project relative to others, external events, and other factors could slow the

[12] The Air Force adopted a support strategy for the C-17 called flexible sustainment that relies on the contractor for logistics support activities for an extended period of time. As with the V-22, this strategy supports the DOD goal of relying more on the private sector. The Air Force support plan provides for making final source of repair decisions on the C-17 in 2003.

acquisition of support resources. Timeframes for acquiring capabilities that are identified as core would typically be longer than this if the depot was not already formally assigned the workload.

Core Policy Not Linked to Source-of-Repair Process

Existing core policy is not directly linked to the source-of-repair decision process for new systems and major system upgrades, which negatively impacts the development of core capabilities. According to departmental and service policies, consideration of the need to support core capabilities is supposed to be a major factor in planning for life-cycle sustainment and making decisions on the source for the repair of new and upgraded weapon systems. Our review of recent and ongoing source-of-repair decisions, however, found that core capabilities are considered inconsistently, if at all, in many of the decisions on new systems and upgrades. The lack of linkage between these two processes contributes to the decline of future repair capability for critical mission-essential systems.

In both 1998 and 1996, we reported that DOD's new policy for determining source of repair for weapon systems had weaknesses that could impact the retention of core logistics capabilities that the military is supposed to identify and maintain to ensure the support of mission-essential weapon systems.[13] We determined that (1) acquisition program officials had not followed the services' approved processes for making source-of-repair decisions, (2) information concerning core capabilities and other input from logistics officials were not major factors in these decisions, and (3) weaknesses in guidance contributed to these conditions.

Also, the Army Audit Agency and the Naval Audit Service issued reports in 2000 that identified similar deficiencies still occurring in those services.[14] Army auditors concluded that system managers for 13 of 14 weapon systems identified as required for the Joint Chiefs of Staff warfighting scenarios had not performed complete and adequate source-of-repair analyses and specifically had not accomplished core assessments to identify workloads that were needed to support core capabilities. Navy

[13] *Defense Depot Maintenance: DOD Shifting More Workload for New Weapon Systems to the Private Sector* (GAO/NSIAD-98-8, Mar. 31, 1998) and *Defense Depot Maintenance: DOD's Policy Report Leaves Future Role of Depot System Uncertain* (GAO/NSIAD-96-165, May 21, 1996).

[14] "Process for Determining Source of Depot Level Maintenance," Army Audit Agency, AA 00-107, Jan. 3, 2000, and "Independent Logistics Assessment Process," Naval Audit Service, N2000-027, June 27, 2000.

auditors found that acquisition offices had not accomplished 80 of 179 (45 percent) required independent logistics assessments (the process used to identify and provide for logistics support requirements during weapon systems acquisition) and did not always disclose results of logistics assessments to program decisionmakers. Both cited inadequate, inconsistent, and conflicting acquisition and logistics guidance and uncertainty or lack of information on core support needs and repair analyses as contributing factors.

During our current review of DOD's core process, we found that this overall condition has not changed. Acquisition policy and acquisition officials' preferences for using contractor support were reflected in source-of-repair decisions for new and upgraded systems going to contractors, with the result that the depots have not been receiving much new workload in recent years and may not in the future. In the Air Force, for example, 48 of the 66 systems and components being reviewed for source-of-repair decisions in March 2001 were at that time recommended for private sector support. We also reviewed some new systems and upgrades representing all the services and found that they had decided or were leaning toward the private sector in 10 of the 13 cases for the bulk of their depot maintenance work. In those cases where the public sector is expected to get some portion of the work, it was typically on the older technology and legacy systems while contractors were expected to perform most of the repairs on the newer technology items. In most of the cases, core capability issues had either not been considered or were not major factors in the decisions. In some instances, the final decision on systems had been delayed or stretched out for years, which may make it difficult, more costly, and less likely that the eventual decision would be that the military depots perform this maintenance work.

Implementing Procedures and Practices Further Compound Future Core Capability Concerns

The services' core procedures and practices further raise concerns about the extent to which core capabilities are being established and preclude defense managers or the Congress from assessing the extent to which overall core policy objectives are being met. To put the methodology for determining standardized core requirements into effect, each service developed its own approach, criteria, and assumptions to adapt the methodology to individual circumstances. Each service has different procedures and practices to implementing the core methodology and identifying and establishing core capabilities that reduce the development of core capabilities. These procedures and practices include the concepts of capability for like workloads; the use of risk assessments for reducing the amount of core; the use of peacetime workload factors; and having

insufficient peacetime workloads to retain core capability because the core process is not linked to defense planning and budgeting.

Establishing Capability By Using Like Workloads is Questionable

The Air Force and the Naval Sea Systems Command, and to a lesser extent the Army, rely on the questionable concept of "like" workloads to identify core support workloads used to satisfy core requirements. The critical assumption is that peacetime work on like (similar) types of systems and repair processes provides sufficient skills and repair capabilities that government facilities, equipment, and maintenance personnel could, within the short timeframes required by national defense emergencies and contingencies, quickly and effectively transfer to new workloads on systems and equipment currently repaired in the private sector. The theory is that capabilities on a wide range of commodities would be transferable during a defense emergency to repair systems not currently maintained in the defense depots. The like-workload concept as it is applied to specific weapon systems is portrayed in figure 3, and specific examples of concerns about the use of the concept in the various services are discussed below.

Figure 3: Service Use of "Like" Workloads to Assume a Repair Capability

Actual Public Depot Workloads	Assumed Repair Capabilities
C-130, C-141 & KC-135 airlift aircraft	C-17 airlifter
B-1 & B-52 bomber aircraft	B-2 bomber
Nuclear & large deck surface ships	Combat support, mine warfare & amphibious ships
Apache helicopter engine, transmission & blade	Apache helicopter electronics & airframe

The Air Force, the most extensive user of the concept of like work, focuses its efforts on providing its depots with the capabilities to accomplish broad categories of repairs. Officials compute core work requirements based on categories of equipment repair such as avionics, instruments, engines, and airframes rather than on specific weapon systems, which is the approach generally used by the Army, Navy, and Marines. Using professional judgement and knowledge of existing in-house work, officials then designate which maintenance workloads will be accomplished to satisfy the required level of repair capability in each

category. To illustrate, maintenance workloads on the KC-135, C-141, and C-130 are designated as core workloads for Air Force depots to satisfy computed core capabilities for repairs in the large-airframe cargo aircraft category. As a result, repair workloads on some Air Force weapon systems that are heavily relied on in wartime planning scenarios are not identified as core support work. For example, only a very small amount of avionics workload for the C-17 aircraft—which is expected to be heavily used in all scenarios—is identified as core support work in the latest computation. Also, there are no in-house workloads on some mission-essential systems identified in war plans, notably the F-117, the E-8 (Joint Stars), and the U-2. While the Air Force policy is to provide core capabilities for their systems through like workloads, the Air Forcer core capability calculations do not include these contractor-supported systems.

The assumption that depots could quickly and easily transition to repair new and different weapon systems is questionable. It is unlikely that all needed core capabilities could be established in a timely manner because in relying on the private sector, the services have not procured the support resources that would be required to establish in-house capability and it would take time and funding to establish the required capability. For example, Air Force Materiel Command officials stated that it could take 2 years or more to build up a sufficient capability to handle major C-17 repairs if required. Even though one depot maintains other large cargo aircraft, it would not have specialized and unique support equipment, technical data, and mechanics trained and certified on the unique and advanced C-17 features. For comparison purposes, the Warner Robins depot took about 2 years to effectively assume the C-5 workload after the San Antonio depot was closed. Warner Robins had been doing similar work for many years on other airlifters, the C-141 and C-130, and had access to C-5 technical data, depot plant equipment, and mechanics. Similarly, the Air Force relies on B-1 and B-52 workloads to support core capabilities for the B-2 airframe, which is repaired by a contractor. The assumption is that a military depot repairing the B-1 or B-52 could take care of emergency depot requirements for the B-2. However, the technology, repair processes, and equipment needed for the B-2 are much different than those used on the B-1 and B-52 fleets. Further, workers are not trained on unique characteristics or modern repair techniques and do not have the proper clearance to accomplish repairs on low observable characteristics of stealth systems.

