



## Testimony

Before the Subcommittee on Military Readiness,  
Committee on Armed Services, House of Representatives

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# DEFENSE MAINTENANCE

## Sustaining Readiness Support Capabilities Requires a Comprehensive Plan

Statement of David R. Warren, Director, Defense Capabilities and  
Management



Mr. Chairman and Members of the Subcommittee:

I am pleased to be here today to discuss major weaknesses and challenges in the Department of Defense's (DOD) depot maintenance program. We recently reported on management challenges at DOD, and logistics was one of the areas addressed.<sup>1</sup> A key part of DOD's total logistics system, depot maintenance helps to meet the readiness and sustainability requirements of thousands of major weapons and millions of equipment items. Depot maintenance requires extensive shop facilities, specialized equipment, and highly skilled technical and engineering personnel to perform major repairs, overhauls, and modifications of weapons and components, to completely rebuild parts and end items, to modify systems and equipment by applying new or improved components, or to manufacture parts unavailable from the private sector. The Department also uses thousands of contractors to provide depot maintenance capability.

As requested, my testimony today will (1) provide a perspective about how the Department's depot maintenance program has changed since 1987, (2) highlight some of the management weaknesses we have identified in prior and ongoing work on DOD's logistics system in general and more specifically the depot maintenance programs, and (3) discuss some key issues we believe the Department should address to help its maintenance programs achieve desired readiness and sustainability capabilities in an economical manner. Appendix I lists our related reports in this area.

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<sup>1</sup> *Performance and Accountability Series: Major Management Challenges and Program Risks (Department of Defense)* (GAO-01-244, Jan. 2001).

## SUMMARY

The period 1987 to 2001 has brought major change for the entire Defense Department and for DOD's depot maintenance program. The primary event that framed these changes was the end of the cold war and the associated military force structure downsizing. With these change agents at work, three series of actions primarily shaped the depot maintenance environment. First, the base realignment and closure process has reduced DOD's cold-war-oriented infrastructure from 38 military depots to 19. While the services have implemented some initiatives to improve the efficiency of the remaining industrial facilities, they have generally not invested in depot plant equipment to establish new capability and advanced technologies. Second, as recommended in various studies, the Department has implemented a policy change placing increased reliance on defense contractors for depot maintenance and related logistics activities. Contractors' share of depot maintenance funding has increased by 90 percent while the military depots' share of funding has declined by 6 percent. Although workload production data is not available for contract work, the military depots' production hours are down 64 percent during this period. This policy shift to the private sector has most directly affected workloads for new and upgraded systems, which are largely going to the private sector. Third, depot maintenance personnel have been reduced by 59 percent, the third highest percent of any category of DOD civilian personnel. Today DOD has a smaller public sector depot structure, with less modern facilities and equipment and fewer maintenance personnel.

DOD has not effectively managed the restructuring of its depot maintenance and related programs. As the changes we discussed were occurring, our work was showing a lack of comprehensive policies and plans for managing the changes that were taking place. This has particularly been the case since 1996 when DOD announced its policy preference for relying on the private sector for most maintenance support. In our prior and ongoing reviews of defense maintenance and related logistics issues, we have identified a number of management weaknesses in the areas of policy, planning, recapitalization, human capital issues, financial management, performance of maintenance programs, and meeting legislative requirements. Taken together these weaknesses indicate that the Department has significant opportunities to improve the economy, efficiency, and effectiveness of its public and private sector depot maintenance activities. For example

While the Department is implementing policy that expresses a preference for performing maintenance and related logistics activities using contractors, the analysis needed to determine if this approach is the most cost effective has not been done. Further, pilot programs designed to test the cost-effectiveness of the new support approach are not providing meaningful results in a timely manner.

Additionally, weaknesses in the Department's implementation of its policy for identifying core logistics capability requirements--critical capability that should be retained by the military depots--could affect future readiness and sustainability support. Specifically, the depot maintenance core policy does not address future requirements and the Department has not implemented a core policy for other logistics activities.

The services have not structured their downsizing in such a way as to ensure continued revitalization of the military depots with respect to workload, depot plant equipment, and trained personnel.

The Department continues to lack timely and accurate financial management information that is essential for supporting effective decision-making regarding the Department's maintenance and other logistics activities.

The services continue to struggle to improve depot programs, processes, and operations and make maintenance services, whether acquired from the public or private sector, more efficient while meeting operational requirements.