The Naval Sea Systems Command employs a variant of the like-work concept, which identifies core capabilities based on the number and types of ships. Although Navy officials said all 316 ships in the Navy are mission-

essential, the public shipyards primarily overhaul nuclear-powered ships and large-deck surface ships, and private shipyards repair most surface combatants, amphibious, and auxiliary support ships. Ship repair managers assume that, in an emergency, the public shipyards have the necessary facilities, equipment, and skilled personnel to repair any Navy ship and components. This assumption includes those classes of ships and components currently maintained solely by contractors. It is unclear whether, in an emergency, the nuclear facilities, specialized support and test equipment, and dry dock space could be cleared and reconfigured and that government workers could take over repairs on classes of ships currently maintained in the private sector.

In contrast with the process used by the Air Force and for Navy ships, the Army, Marines, and the Naval Air Systems Command focus more attention on performing repair workloads on specific weapon systems. Officials initially compute core capabilities by weapon system, making more explicit the linkage between weapon systems that are tied to war planning scenarios and core capabilities and supporting workloads. Officials identify core capabilities based on the number of each specific weapon system identified in the war plan and generally assign at least a portion of the workload on each system and its subsystems to a military depot. As a result, these commands have some degree of active in-house workloads on almost every weapon system identified in the war plans.

Use of Risk Assessments Approach Can Hinder the Development of Capability

Another area of concern in how services compute core is the use of risk assessments to determine if work initially determined to be core support work could instead be provided by the private sector at an acceptable level of risk. The standard DOD core methodology was revised in 1996 to incorporate risk assessments as a way of evaluating repair capability in the private sector to determine whether capability could be provided by contractors rather than by a military depot. The Air Force makes extensive use of risk assessments to significantly reduce its computed in-house core capability; the Marines Corps and Naval Sea Systems Command apply the concept in more limited fashion; and the Army and Naval Air Systems Command did not use risk assessments at all.

Air Force officials developed an extensive risk assessment process and criteria, which identifies private sector capability and reduces its identified core capability because of the availability of this private sector capability. For example, for airframe repairs, the Air Force reduced its core capability by 66 percent through the risk assessment process. As a practical consequence, the Air Force's application of risk has resulted in at least some portion of the core support workloads needed to maintain

every weapon system and commodity being identified as available for contracting out.

Officials of the Naval Sea Systems Command and the Marine Corps said that they do risk assessments. However, these appear to be perfunctory and do not change how maintenance work is allocated. As discussed earlier, the Naval Sea Systems Command initially identifies all ships to be strategically necessary, but allocates maintenance work to the public and private shipyards based on type of ship and historical basing considerations. Marine Corps officials said that their last risk assessment was done as an undocumented roundtable discussion in 1998. For the 2001 core capability assessment, the Corps' computed core of 3.1 million hours was offset by 1.1 million hours because of the perceived availability of risk acceptable contracted workload. The Marines reported a final core figure of 2 million hours to be accomplished in the public sector. Officials said the core process would be more meaningful if it influenced the assignment of repair work for new systems and was tied to the budget process.

Conversely, the Army and Naval Air Systems Command revised their processes to eliminate the private sector risk assessments and did not use them in their most recent core determinations. Army and Navy aviation officials said that they think risk assessments are not appropriate. They believe that to have a real capability means that the depots need to have at least some workload on every mission-essential system. In the opinion of these officials, military items are generally best supported in the public sector and commercial items best supported in the private sector.

The differing interpretations and applications of risk assessments can result in significant differences in the ultimate core capability requirement computed by each service and in the core support work assigned to the depots. If the result of the risk assessment process is to include private sector capability as a portion of the identified core logistics capability under 10 U.S.C. 2464, that in our view would be inconsistent with the statute.

As we understand it, the risk assessment process was intended to assess whether existing private sector sources could provide logistics capability on mission essential systems at an acceptable level of risk, reliability, and efficiency. While one could argue that under 10 U.S.C. 2464 as it was worded prior to 1998, that commercial capability could be considered as a portion of the identified core depot maintenance capabilities, we do not think such is the case under the current version of the statute. The provision was amended by the National Defense Authorization Act for

Fiscal Year 1998[15] to state that; "it is essential for the national defense that the Department of Defense maintain a core logistics capability that is government-owned and government operated (including government personnel and government-owned and operated equipment and facilities)." Similarly, section 2464 further provides that "the Secretary of Defense shall require the performance of core logistics workloads necessary to maintain the core logistics capabilities identified…at government-owned, government-operated facilities of the Department of Defense."[16] Consequently, we do not view a risk assessment process implementing 10 U.S.C. 2464 that results in the inclusion of private-sector capabilities as a portion of the identified core logistics capabilities as consistent with the statute.

Peacetime Workload Factors Affect Computed Capability Requirements

The difference in services' use of the methodology factor used to reduce computed wartime requirements to peacetime workloads also raises concerns about the extent to which core capabilities are being developed. The factor reflects the ability of depots to surge (increase) work during an emergency. The Air Force, Naval Air Systems Command, and the Marine Corps use the same factor; the Naval Sea Systems Command uses a smaller factor; and the Army does not use an adjusting factor. The factors used result in higher peacetime core workload requirements for the Army and Sea Systems Command relative to their wartime needs compared to the other services. For example, in using a factor of 1.6, the Air Force assumes that in emergency situations, existing in-house facilities could increase their production by 60 percent by working increased time. If the Army had used the same factor used by the Air Force, its computed 2001-core capability support requirement would have been reduced from 9.8 million direct labor hours to 6.1 million hours. Conversely, if the Air Force had not used an adjustment factor, its computed 2001 core support requirement would have been increased from 18.2 million direct labor hours to 29.1 million hours.

Current Workloads Do Not Optimize the Development of Core Capabilities

Our review identified concerns that, after computing the core capabilities, actual workloads assigned to the depots during peacetime are not always sufficient to fully support core capability requirements. Not meeting workload goals can mean that the workforce is getting less than optimal work experience on core workload. According to 10 U.S.C. 2464, DOD policy, and the core requirements determination process, the services are

[15] P.L. 105-85, section 356.

[16] 10 U.S.C. 2464 (a)(4).

to assign sufficient peacetime workloads to the depots to maintain the expertise and competence in core capabilities. However, as discussed below, this is not happening in all cases.

The volume of assigned peacetime workloads in the Army fell short of the 9.2-million-hour total core workload needed to support its core capabilities by about 1.4 million direct labor hours in fiscal year 2000 and about 1 million hours in fiscal year 2001. For example, the Army's most recent update of the core support work requirement for the Apache helicopter totals 420,000 direct labor hours for fiscal year 2001. However, its funded workloads assigned to military depots totaled only 126,000 direct labor hours in fiscal year 1999 and about 264,000 hours in fiscal year 2000. Depot officials told us the principal Apache aircraft work in the depot involves disassembly and overhaul of selected components that the contractor will later use in the remanufacturing process. Logistics officials pointed out that one reason peacetime work has lagged behind calculated core support workload requirements is the continuing trend for outsourcing maintenance services involving weapon system upgrades and conversions. The depot officials pointed out that to alleviate the financial impact from the shortfall in actual workload, the Army established direct appropriation funding to reimburse its depots for fixed overhead costs associated with underutilized plant capacity. In fiscal years 2000 and 2001, the Army provided its depots a total of about $20 million in direct funding for underutilized capacity.

Shortfalls also exist in the Air Force. For example, in fiscal year 2001, the Air Force anticipates about an 800,000-hour shortfall in depot-level software maintenance workload compared to its core capability support work requirement. Air Force officials originally computed a core work requirement of 3.7 million hours for software maintenance. Air Force management reduced the computed requirement by 600,000 hours because the depots were not considered capable of accomplishing that much workload. As a result, the Air Force only included 3.1 million hours for software maintenance in the total 18.2 million-hour core work requirement reported to the Office of the Secretary of Defense. Even at this lower number, the Air Force expects to accomplish only about 2.9 million hours in 2001, increasing the real core shortfall by another 200,000 hours to a total shortfall of more than 800,000 hours. We also determined that the Air Force understated core support work for airframe repairs by 528,000 hours because tasked contractor logistics support systems were inadvertently omitted in the roll-up of core requirements. Additionally, the Air Force potentially understated hours for component workloads because

officials could not support how wartime flying hours were converted into commodity repair hours.

Air Force officials repeatedly identified capability shortfalls in qualified software technicians and engineers as one of their most severe concerns at the depots. The Air Force Materiel Command initiated a study of software maintenance to assess the ability of the depots to support future depot level software workloads and to identify steps needed to perform greater amounts of workload. The study noted that the three Air Force depots were experiencing difficulty in accomplishing about 2.6 million hours per year. The study recommended changes aimed at improving recruiting, hiring, paying, and retaining software maintenance personnel.

In fiscal year 2000, the Marines anticipated a required depot core support workload of 2 million hours but executed only about 1 million hours. Officials told us that not all items could be worked on due to financial constraints, readiness requirements, and operational force priorities. They noted that tying the core process to the budget process would help resolve this problem.

Because the biennial core computation process operates largely as a stand-alone exercise and is not explicitly linked to the planning, programming, and budgeting system or to DOD's strategic planning processes, it has little direct impact on resource allocation decisions and management priority setting. The identification of shortfalls in core capability, for example, does not generate budget requirements for making capital investments in facilities, equipment, and other resources needed to establish the capability. The 1993 core policy statement directed that implementation plans and decisions be reflected in future annual planning and budget submissions, as well as be input to the depot maintenance strategic plan, but this has not been done. If the core process were tied more explicitly to the budget and strategic planning process, the assignment of actual work to the depots should better support the establishment and continuation of required core capability.

Results of DOD Initiatives to Improve Core and Core-Related Processes Are Uncertain

While the Office of the Secretary of Defense and each service, to varying extents, have taken steps to improve core and core-related processes, the results of these initiatives are uncertain. They may or may not result in improvements to these processes. For example, a recently completed review of DOD's core process identified various alternatives for improving the core process. The Deputy Under Secretary of Defense for Logistics and Materiel Readiness contracted for the review of core guidance and procedures used by the services to compute core capability requirements.

The May 15, 2001 DOD core report provided information about each of the services' core processes.[17] According to officials, DOD continues to review the report and will not likely complete this process until the new administration announces how it intends to approach the management of logistics.

The report concluded that (1) DOD's depot maintenance core policy was incomplete and unclear, (2) service implementation was inconsistent, (3) the core methodology is not routinely used in DOD decision-making and is not linked to the defense budget system, and (4) capability requirements are not effectively addressed in the context of strategic planning. The study produced four sets of alternatives designed to improve and transform core policy and methodology into a management tool and explicitly integrate it into DOD's strategic planning processes. Those alternatives, discussed in appendix I, ranged from making a few minor administrative adjustments to the core process, to making substantive changes to the process such as eliminating the risk assessment as a tool for reducing the core requirement, and to undertaking an extensive revamping of the process which would include the elimination of the requirement for maintaining a core capability in military depots.[18]

In October 2001, Office of the Secretary of Defense management selected the alternative that would streamline the existing core process and establish explicit linkage with the DOD planning, programming, and budgeting system. The Deputy Under Secretary for Logistics and Materiel Readiness issued new guidance regarding the implementation of core depot maintenance policy and methodology. Also, a joint working group is to be established to review the details of implementation procedures with final policy guidance to be issued by March 1, 2002.

Similarly, the military services also have ongoing initiatives that will affect logistics processes, including core and the source-of-repair determination. Some of these initiatives are discussed in the next section of the report and in appendix I. In our June 2000 report[19] we questioned the Department's management of logistics improvement efforts. Our ongoing

[17] "DOD Core Depot Maintenance Policy/Methodology Report", May 15, 2001.

[18] To implement such an extensive revamping would require legislative changes.

[19] *Defense Logistics: Actions Needed to Enhance Success of Reengineering Initiatives (*GAO/NSIAD-00-89, *June 23, 2000).*

review of the Department's logistics strategic planning process has identified additional areas where the Department can improve its logistics support planning.[20]

In addition, the recently completed Quadrennial Defense Review (QDR) may lead to changes in how DOD manages depot maintenance and other logistics activities as well as how the Department approaches core and core-related processes. The QDR involved a comprehensive strategic assessment of defense strategy, goals, requirements, and capabilities. DOD issued its report on the QDR on September 30, 2001 with the intent that it serve as the overall strategic plan required by the Government Performance and Results Act of 1993.[21] The report's section on modernizing DOD business processes and infrastructure discusses core functions and, as a general rule, states that any function that can be provided by the private sector is not a core government function.

The report states that DOD will assess all its functions to separate core and non-core functions with the test being whether a function is directly necessary for warfighting. It expects to divide functions into three broad categories:

(1) Functions directly linked to warfighting and best performed by the federal government. In these areas, DOD plans to invest in process and technology to improve performance.

(2) Functions indirectly linked to warfighting capability that must be shared by the public and private sectors. In these areas, DOD will seek to define new models of public-private partnerships to improve performance.

(3) Functions not linked to warfighting and best performed by the private sector. In these areas, DOD will seek to privatize or outsource entire functions or define new mechanisms for partnerships with private firms and other public agencies.

It is not clear where depot maintenance and other logistics functions contributing to weapon systems sustainment and performance will be

[20] *Defense Logistics: Strategic Planning Weaknesses Leave Economy, Efficiency, and Effectiveness of Future Support Systems at Risk* (GAO-02-106, Oct. 11, 2001).

[21] P.L. 103-62.

placed in this framework. If it were placed in the second category, the implication is that it would not be core. The impact of 10 U.S.C. 2464 from such determinations is uncertain.

Investments In Facilities, Equipment, and Personnel Have Been Insufficient

Investments in facilities, equipment, and human capital have not been sufficient in recent years to ensure the long-term viability of the military services' depots. This situation is in part due to the weaknesses we identified in the core policy and related implementation practices. Also contributing is DOD's downsizing of depot infrastructure and workforce. As a result, the investment in capital equipment and human capital resources for DOD's depot facilities declined significantly. Today's military depot capability is primarily in the repair of older systems and equipment. At the same time, the average age of the depot worker is 46 with about one-third eligible to retire within the next five years. The Department has only recently begun to consider changes to core capability policies that will generate the workloads, the facilities, and the personnel required to support future core capabilities in government facilities. Consequently, the Department lacks strategic and related service implementation plans that address the development of future capabilities for both the maintenance facilities and the workforce.

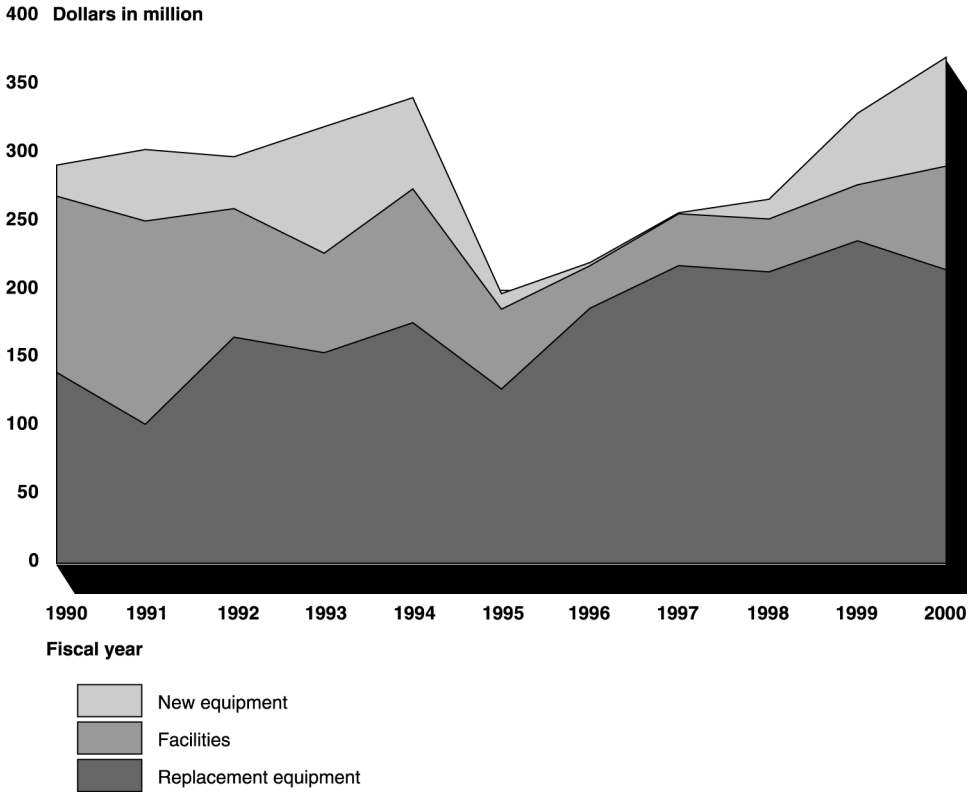
Future Viability of Maintenance Depots Affected by Lack of Investment in New Capability

Capital investments in depot facilities and plant equipment declined sharply in the mid-1990s as a consequence of defense downsizing, depot closures and consolidations, and DOD plans to increase reliance on the private sector for logistics support of new weapon systems. As a result of DOD's lack of investment in its internal depot system—particularly, by not assigning new and upgraded systems to the depots for repair—the military depot system is aging and is not keeping up with the latest technologies. In recent years, funding has started to increase slightly as the services have recognized the need to modernize the depots. As with any business, modernizing and refurbishing plant and equipment for optimal operating efficiency, as well as acquiring new capabilities and cutting-edge technologies linked to new workloads, are important to future viability of the military depots. Figure 4 depicts depot investments from fiscal years 1990 through 2000 from the three primary funding sources—the capital purchases program,[22] military construction, and new weapon systems

[22] The capital purchases program is funded through equipment depreciation expenses that are built into the maintenance rates charged customers by the military services' working capital funds.

procurement and upgrade programs. The depiction has been adjusted for inflation.