The services face challenges complying with statutory requirements regarding the allocation of depot maintenance work between the public and private sectors.

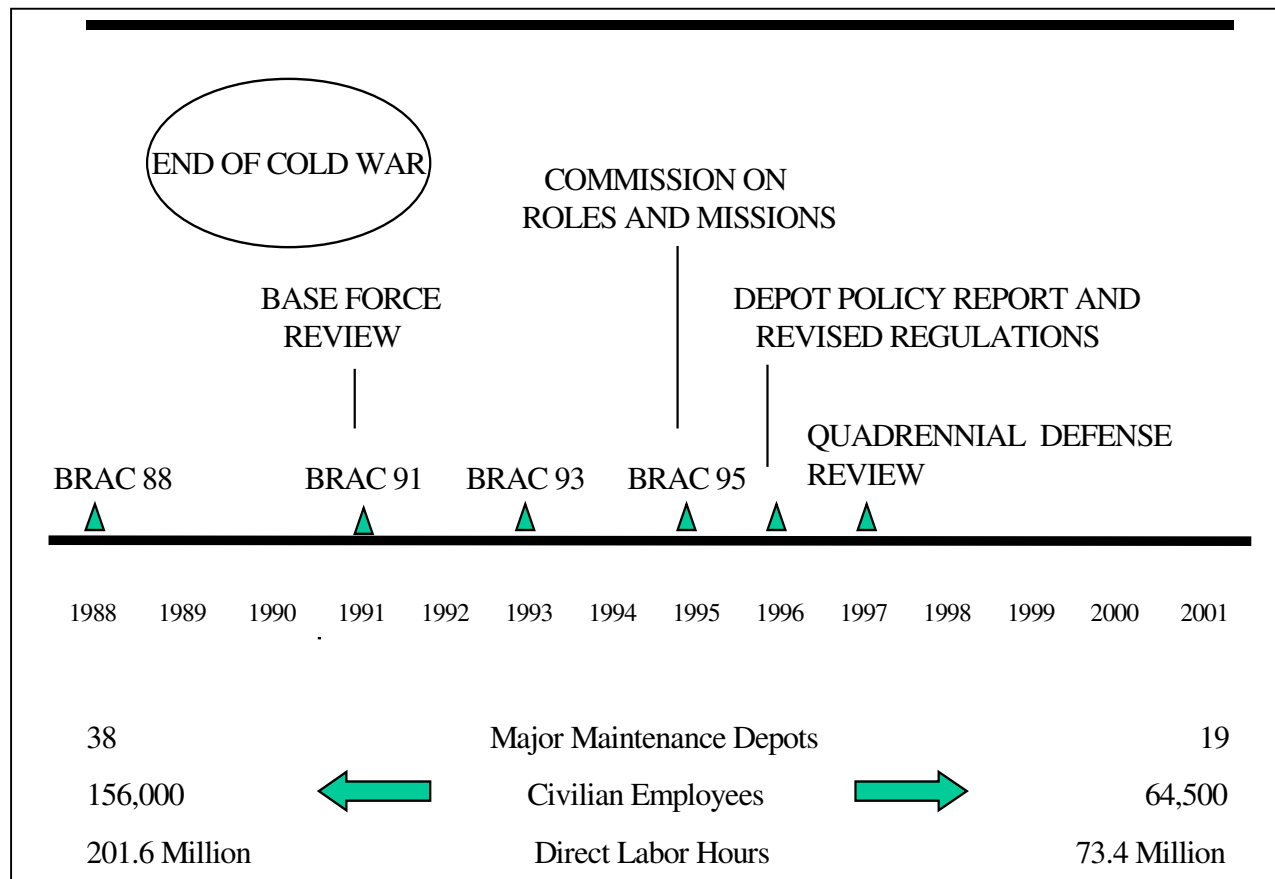
As our recent performance accountability report on defense notes, logistics activities represent a key management challenge. Maintenance is an important element of those activities, and DOD is at a critical point with respect to the future of its maintenance programs that is linked to its overall logistics strategic plan. The maintenance plan needs to set forth the roles that will be played by the public and private sectors once the change process is complete in providing required readiness and sustainability of the military forces at an economical cost. This plan also needs to link to the resources needed in the public and private sectors to establish and maintain required capability, including infrastructure, information systems, trained personnel, and plant equipment, as well as a funding plan to support the acquisition of these resources. Further the plan needs to identify performance measures associated with the desired readiness and cost-effectiveness outcomes for maintenance activities. Without such an approach, it is

unclear whether future public and private sector maintenance capabilities will meet the Department's readiness and sustainment needs cost-effectively.