Figure 4: Capital Investments in Maintenance Depots



Source: DOD. Expressed in base year 2000 dollars.

Of the estimated $3 billion in capital investment funding the military depots received between fiscal years 1990 and 2000, about 60 percent was for the capital purchases program that buys equipment to replace old depreciated equipment. Funding for this program was much lower during the 1990s than under its predecessor programs in the 1980s. More recently, funding levels have increased; but almost one-half of the funds went to meet environmental requirements, to purchase general use computers, and to do minor construction—requirements that may be needed for business purposes but typically do not increase maintenance production capabilities or add new technological capabilities to accomplish new workloads.

The military construction appropriation funds new and replacement depot facilities. Military construction represents about 26 percent of the total depot capital investments between 1990 and 2000. For example, a 1998 project at Corpus Christi Army Depot provided a power train cleaning facility to add capability to clean new, specialized metals on Apache and Blackhawk helicopters. The bulk of military construction funding has gone to replace or modernize existing facilities or to increase capacity.

Since the military depots have not been assigned much new work, they have received relatively little funding from the third source of funds procurement funds provided by weapon system program offices. Available data shows that the depots received about $403 million through capital investments from program offices between 1990 and 2000—representing about 14 percent of the total capital investment in the depots during that period. This source is the most important in terms of adding new capabilities such as modern repair technologies. System program managers are responsible for providing these funds to support new weapon systems being acquired. A complete and accurate accounting of the historical and planned amounts contributed to capitalizing the depots by weapon system program offices does not exist since the services do not centrally track and account for these funds. With the repair of newer technology items remaining with the private sector for most new systems, the military depots have not been getting the peculiar support equipment, technical data, and other resources needed to build a depot capability for supporting the new systems. For example, the Air Force recently attempted to identify contract workloads that could be brought in-house to help it meet the 50-percent limit on private sector performance of depot maintenance set forth in 10 U.S.C. 2466 but found that the depots were unable to take on these workloads without investment in new capability.

The Aging Workforce Presents Significant Human Capital Challenges for Succession Planning

DOD faces significant management challenges in succession planning to maintain a skilled workforce at its depot maintenance facilities. Like many other government organizations, relatively high numbers of civilian workers at maintenance depots are nearing retirement age. These demographics, coupled with the highly skilled nature of depot maintenance work and the length of time required to train new hires and support their progression to a journeyman level and beyond, create hiring, training, and retention challenges. Competition with the private sector for skilled workers and pay issues add to the current challenging situation.

Reductions in the civilian workforce by more than half since the end of the Cold War have left an aging depot workforce. As a result of depot closures and other downsizing initiatives, the civilian depot workforce has been

reduced by about 60 percent since 1987. Many of the youngest industrial workers were eliminated from the workforce while at the same time there were few hiring actions. An aging depot workforce has advantages in terms of the skill levels of the employees, but it also has disadvantages such as lack of familiarity with the newest technologies because the latest weapons have not generally been repaired in the military depots. With large numbers of retirement-eligible personnel, depot managers are concerned about the need to manage the losses of critical skills and regrow the talents that are needed to maintain a high quality workforce. The skills and institutional experience are necessary to maintain an effective and flexible workforce that is capable of performing the required work efficiently and effectively. If production capability similar to current levels is to be maintained, many new workers will be needed. With an average age of 46 and about one-third eligible to retire within the next 5 years, these data are comparable to other studies of DOD's total civilian workforce. Table 1 provides average age and retirement eligibility data for each of DOD's major depot activities.

Table 1: Retirement Eligibility Status and Average Age of the Total Civilian Depot Maintenance Work Force

Defense maintenance depots	FY 2001 staffing levels	Percent eligible for retirement by FY 2005	Average age
Army depots			
Anniston Army Depot	1,792	38	51
Corpus Christi Army Depot	2,852	27	50
Letterkenny Army Depot	728	26	49
Red River Army Depot	767	53	49
Tobyhanna Army Depot	2,243	48	49
Total Army	8,382	37	50
Navy depots			
Cherry Point Aviation Depot	3,635	50	47
Jacksonville Aviation Depot	3,664	38	48
North Island Aviation Depot	3,248	45	48
Norfolk Naval Shipyard	6,582	22	45
Pearl Harbor Naval Shipyard	3,416	31	46
Portsmouth Naval Shipyard	3,280	24	45
Puget Sound Naval Shipyard	7,380	24	45
Keyport Undersea Warfare Center[a]	600	35	47
Crane Naval Surface Warfare Center[a]	368	35	44
Total Navy	32,173	31	46

Defense maintenance depots	FY 2001 staffing levels	Percent eligible for retirement by FY 2005	Average age
Marine Corps depots			
Albany Logistics Base	858	31	48
Barstow Logistics Base	828	25	48
Total Marine Corps	1,686	28	48
Air Force depots			
Aerospace Maintenance and Regeneration Center[b]	493	54	51
Ogden Air Logistics Center	4,929	25	47
Oklahoma Air Logistics Center	8,621	24	44
Warner Robins Air Logistics Center	6,075	30	45
Total Air Force	20,118	27	45
Total defense maintenance depots	62,359	30	46

[a]The Navy Warfare Centers are primarily involved in research and development activities, but do accomplish some depot maintenance.

[b]The Aerospace Maintenance and Regeneration Center responsibilities include storing aircraft removed from inventory and providing parts, in addition to some depot work.

Source: Department of Defense data.

As indicated in table 1, by fiscal year 2005, about 30 percent of the current employees will be retirement-eligible. The percentage is highest in the Army at 37 percent and lowest in the Air Force at 27 percent. With an average age of 50, the Army depots have the oldest workers and the Air Force the youngest, with an average age of 45. Two facilities—one Air Force and one Army— share the position of having the oldest workers. The extent of the aging depot workforce problem is influenced by the extent to which the depots retain work requirements in the future. If current levels are retained, large numbers of new workers will be needed; but if the workload levels continue to decline, the problem will be less severe. Marine Corps officials told us that while the Marine Corps has an aging workforce problem, the primary challenge is lack of work. They noted that over the next 2 years, the Marine Corps is projecting a 26-percent reduction in its depot maintenance workforce as older systems are phased out and maintenance and repair work for new systems go to the private sector. Thus, the aging workforce issue is less problematic if this workload reduction occurs.

In most cases, depot managers report they have been relatively successful in meeting their recruitment goals in the past; but they said they have had difficulty hiring younger workers and sufficient numbers of workers with

specialized skills such as software maintenance. A Department of Labor standard sets a 4-year apprenticeship for acquiring trade skills, and some depot managers said workers in some of the industrial skill areas require 3 or more years of training before they reach the journeyman level. Depot managers indicate that they are behind where they should be in hiring new workers to revitalize human capital resources. Surveys of young adults entering the general workforce indicate that fewer are considering careers in government, and this is particularly true for the depots since workers are uncertain what future there is for these activities. A national shortage of software engineers, skilled mechanics, metal workers, machinists, and some other skill areas exacerbates the military depots' human capital challenges since the military facilities are competing with the private sector for workers.

Current personnel policies, procedures, and other factors may not support timely replacement of depot personnel. As previously noted, many highly skilled workers require 3 or more years to develop technical expertise under the on-the-job tutelage of experienced workers. Inflexible hiring practices inhibit timely hiring, and the historical recruiting pool of skilled workers has been reduced as the number of military maintenance personnel has declined.