DEPOT MAINTENANCE FROM 1987 to 2001: A PERIOD OF FACILITIES CLOSING AND REALIGNMENT, CONTRACTING OUT, AND PERSONNEL DOWNSIZING

The DOD depot maintenance program has changed significantly since 1987, the year the program was at its peak in terms of workload, people, and facilities. The primary event that framed these changes and put certain key actions into motion was the end of the cold war and the associated force structure downsizing. A number of other diverse, but interrelated, factors such as threat changes, new war-fighting plans, and changes in maintenance concepts influenced defense downsizing. With these change agents in the works, the Department began restructuring its depot maintenance program. This restructuring primarily has been achieved through three series of actions: (1) the base realignment and closure (BRAC) process, which was designed to reduce DOD's infrastructure; (2) increased reliance on the private sector for depot maintenance support; and (3) a major downsizing of depot maintenance personnel. Today, DOD has a smaller public sector depot structure, with less modern facilities and equipment and fewer maintenance personnel. Also, the Department has increased reliance on the private sector to perform depot maintenance activities. Figure 1 shows key events influencing the Department's downsizing of its public depot system.

Figure 1: Key Events Influencing the Reshaping of the Military Depot System



Source: Department of Defense

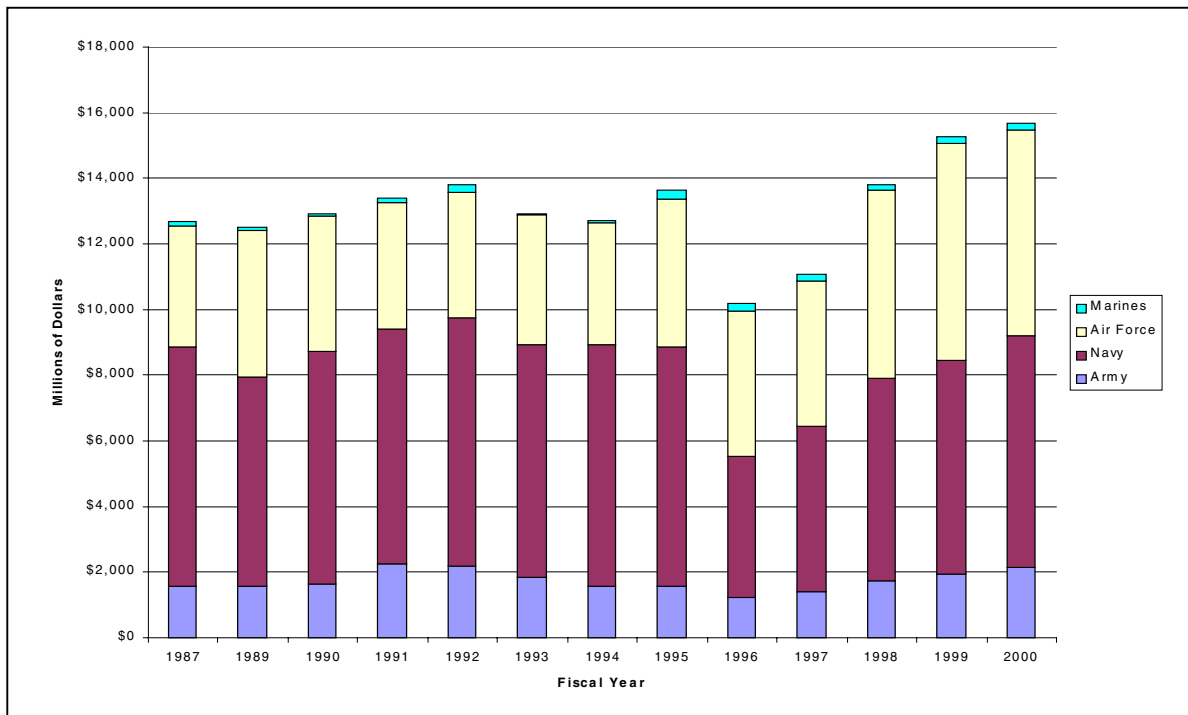
### Impact of Base Realignment and Closure Process

In 1987, when the DOD maintenance infrastructure was at its peak to support DOD's cold war force structure against the threat of a protracted land war in Europe, the depot system consisted of 38 major public depot activities with facilities and equipment with a reported value of about \$20 billion.<sup>2</sup> The funding for work performed in the public depots that year was \$8.7 billion, representing about 69 percent of the Department's

<sup>2</sup> According to DOD, major maintenance depots are those employing more than 400 federal government personnel to support depot-level maintenance workloads.

\$12.7 billion depot maintenance program. The percentage of total funding for depot maintenance work performed in the public sector declined to 52 percent of the \$15.8 billion depot maintenance program in fiscal year 2000. Figure 2 shows the depot maintenance funding trends for each of the military services during fiscal years 1987-2000.

Figure 2: Depot Maintenance Funding Trends: Fiscal Years 1987-2000



Source: Department of Defense. Data for 1988 was not available. Funding is in then-year dollars.

On average, the funding for the depot maintenance program has increased over this period by about \$3.1 billion.<sup>3</sup> While the number of systems being maintained has declined, system complexity and age have increased, increasing the amount of depot maintenance work required for many systems. For example, in 2001 the average amount

<sup>3</sup> When inflation is taken into consideration, over the 14-year period the depot maintenance program has declined by 13 percent.



of work for a C-141 overhaul is about 9200 hours or one-third more than the average amount of work in 1987. Much of the additional work is required to repair airframe cracks, fuel tank leaks, other problems related to the C-141's age and heavy use.

Since 1988 and the end of the cold war, DOD has downsized the public sector depots, primarily through the congressionally authorized BRAC process.<sup>4</sup> The military depot system in each of the services had been developed to provide a large excess capacity that while necessary to support a protracted war in Europe, no longer seemed appropriate for the post cold-war threat. When the fourth round of the BRAC processes is completed in July 2001, 19 of the 38 public sector maintenance depots that existed in 1987 will remain in operation as government-owned and -operated activities, primarily supporting DOD maintenance but with several diversifying to also support commercial customers.

Additionally, most of the remaining military depots are smaller in size as equipment has been consolidated and facility footprints downsized. Some of the prior military facilities were privatized and continue to function as maintenance activities. Figure 3 shows the location of the remaining 19 major military maintenance depots—four Air Force,<sup>5</sup> five Army, two Marine Corps, three Navy aviation, four Navy ship, and one Navy weapons center<sup>6</sup>.

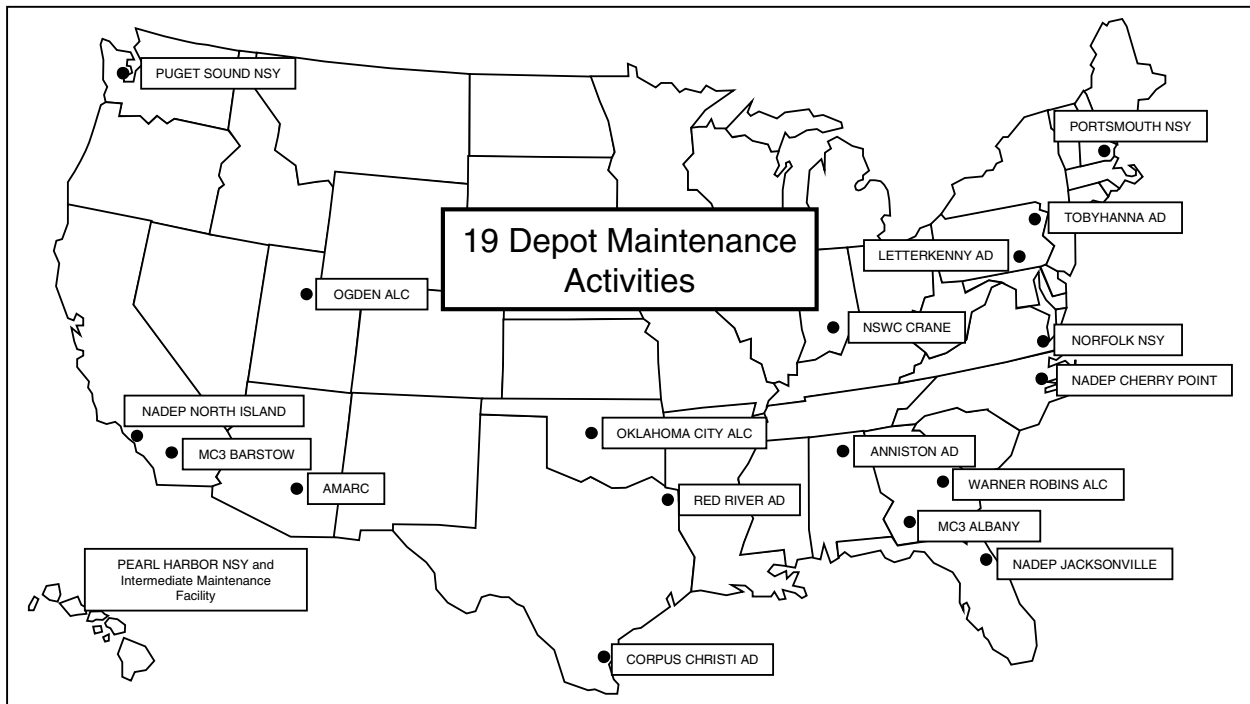
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<sup>4</sup> 10 USC 2687 note, P.L. 101-510 (1990).