Strategic Plan to Shape Future Maintenance Infrastructure and Human Capital Investment Requirements Is Needed

The services have lately recognized the need to address depot maintenance infrastructure and workforce issues, but improvement plans are still being developed and actions are in the early stages. No overall plan exists that ties investments in depot maintenance facilities and plant equipment with future workloads and, in turn, with human capital needs. Officials have identified significant funding requirements associated with hiring, training, and retaining depot workers. To replace retiring workers, the services will have to greatly increase the rate of new hires.

Some Recognition That Action Is Needed

None of the services has a comprehensive depot infrastructure plan that integrates expected future core capabilities with necessary capital investments required to establish that capability and which identifies budget requirements to implement that plan. In response to Congressional concerns in this area (that evolved from the Air Force statements that it cannot address its 50-50 workload imbalance by shifting some private sector work to military depots because of not having the required depot support resources), the Air Force is working on such a plan. Air Force officials expect the depot infrastructure plan to be completed in December 2001. Since this plan is not yet available, we do not know whether it will provide the roadmap needed to effectively manage this critical resource. While Army, Navy, and Marine officials have undertaken some initiatives

intended to improve their depot management, these efforts do not provide a comprehensive plan to shape future maintenance infrastructure. Given the preliminary status of these efforts, it is unclear to what extent they will mitigate or resolve identified deficiencies in this area.

Further, we noted that generally each service is studying and pursuing workforce-shaping efforts independently. Current initiatives to revitalize the depot personnel workforce may not completely resolve the potential personnel shortfall. For example, efforts to expand the apprenticeship, cooperative training, and vocational-technical programs are just starting and involve relatively small numbers to date. Increased funding to support expanded training needs has not been completely identified and programmed, and the priority of this initiative relative to other military requirements is questionable. Personnel officials of the Air Force Materiel Command, for example, identified a need for $326 million over the next 5 years to implement its human capital initiatives, including payment incentives and training costs. Only $15 million has been approved. Related efforts to develop a multi-skilled workforce essential to more efficient operations of depots have been limited. Very importantly, future requirements for hiring and training a workforce capable on new systems and high technology repair processes are not fully known. As discussed earlier, gaps and deficiencies in core policies and implementation limit forward-looking actions to identify and acquire future required capabilities.

DOD officials are also looking to better utilize and expand existing authorities under the Office of Personnel Management. For example, the 1990 Federal Employees Pay Comparability Act[23] provides for use and funding of recruitment activities, relocation bonuses, and retention allowances; but the provisions have been used only for white-collar workers. DOD is seeking to expand the act's coverage to wage grade employees at the depots and arsenals, and it is considering a legislative package of additional authorities that may also be needed. These proposals are designed to make it easier to hire workers, including ex-military personnel, and raise monetary incentives to attract and retain needed talent in areas of shortages and direct competition with the private sector. These areas include software maintenance, engineering, aircraft mechanics, and other skill categories. Another issue receiving attention recently is development of an alternative hiring system to replace the

[23] P.L. 101-509 (Nov. 5, 1990).

existing system, which defense personnel specialists say is cumbersome and untimely.

No Overall Strategic Plan

Logistics activities represent a key management challenge. In our January 2001 high-risk series report, we designated strategic human capital management as a new government-wide high-risk area because of the pervasive challenge it represents across the federal government.[24] In our recent performance accountability report on defense we reported that DOD faces significant challenges in managing its civilian workforce.[25] The sizeable reduction in personnel since the end of the Cold War has led to an imbalance in age, skills, and experience that is jeopardizing certain acquisition and logistics capabilities. Its approach to the reductions was not oriented toward reshaping the makeup of the workforce. DOD officials voiced concerns about what was perceived to be a lack of attention to identifying and maintaining a basic level of skills needed to maintain in-house industrial capabilities as part of the defense industrial base. We concluded that these concerns remain today and are heightened by DOD's increased emphasis on contracting for many of its functions. Maintenance is an important element of those activities; and DOD is at a critical point with respect to the future of its maintenance programs, that are linked to its overall logistics strategic plan. However, it is unclear what future role is planned for the military depots in supporting the Department's future maintenance program.

There is no DOD-wide integrated study effort for depot workers and related logistics activities similar to the extensive review of the civilian acquisition workforce undertaken by the Acquisition 2005 Task Force. The Under Secretary of Defense for Acquisition, Technology and Logistics established the task force to take a comprehensive look across the services to identify human capital challenges and solutions as well as the resources needed to implement them. The October 2000 final report of the acquisition task force noted that to meet the demands caused by an acquisition workforce retirement exodus in 3 to 5 years, implementation of recommended initiatives had to begin by the next quarter.

Before DOD can know the magnitude of the challenge of revitalizing its depot facilities and equipment and its depot workforce, it must first know

[24] *High-Risk Series: An Update* (GAO-01-263, Jan. 2001).

[25] *Major Management Challenges and Program Risks: Department of Defense* (GAO-01-244, Jan. 2001).

what its future workloads will be; what facility, equipment, and technical capability improvements will be required to perform that work; and what personnel changes will be needed to respond to retirements and workload changes. Since the services have not yet conducted an assessment to enable the identification of future requirements in sufficient detail to provide a baseline for acquiring needed resources, they are behind in identifying solutions and required resources to implement them.

Policy Gaps Could Lead to Shortfalls in Non-Depot Maintenance Logistics Capabilities

Regarding non-depot maintenance logistics activities, the Department has not established policies or processes for identifying core capabilities for activities such as supply support, engineering, and transportation. Without identifying those core logistics activities that need to be retained in-house, the services may not retain critical capabilities as they proceed with contracting initiatives. The resulting shortfalls in non-depot maintenance logistics capability could impact the Department's ability to effectively support required military operations.

Officials of the Office of the Secretary of Defense have stated that DOD has not identified any core capabilities nor implemented a core determination process for any logistics activities other than depot maintenance. As we understand it, DOD does not believe that 10 U.S.C. 2464 necessarily includes logistics functions other than depot maintenance. We believe that notwithstanding any lack of clarity in the coverage of 10 U.S.C. 2464, a well-thought-out and well-defined policy and process for identifying core requirements in other areas of logistics is necessary to maintain the government's capability to support its essential military systems in time of war or national emergency. Resolving this policy issue is becoming more important as DOD increases outsourcing and develops new strategies to rely on the private sector to perform many logistical support activities. We note that the September 2001 QDR report discusses DOD's plans to assess support functions to identify core from non-core functions.

The current version of 10 U.S.C. 2464 is not specifically limited to depot maintenance—it refers generally to "core logistics capabilities." On the other hand, the operative provisions of 10 U.S.C 2464 are set forth in terms of capabilities needed to maintain and repair weapon systems and other military equipment and the workloads needed to accomplish those activities; these are functions encompassed within depot maintenance as defined by 10 U.S.C. 2460. While the coverage of 10 U.S.C. 2464 is not clear, we nevertheless think that from an operational standpoint, the core identification process ought to include those logistics functions that are necessary to support the depot maintenance on mission essential weapons

and equipment. Section 2464 of title 10 is aimed at maintaining the government's capability to support its essential military systems in time of war or national emergency. We think that it is reasonable to expect that DOD will include in the core process those logistics functions that are determined to be necessary to achieve such a result.

Providing military readiness through the logistics support of military forces in an operational environment requires a complex set of functions and activities that includes maintenance, supply support, transportation, engineering, and others. In recent years, DOD has contracted for more of these activities. However, the Department has not laid out a strategic framework describing what combination of public and private sector support is expected as an end state and why certain activities or positions should be retained as government-performed activities. In a recent report[26] we noted that operating command officials have raised concerns about the impact on their operations that may result from expanding the use of contractors. Among their concerns was that increased contracting could reduce the ability of program offices to perform essential management functions. During this review, officials told us that they have experienced increasing problems in fulfilling oversight responsibilities because they cannot obtain adequate insight into contractor-supported programs. Additionally, logistics officials at depots and service headquarters have also raised concerns about the need to retain in-house technical and management capabilities in functional areas such as engineering and supply management. Because of the criticality of these and other logistics activities, a core assessment would improve the Department's ability to manage these activities and to better determine capabilities that should be retained in-house and those that should be available for competitive sourcing.