<sup>5</sup> Of the four Air Force facilities, one is the Aerospace Maintenance and Regeneration Center, a facility whose primary function is to store aircraft removed from the inventory and provide parts to support Air Force requirements for inservice systems.

<sup>6</sup> A second Navy weapons center is not considered a major depot activity because it employs less than 400 personnel—the minimum staffing level DOD identifies for facilities identified as major depot facilities.

Figure 3. The DOD Depot Maintenance System



Source: Department of Defense

As of 2001, the equipment and facilities in the remaining depots have a reported value of about \$16.1 billion. Information is not available regarding the number of contractor facilities in which the tens of thousands of depot-level maintenance contracts are being performed or the value of the equipment that is involved. Increasingly, the Department is contracting for a variety of logistics activities that may include supply and weapon system support, engineering, configuration management, maintenance, and a variety of other functions, but no central database provides reliable information about depot maintenance contracting.

While the BRAC process reduced the number of depot facilities, it did not address opportunities to reduce inefficiencies in the remaining depots or in government-owned,

contractor-operated facilities, or with respect to the Department's efficiency in contracting for depot maintenance resources. Since then, DOD has begun a series of initiatives to enhance the cost and effectiveness of its remaining depot activities. Some of the initiatives focused on how to better utilize depot capability and capacity through workload consolidations, public-private competitions, and reengineering depot maintenance processes.

### Increased Use of the Private Sector Capabilities for Depot Maintenance Work

With force structure downsizing and less money being spent for new procurements, defense contractors sought an increasing share of the depot maintenance work. Subsequently, various DOD officials and advisory groups called for contracting with the private sector for more depot maintenance and other logistics work. For example, a May 1995 report by the Commission on Roles and Missions made recommendations across the spectrum of missions and functions performed by DOD activities, generally concluding that outsourcing, or privatization, was the way to go for both existing and future requirements, particularly for commercial-type support activities and depot maintenance. Similarly, the Defense Science Board, in a series of studies, also called for increased outsourcing, noting that DOD should get out of the materiel management, distribution, and repair business by expanding its use of contractor logistics support for all fielded weapon systems.

These proposals resulted in a shift in Office of Secretary of Defense policy from a general preference for performing depot maintenance work for most mission-essential weapon

systems in the military depots. Under the old approach, commercial items, classified systems with special security requirements, and high-cost, low-volume systems were frequently maintained in the private sector for the life of the system. DOD adopted the new approach, which broadened the target market for long-term contractor logistics support to all categories of new and upgraded weapon systems, as acquisition program managers assumed a more prominent role in the decision-making process for determining how weapon systems would be supported through their life cycles and as the Department formalized its policy preference for private sector support in DOD regulations governing the acquisition of major systems.

In implementing this policy, the amount of funding provided for depot maintenance performed in the private sector increased by 90 percent between 1987 and 2000, while the percentage performed in military depots over that period declined by 6 percent, as shown below in table 1.