Conclusions

Serious weaknesses exist in the Department's policy and practices for developing core depot maintenance capabilities that are creating gaps between actual capabilities and those that will be needed to support future national defense emergencies and contingencies. If the existing policy is not clarified and current practices continue, the military depots will not have the equipment, facilities, and trained personnel to work on and provide related logistics support on many of the weapon systems and related equipment that will be used by the military in the next 5 to 15

[26] *Defense Logistics: Air Force Lacks Data to Assess Contractor Logistics Support Approaches* (GAO-01-618, Sept. 7, 2001).

years. While the Department states that it intends for its depots to have these capabilities, actual practices are much different. Core policy does not adequately take into consideration future systems repair needs and the impact of retiring systems on developing future capabilities. The core policy is not linked to the source of repair process. Also, other individual service practices negatively impact the establishment of future core capabilities and hinder management oversight. Additionally, investments in new facilities, equipment, and workforce training and revitalization have been limited for an extended period of time. Lastly, there is no strategic plan and associated service implementation plans to create and sustain a viable depot maintenance capability.

Regarding non-depot maintenance logistics activities, core policies and implementing processes do not exist. Without such policies and in the absence of a strategic approach to determining what kinds and how much logistics should be retained in-house, the Department may inadvertently contract for logistics capabilities that are needed to be performed in-house to meet readiness and contingency needs.

Recommendations for Executive Action

To enhance the management of core logistics capabilities, particularly for depot maintenance, we recommend that the Secretary of Defense direct the Under Secretary of Defense for Acquisition, Technology and Logistics, in conjunction with the appropriate military services activities, take the following actions:

- Revise depot maintenance core policy to include a forward look to incorporate future systems and equipment repair needs when developing core capability requirements and a direct link to the source of repair process. Revise depot maintenance core implementation procedures and practices to (1) establish criteria for determining what it means to have a capability in military depots to perform maintenance on mission essential systems in support of national defense emergencies and contingencies; (2) prohibit the use of the risk assessment to the extent it results in the inclusion of private-sector capability within identified core capabilities; (3) clarify the use of the adjustment factor and other elements of the computation methodology; and (4) link core requirements to the budget process to ensure adequate funding of core support workload requirements.

- Establish expedited milestones for developing strategic and related implementation plans for the use of military depots that would identify desired short- and long-term core capabilities and associated capital investments and human capital needs. These plans at a minimum

should (1) delineate workloads to be accomplished in each service's depots, other services' depots, by contractors at their own sites, and at government sites; (2) discuss the role of in-house maintenance capability as an element of each service's ability to respond to national defense emergencies and contingencies; (3) identify infrastructure improvements designed to operate more efficiently; and (4) address human capital needs and the specific actions that will be taken to meet them.

- Establish milestones and accountability for developing policies to identify core logistics capabilities for non-maintenance activities to ensure in-house retention of needed capabilities for an emergency.

Matter for Congressional Consideration

Congress may wish to review the coverage of 10 U.S.C. 2464 as it relates to non-maintenance logistics activities such as supply support, transportation, and engineering, and if it deems it appropriate, clarify the law.

Agency Comments and Our Evaluation

In commenting on a draft of this report, the Department concurred with our recommendations to improve core depot maintenance policies and procedures and to develop strategic and implementation plans for maintenance depots. Appendix IV of this report is the full response by the Department.

The Department did not concur with our recommendation to establish milestones and accountability for developing policies to identify core logistics capabilities for non-maintenance activities. The Department stated that it has not identified any core logistics capabilities beyond those associated with depot maintenance and repair as that term is defined in 10 U.S.C. 2460. Therefore, the Department saw no need to establish milestones and accountability for developing core policies for non-maintenance activities. In further discussions of this matter, officials reiterated their earlier comments that the coverage of 10 U.S.C. 2464 for non-maintenance activities was not clear.

We recognize that there is some question about the applicability of 10 U.S.C. 2464 to non-maintenance logistics activities. Thus, we included a matter for congressional consideration in this report, noting that the Congress may wish to consider reviewing and clarifying the intent of 10 U.S.C. 2464 as it relates to non-maintenance logistics activities.

We continue to believe the identification of core capabilities for other logistics activities to improve the Department's ability to manage these activities and to better support business decisions regarding whether functions and capabilities should be retained in-house. Providing military readiness through the logistics support of military forces in an operational environment requires a complex set of functions and activities such as maintenance, supply support, transportation, and engineering. The interrelatedness of the entire spectrum of logistics activities would argue that attention to core capabilities is important to non-maintenance as well as depot maintenance activities. For example, program managers and depot officials have raised management concerns including oversight of weapon systems support and retention of in-house technical skills and expertise given increased outsourcing of logistics activities. Further, the best practices of private sector companies, business reengineering principles, and OMB A-76 guidance all support the importance of an enterprise determining which vital and cost-effective functions and business processes should be retained in-house and which are appropriate for outsourcing. Our recommendation that the department extend its core analysis beyond wrench-turning maintenance activities to include those other logistics activities that are linked to the depot maintenance function is intended to assure that the Department appropriately consider what specific activities should be retained inhouse to assure the continued support of essential warfighting capability. We continue to believe it should be adopted.

We are sending copies of this report to the Secretary of Defense, the Secretary of the Army, the Secretary of the Navy, the Secretary of the Air Force, the Commandant of the Marine Corps, and the Director of the Office of Management and Budget. The scope and methodology for this review are described in appendix II. If you have questions about this report, please call me at (202) 512-8412 or Julia Denman at 202 512-4290. Additional contacts and staff acknowledgements are provided in appendix III.

David R. Warren, Director
Defense Capabilities and Management

Appendix I: DOD Initiatives That Could Affect Core and Core-Related Processes

Proposed Office of the Secretary of Defense Alternatives for Revising the DOD Core Process

Alternative 1 proposes updating and consolidating existing DOD core-related policy and guidance, explicitly addressing core-related laws. It would not involve any significant changes to the core methodology. This alternative would realign somewhat and standardize the categories in which the services report core maintenance workloads. Core depot maintenance capability requirements would continue to be computed biennially, addressing only existing systems; and the overall core determination process would continue to be relatively independent of the DOD planning, programming, and budgeting system.

Alternative 2 proposes building on the first alternative by streamlining the existing core methodology and establishing an explicit linkage with the DOD planning, programming, and budgeting system. It also would divide the core methodology into two distinct parts to more clearly distinguish between core capability requirements and the depot maintenance workloads needed to satisfy those requirements. Detailed core computations would be performed on a biennial basis in conjunction with the planning, programming, and budgeting system in order to address both requirements for new systems and changes to existing systems. Also, core computations would be reviewed annually to assess the impact of unanticipated budgetary adjustments.

Alternative 3 proposes building on the second alternative by incorporating a value-driven source-of-repair evaluation process for workloads that are not required to support core depot maintenance capabilities. This appears to be a more prescriptive expansion of the current version of the core methodology concerning the types of analysis that should be done as a part of the value-driven decision. Depending on the amount and ultimate source-of-repair decisions reached through the value-driven process, implementation of alternative 3 could necessitate issuance of waivers from the 10 U.S.C. 2466 (50-50) requirements.

Alternative 4 proposes doing away with the core process as it is known today and using a value-driven source of repair evaluation process for all depot maintenance workloads. In this context, it would be used to allocate depot maintenance workloads among public, private, and integrated maintenance activities. It could not be implemented without the revision or repeal of 10 U.S.C. 2464, 10 U.S.C. 2466, and 10 U.S.C. 2469.

In October 2001, DOD managers selected alternative 2 and issued new implementation guidance. Improvement efforts were ongoing at the time this report was issued.

Air Force Initiatives

In fiscal year 2000, the Air Force exceeded the 50-percent limit set forth in 10 U.S.C. 2466 on the amount of depot maintenance work that can be performed in the private sector. Largely because of this, we found a heightened awareness of the need to put more emphasis on incorporating core capability analysis with the source-of-repair process to drive some future workloads into the military depots. Air Force officials have taken some steps designed to better integrate the source-of-repair process and logistics considerations with acquisition program decisions. For example, senior Air Force officials issued a series of policy memos in 1999 and 2000 that were aimed at integrating the source-of-repair process with acquisition program decisions. The intent was to ensure that sustainment plans for new and modified weapon systems consider the future impacts on depot workloads allocated to the public and private sectors. These changes are designed to ensure that core capability, life-cycle costs, and other logistics considerations such as the 50-50 rule are considered at all stages of the acquisition process and figure prominently in decisions on lifetime support. Officials also revised guidance to incorporate recommended improvements and to specify both the acquisition and sustainment communities' roles and responsibilities.

While these are steps in the right direction, we have not yet seen substantive change reflected in the source-of-repair decisions. Materiel Command officials acknowledged that although the Air Force has made an effort to identify systems to redirect for repair by a military depot, program office officials have been reluctant to make changes. Officials said that since program funds to cover the acquisition of technical data, depot plant equipment, and other resources needed to establish capability in military depots have not been programmed, there is little flexibility in the short term. In a March 2001 hearing held by the House Committee on Armed Services, Air Force officials said they are working on a longer-term plan to consider options for reassigning some new systems maintenance work to Air Force depots. This plan is expected to be completed in December 2001, but it is uncertain whether any workloads will be identified for reassignment to an Air Force depot for repair.

Navy Initiatives

The Navy is in the very early stages of implementing a process to improve its management of aviation maintenance issues; and, while in an early phase, Navy officials have identified core support repair work in the Navy's North Island depot for the F/A-18 E/F, its newest fighter upgrade. In August 2000, the Naval Air Systems Command instituted a Depot Program Management Board to improve its source-of-repair process. The board is supposed to corporately manage the naval aviation industrial enterprise, which encompasses the combined capabilities and resources of organic

Navy, interservice, and commercial aviation depots. The board includes key logistics and acquisition officials from within the Command whose responsibilities and authority have a major impact on the size, shape, and cost of the naval aviation industrial base. Its responsibilities include determining and sustaining core naval aviation industrial capability and capacity and guiding best-value, industrial source-of-repair decisions. At its inaugural meeting in August 2000, the board concluded that the industrial enterprise needed a more unified corporate source-of-repair decision process to ensure that the technology for core capability is maintained. The process is still on the drawing board and implementing instructions have not yet been developed. However, Navy officials say that the new process influenced the 2001 Navy decisions requiring repair work to support core capability for the F/A-18 E/F at the North Island depot.

Army Initiatives

The Army is attempting to improve the cost-effectiveness of its depot maintenance program by better utilizing the industrial capability that it currently maintains by increasing the amount of work assigned to the Army's depots and arsenals, but the long-term impact is uncertain. In July 1999, the Assistant Secretary of the Army for Acquisition, Logistics and Technology issued guidance that gave the Army Materiel Command the responsibility for achieving optimal efficiency within the organic depot system. Prior to 1999, the acquisition community operated under policy guidance advocating contractor performance and the development of long-term support relationships with private sector contractors. Some officials believe that Army policy and practice is trying to better use the Army depots and achieve improved efficiencies. The Army also revised its acquisition guidance to require a source-of-repair decision by acquisition milestone two, the beginning of engineering and manufacturing development. Logistics officials believe this initiative is important to ensuring that core and other logistics considerations are made an earlier part of acquisition program decisions.

Appendix II: Scope and Methodology

During this review, we visited and obtained information from the Office of the Secretary of Defense and the Army, Navy, and Air Force headquarters, all in the Washington D.C. area; Army Materiel Command headquarters in Alexandria, Virginia; and two subordinate Army commands—the Tank-Automotive and Armaments Command, Warren, Michigan, and the Aviation and Missile Command, Huntsville, Alabama; the Naval Sea Systems Command, Arlington, Virginia, and the Norfolk Navy Shipyard, Norfolk, Virginia; the Naval Air Systems Command in Patuxent, Maryland, and Naval Air Depots at North Island, California, and Cherry Point, North Carolina; the Marines Corps Materiel Command and Logistics Base in Albany, Georgia; the Air Force Materiel Command at Wright-Patterson Air Force Base, Ohio, and the Ogden Air Logistics Center in Ogden, Utah; and the Joint Depot Maintenance Analysis Group, Wright-Patterson Air Force Base, Ohio.

To determine whether DOD has implemented an effective core depot maintenance policy, we reviewed defense core policy and applications from a historical perspective to trace their development and use in decision-making. We reviewed the standard core methodology developed by DOD, changes in the methodology, and the specific procedures and techniques used by the military services to compute core requirements. We also obtained and reviewed logistics and acquisition policies and procedures for sustaining weapon systems, including source-of-repair and other decision tools. We obtained historical core computation data to identify trends in core workloads. We compared and contrasted the services' methodologies for computing core and for making source-of-repair decisions. We evaluated recent maintenance decisions and pending decisions to determine the basis and support for decisions and current status of systems being reviewed. We reviewed a recent departmental report that evaluated the services' procedures for computing core requirements and set out alternatives for consideration of improvements.

To determine the extent to which DOD's investments in facilities, equipment, and human capital are adequate to support the long-term viability of military depots, we reviewed current service efforts to address depot issues and concerns and emerging business strategies and concerns, including plans to modernize and recapitalize the depots. We also issued a data call and received information from all 19 major defense depots. The purpose of the data call was to gain the local perspective of depot officials on recent events affecting business operations and to obtain data on their plans, business strategies, and capital investments. We gathered and summarized information on the size and scope of depot activities, new repair workloads received and/or planned for the depots, as well as

workloads lost (or expected to be lost) for fiscal years 1995-2005. We summarized recent and planned investments in depot plants and equipment to determine the amount, nature, and trend in capital investments. We reviewed plans to address human capital issues, in particular the hiring and training plans to replace an aging maintenance work force, cost estimates, and legislative proposals being considered to address these issues. We also relied on our extensive and continuing work on human capital issues, both in the defense environment and the federal government as a whole.

To determine the extent to which DOD has identified core capability for logistics activities other than depot maintenance, we discussed with officials their perspectives on core legislation and their historical responses to congressional requirements. We relied also on our previous work on the A-76 process and prior reviews of logistics activities and plans.

We conducted our review from September 2000 through June 2001 in accordance with generally accepted government auditing standards.

Appendix III: GAO Contacts and Staff Acknowledgments

GAO Contacts

David R. Warren(202) 512-8412
Julia C. Denman(202) 512-4290

Acknowledgments

In addition, John Brosnan, Raymond Cooksey, Bruce Fairbairn, Johnetta Gatlin-Brown, Jane Hunt, Steve Hunter, Glenn Knoepfle, Ron Leporati, Andrew Marek, Fred Naas, and Bobby Worrell contributed to this report.

Appendix IV: Comments by the Department of Defense

Note: Draft report was submitted as GAO-01-612.

DEPUTY UNDER SECRETARY OF DEFENSE FOR
LOGISTICS AND MATERIEL READINESS
3500 DEFENSE PENTAGON
WASHINGTON, DC 20301-3500

OCT 2 2001

Mr. David R. Warren
Director, Defense Capabilities and Management
U.S. General Accounting Office
Washington, DC 20548

Dear Mr. Warren:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) draft report "DEFENSE LOGISTICS: Actions Needed to Overcome Capability Gaps in the Public Depot System" August 3, 2001 (GAO Code 709518).

With one exception, The Department generally concurs with the GAO recommendations. However, the Department non-concurs with the final recommendation contained in the GAO draft report. An explanation of the DoD position and technical comments are enclosed.

Sincerely,

Diane K. Morales

Enclosure:
As stated

GAO CODE 709518/GAO-01-612

"DEFENSE LOGISTICS: ACTIONS NEEDED TO OVERCOME CAPABILITY GAPS IN THE PUBLIC DEPOT SYSTEM"

DEPARTMENT OF DEFENSE COMMENTS TO THE RECOMMENDATIONS

RECOMMENDATION 1: The GAO recommended that the Secretary of Defense direct the Under Secretary of Defense for Acquisition, Technology, and Logistics, in conjunction with the appropriate military services activities, to revise depot maintenance core policy to include a forward look to incorporate future systems and equipment repair needs when developing core capability requirements and a direct link to the source of repair process. (Page 36/Draft Report).

DoD RESPONSE: Concur. It is anticipated that the revised DoD core policy will explicitly mandate a forward look to incorporate future systems and equipment repair needs when developing core capability requirements.

RECOMMENDATION 2: The GAO recommended that the Secretary of Defense direct the Under Secretary of Defense for Acquisition, Technology, and Logistics, in conjunction with the appropriate military services activities, to revise depot maintenance core implementation procedures and practices to establish criteria for determining what it means to have a capability in military depots to perform maintenance on mission essential systems in support of national defense emergencies and contingencies. (Page 36/Draft Report).

DoD RESPONSE: Concur with intent. It is important to remember that "core" is a capability. The concept of using "like" workloads is not questionable as the GAO asserts. For example, an automobile mechanic can perform work on Chrysler, Ford, and General Motors products, if the mechanic has tools, facilities and knowledge. The skills, facilities and knowledge are transferable. The same holds true within the Defense Department.