Table 1: Public and Private Sector Change in Depot Maintenance Funds <sup>7</sup>  
Dollars in billions

Sector	Fiscal year 1987	Fiscal year 2000	Change in dollar amount	Percent change
Public	\$ 8.7	\$ 8.2	\$- .5	-6
Private	4.0	7.6	3.6	+90
<b>Total</b>	<b>\$12.7</b>	<b>\$15.8</b>	<b>+\$3.1</b>	<b>+24</b>

Source: DOD data

Several legislative requirements play a significant role in the management of depot activities. For example, 10 U.S.C. 2464 provides that DOD is to identify a core logistics

<sup>7</sup> Dollar amounts are expressed in then-year dollars, which means that the 2000 amounts reflect some increases due to inflation.

capability that is to be government-owned and -operated and that is sufficient to ensure the technical competence and resources necessary for an effective and timely response to a mobilization or other national emergency. Section 2466 of title 10 prohibits the use of more than 50 percent of the funds made available in a fiscal year for contractor performed depot-level maintenance and repair. Section 2469 of title 10 provides that DOD not change depot-level maintenance and repair workloads valued at \$3 million or more to contractor performance without a competition among public and private sector entities. A related provision in 10 USC 2470 provides that depot-level activities are eligible to compete for depot-level maintenance and repair workloads.

DOD officials have stated that the Department will implement its new policy on outsourcing within the context of legislative requirements. At the same time, DOD has sought legislative changes that would eliminate restrictions related to depot-level maintenance workload allocations. For example, DOD has previously requested elimination of the 10 U.S.C. 2466 provision requiring that 50 percent of depot maintenance and repair work is done in government depots. Alternatively, the Congress has expressed concern about the changes in policies that have resulted in significant reductions in core capability and almost no core capability being identified for critical systems such as the F-117 fighter aircraft and the C-17 transport aircraft. As a result, Congress has taken little action on the Department's legislative proposals, except that the limitations on the amount of depot maintenance work that can be performed in the private sector was increased from 40 to 50 percent.<sup>8</sup>

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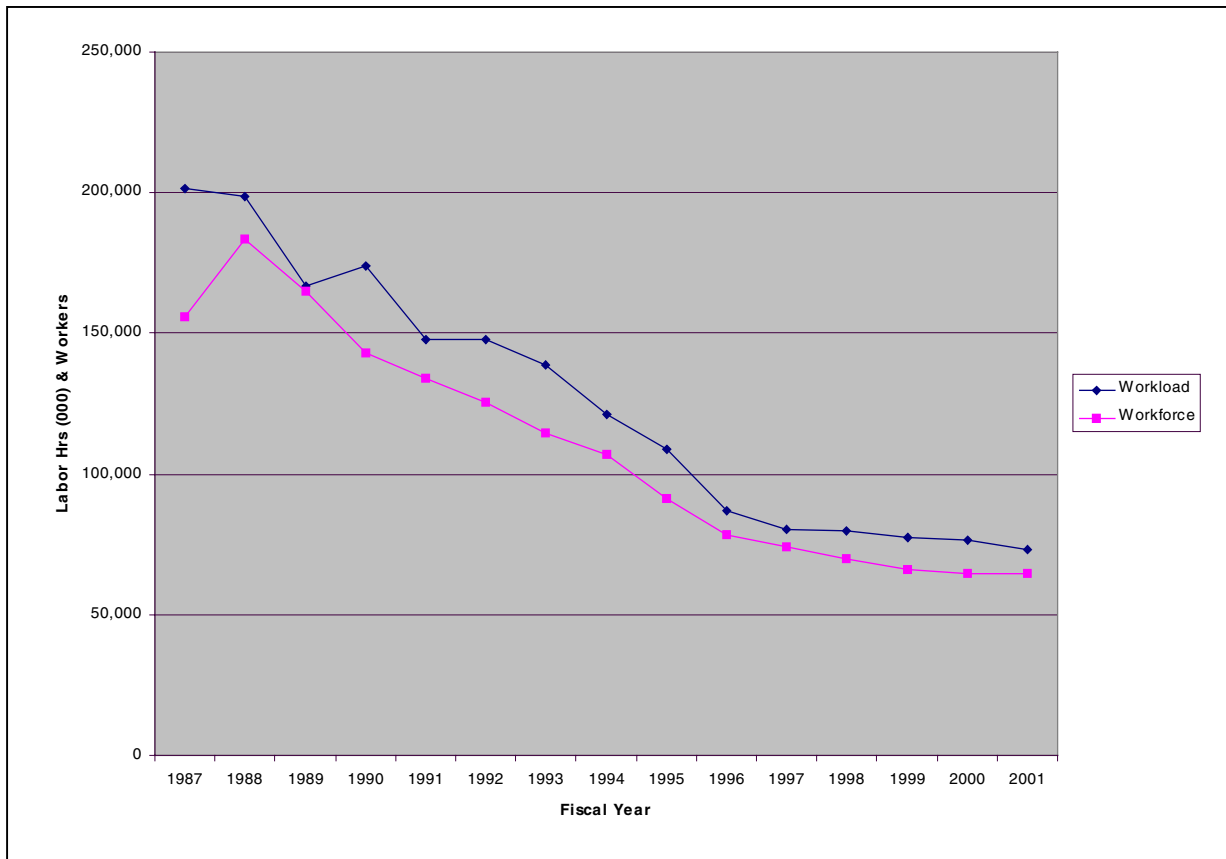
<sup>8</sup> National Defense Authorization Act for Fiscal Year 1998, P.L. 105-85, section 357.