RECOMMENDATION 3: The GAO recommended that the Secretary of Defense direct the Under Secretary of Defense for Acquisition, Technology, and Logistics, in conjunction with the appropriate military services activities, to revise depot maintenance core implementation procedures and practices to prohibit the use of the risk assessment to the extent it results in the inclusion of private-sector capability within identified core capabilities. (Page 36/Draft Report).

DoD RESPONSE: Concur. It is anticipated that the revised DoD core policy will eliminate the use of the risk assessment.

RECOMMENDATION 4: The GAO recommended that the Secretary of Defense direct the Under Secretary of Defense for Acquisition, Technology, and Logistics, in conjunction with the appropriate military services, to revise depot maintenance core implementation procedures and practices to clarify the use of the adjustment factor and other elements of the computation methodology. (Page 36/Draft Report).

DoD RESPONSE: Concur. However, it should be noted that the adjustment factors will not be identical across the Services, but rather based on contingency simulations, logistics support analyses, and /or historical data for both peacetime and wartime operations.

RECOMMENDATION 5: The GAO recommended that the Secretary of Defense direct the Under Secretary of Defense for Acquisition, Technology, and Logistics, in conjunction with the appropriate military services activities, to revise depot maintenance core implementation procedures and practices to link core requirements to the budget process to ensure adequate funding of core support workload requirements. (Page 36/Draft Report).

DoD RESPONSE: Concur. It is anticipated that the revised DoD core policy will provide a linkage to the Planning, Programming and Budgeting System.

RECOMMENDATION 6: The GAO recommended that the Secretary of Defense direct the Under Secretary of Defense for Acquisition, Technology, and Logistics, in conjunction with the appropriate military services activities, establish expedited milestones for developing strategic and related implementation plans for the use of military depots that would identify desired short-and long-term core capabilities and associated human capital needs. These plans at a minimum should delineate workloads to be accomplished in each Service's depots, other Service's depots, by contractors at their own sites, and at government sites. (Page 36/Draft Report).

DoD RESPONSE: Concur. The Department will direct the military services to develop strategic plans for their maintenance depots.

RECOMMENDATION 7: The GAO recommended that the Secretary of Defense direct the Under Secretary of Defense for Acquisition, Technology, and Logistics, in conjunction with the appropriate military services activities, establish expedited milestones for developing strategic and related implementation plans for the use of military depots that would identify desired short-and long-term core capabilities and associated human capital needs. These plans at a minimum should discuss the role of in-house maintenance capability as an element of each Service's ability to respond to national defense emergencies and contingencies. (Page 36/Draft Report).

DoD RESPONSE: Concur. The Department will direct the military services to develop strategic plans for their maintenance depots.

RECOMMENDATION 8: The GAO recommended that the Secretary of Defense direct the Under Secretary of Defense for Acquisition, Technology, and Logistics, in conjunction with the appropriate military services activities, establish expedited milestones for developing strategic and related implementation plans for the use of military depots that would identify desired short-and long-term core capabilities and associated human capital needs. These plans at a minimum should identify infrastructure improvements designed to operate more efficiently. (Page 36/Draft Report).

DoD RESPONSE: Concur. The Department will direct the military services to develop strategic plans for their maintenance depots.

RECOMMENDATION 9: The GAO recommended that the Secretary of Defense direct the Under Secretary of Defense for Acquisition, Technology, and Logistics, in conjunction with the appropriate military services activities, establish expedited milestones for developing strategic and related implementation plans for the use of military depots that would identify desired short-and long-term core capabilities and associated human capital needs. These plans at a minimum should address human capital needs and the specific actions that will be taken to meet them. (Page 36/Draft Report).

DoD RESPONSE: Concur. The Department will direct the military services to develop strategic plans for their maintenance depots.

RECOMMENDATION 10: The GAO recommended that the Secretary of Defense direct the Under Secretary of Defense for Acquisition, Technology, and Logistics, in conjunction with the appropriate military services activities, establish milestones and accountability for developing policies to identify core logistics capabilities for non-maintenance activities to ensure in-house retention of needed capabilities. (Page 37/Draft Report).

DoD RESPONSE: Non-Concur. The Department of Defense has not identified any core logistics capabilities beyond those associated with "depot level maintenance and repair" as that term is defined in 10 USC 2460. Under these circumstances, the Department sees no need "to establish milestones and accountability for developing policies to identify core logistics capabilities for non-maintenance activities."

Related GAO Reports

Defense Logistics: Strategic Planning Weaknesses Leave Economy, Efficiency, and Effectiveness of Future Support Systems at Risk (GAO-02-106, Oct. 11, 2001).

Defense Logistics: Air Force Lacks Data to Assess Contractor Logistics Support Approaches (GAO-01-618, Sept. 7, 2001).

Human Capital: Major Human Capital Challenges at the Departments of Defense and State (GAO-01-565T, Mar. 29, 2001).

Defense Maintenance: Sustaining Readiness Support Capabilities Requires a Comprehensive Plan (GAO-01-533T, Mar. 23, 2001)

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High Risk Series: An Update (GAO-01-263, Jan. 2001).

Depot Maintenance: Key Financial Issues for Consolidations at Pearl Harbor and Elsewhere Are Still Unresolved (GAO-01-19, Jan. 22, 2001).

*Depot Maintenance: Action Needed to Avoid Exceeding Ceiling on Contract Workload*s (GAO/NSIAD-00-193, Aug. 24, 2000).

Defense Logistics: Integrated Plans and Improved Implementation Needed to Enhance Engineering Efforts (GAO/T-NSIAD-00-206, June 27, 2000).

Defense Logistics: Actions Needed to Enhance Success of Reengineering Initiatives (GAO/NSIAD-00-89, June 23, 2000).

Defense Logistics: Air Force Report on Contractor Support Is Narrowly Focused (GAO/NSIAD-00-115, Apr. 20, 2000).

Human Capital: Strategic Approach Should Guide DOD Civilian Workforce Management (GAO/T-NSIAD-00-120, Mar. 9, 2000).

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

Military Base Closures: Lack of Data Inhibits Cost-Effectiveness Analyses of Privatization-in-Place Initiatives (GAO/NSIAD-00-23, Dec. 20, 1999).

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Air Force Logistics: C-17 Support Plan Does Not Adequately Address Key Issues (GAO/NSIAD-99-147, July 8, 1999).

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Air Force Depot Maintenance: Management Changes Would Improve Implementation of Reform Initiatives (GAO/NSIAD-99-63, June 25, 1999).

Navy Ship Maintenance: Allocation of Ship Maintenance Work in the Norfolk, Virginia, Area (GAO/NSIAD-99-54, Feb. 24, 1999).

Army Industrial Facilities: Workforce Requirements and Related Issues Affecting Depots and Arsenals (GAO/NSIAD-99-31, Nov. 30, 1998).

Navy Depot Maintenance: Weaknesses in the T406 Engine Logistics Support Decision (GAO/NSIAD-98-221, Sep. 14, 1998).

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

Defense Depot Maintenance: Use of Public-Private Partnering Arrangements (GAO/NSIAD-98-91, May 7, 1998).

Defense Depot Maintenance: DOD Shifting More Workload for New Weapon Systems to the Private Sector (GAO/NSIAD-98-8, Mar. 31, 1998).

Defense Depot Maintenance: Information on Public and Private Sector Workload Allocations (GAO/NSIAD-98-41, Jan. 20, 1998).

Outsourcing DOD Logistics: Savings Achievable But Defense Science Board's Projections Are Overstated (GAO/NSIAD-98-48, Dec. 8, 1997).

Navy Regional Maintenance: Substantial Opportunities Exist to Build on Infrastructure Streamlining Progress (GAO/NSIAD-98-4, Nov. 13, 1997).

Air Force Depot Maintenance: Information on the Cost-Effectiveness of B-1 and B-52 Support Options (GAO/NSIAD-97-210BR, Sept. 12, 1997).

Defense Depot Maintenance: Uncertainties and Challenges DOD Faces in Restructuring Its Depot Maintenance Program (GAO/T-NSIAD-97-112, May 1, 1997) and (GAO/T-NSIAD-97-111, Mar. 18, 1997).

Defense Outsourcing: Challenges Facing DOD as It Attempts to Save Billions In Infrastructure Costs (GAO/T-NSIAD-97-110, Mar. 12, 1997).

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