## Personnel Downsizing

With base realignment and closure actions, increased contracting of depot maintenance work, and pressures to reduce the size of DOD's civilian workforce, the number of depot-level maintenance employees has declined significantly. DOD estimates that in fiscal year 2001, about 64,500 employees will be assigned as depot-level maintenance personnel, down from a high of 156,000 in fiscal year 1987. While all categories of military and civilian employees have been reduced since that year, depot maintenance workers was the third highest category of civilian workers reduced. Over that period DOD's total civilian workforce was reduced by 387,000—a 37 percent reduction. The percentage change varied by the 31 categories of personnel. For example, the number of educators and financial management personnel increased slightly, while logistics clerks were reduced by 74 percent, data systems managers by 29 percent, installation maintenance personnel by 30 percent, and depot maintenance personnel by 59 percent.

Defense downsizing also brought about a decline in total depot-level maintenance workloads. DOD statistics for fiscal years 1987 to 2001 show that the public sector workload declined from about 201.6 million direct labor hours to about 73.4 million direct labor hours, a 64-percent reduction. Figure 4 shows historical trends in depot maintenance personnel and direct labor hours.

Figure 4: Depot-Level Workload and Personnel Trends



Source: Department of Defense

MANAGEMENT WEAKNESSES IN DOD'S MAINTENANCE AND RELATED LOGISTICS PROGRAMS

DOD has not effectively managed the restructuring of its depot maintenance and related programs. As the changes we discussed were occurring, our work was showing a lack of comprehensive policies and plans for managing the changes that were taking place. This has particularly been the case since 1996 when DOD announced its policy preference for relying on the private sector for most maintenance support. In our prior and ongoing reviews of defense maintenance and related logistics issues, we have identified a number

of management weaknesses in the areas of policy, planning, recapitalization of equipment and facilities, human capital management issues, financial management, efficiency and effectiveness of the performance of maintenance programs, and meeting legislative requirements. Taken together these weaknesses indicate that the Department has significant opportunities to improve the economy, efficiency, and effectiveness of its public and private sector depot maintenance activities.

### Policy Cost and Effectiveness Issues

Since the mid-1990s, the Department has been pursuing policy changes that place greater reliance on the private sector for the management of logistics processes and operations, including maintenance, with the expectation that these changes will provide improved operational support and reduce costs. Through prior work and the interim results of an ongoing review, we have identified several policy issues that affect the cost and effectiveness of current and future depot maintenance programs. These include (1) uncertainties regarding the cost-effectiveness of policy changes shifting logistics and depot maintenance work to the private sector, (2) weaknesses in pilot programs intended to evaluate cost-effectiveness, and (3) weaknesses in core policy that should affect the identification of activities that are retained by the government.

#### Uncertainties Regarding Cost Effectiveness

DOD justified its outsourcing initiatives based on studies by the Commission on Roles and Missions and the Defense Science Board that discussed the success of commercial sector outsourcing initiatives. The Department also used the studies' projected savings from prior competitive sourcing of commercial-type activities through the Office of



Management and Budget A-76 process as a basis for estimating savings of 20 percent or more for contractor performance of outsourcing logistics activities such as depot maintenance. However, as we reported, these savings are not likely to be achievable for depot maintenance because the conditions assumed by the Commission and the Board do not exist for most depot maintenance contracts.<sup>9</sup> The commercial activities competed were very dissimilar to depot maintenance because they involved relatively simple, routine, and repetitive tasks that did not generally require large capital investment or highly skilled and trained personnel. Public activities competed and won about half of the competitions and many private sector firms made offers for the work due to the highly competitive nature of the market. We concluded that the projected savings generally resulted from competition rather than from contractor performance. In a 1998 report, we pointed out that it is uncertain whether attempting to rely on competitive market forces to assure quality products and fair prices for depot maintenance and other logistics activities would function as expected.<sup>10</sup> Thus, it is important that the Department establish baselines for assessing the realism of savings assumptions as a part of its evaluation of these new support concepts. Nonetheless, our more recent past and ongoing work indicates that the Department has not analyzed the extent to which projected savings from contracting depot maintenance have occurred.

#### Pilot Programs Have Weaknesses

In June 2000 we reported that the Department had established 30 pilot programs to test various logistics reengineering initiatives, many of which involved contracting for

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<sup>9</sup> *Defense Depot Maintenance: Commission on Roles and Mission's Privatization Assumptions Are Questionable* (GAO/NSIAD-96-161, July 15, 1996). *Outsourcing DOD Logistics: Savings Achievable But Defense Science Board's Projections Are Overstated* (GAO/NSIAD-98-48, Dec. 8, 1997).

<sup>10</sup> *Defense Depot Maintenance: Contracting Approaches Should Address Workload Characteristics* (GAO/NSIAD-98-130, June 15, 1998).

logistics activities through various long-term contracting arrangements such as prime vendor support and contractor logistics support.<sup>11</sup> We noted that DOD planned to use the 30 pilot programs to measure reductions in ownership costs resulting from the use of these concepts, generate information to develop future models for reengineering and policy changes, and fully implement reengineered support strategies Department-wide by 2005. We concluded that it was too early to assess the cost and performance impact of these initiatives, and further, plans to test and evaluate them had shortcomings that could limit their usefulness in assessing their cost-effectiveness. An ongoing review indicates that the pilots continue to have major limitations for evaluating the cost-effectiveness of restructured processes such as the long-term use of contractors to replace much of the current support provided by government civilians. The test results of most pilot programs are not likely to demonstrate a clear link to specific reengineered concepts. Even if documentable savings do occur, it will not be evident whether these savings are the result of using reengineered processes or other actions such as investments in new hardware. If the pilots do not provide such information, the Department may not have an analytical basis for evaluating the cost-effectiveness of ongoing logistics and depot maintenance contracting initiatives. Further, even if the pilot programs could demonstrate savings in the short term, it is unclear whether longer-term benefits could be achieved given that the approaches generally involve long-term sole-source contracts in a diminished competitive environment.

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<sup>11</sup> *Defense Logistics: Actions Needed to Enhance Success of Reengineering Initiatives* (GAO/NSIAD-00-89, June 23, 2000).

It is also uncertain whether transferring the long-term maintenance, engineering, and supply support of defense systems to the private sector will reduce or increase the cost of providing required military readiness. Our ongoing analysis of Air Force systems supported by contractor logistics support indicates the Air Force does not have the data necessary to evaluate whether it is achieving the cost and performance it estimated. In the one system for which comparative data was maintained—the B-2—significant cost growth has resulted including about 120 percent increase in aircraft overhaul over a 5-year period. Additionally, a March 2001 DOD inspector general report stated that the industrial prime vendor program implemented at the North Island repair depot had not reduced total logistics costs, improved financial accountability, streamlined the defense infrastructure, or added value to the defense supply system.<sup>12</sup> Thus, questions remain regarding the cost-effectiveness of recent contracting initiatives, and at this point it is uncertain whether the information is available to support the required analyses to provide answers to these questions.

#### Core Policy Has Weaknesses

In both 1996 and 1998 we reported that the Department's new policy for determining source of repair for defense systems had weaknesses that could impact the retention of core logistics capabilities that are supposed to be identified and retained by the military to ensure the support of mission essential weapon systems.<sup>13</sup> We determined that core requirements were inconsistently developed and did not always influence source-of-repair decisions on new systems. We have noted similar problems during our ongoing

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<sup>12</sup> *Industrial Prime Vendor Program at the Naval Aviation Depot – North Island* (Report No. D-2001-072, Mar. 5, 2001).

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

review of DOD's management of identifying core logistics capabilities under 10 USC 2464. For example, each of the services has developed its own procedures and assumptions for computing core depot maintenance requirements, resulting in inconsistent implementation and different outcomes in computing core workload requirements.

Further, the Department's depot maintenance core policy has other shortcomings that undermine its usefulness in ensuring public depots acquire and retain essential skills for supporting mission essential weapon systems. Specifically, the process does not incorporate future requirements to ensure that core capability can be established in a timely manner for new and upgraded weapon systems. For example, in fiscal year 2000, about 9 percent of the Marine Corps' depot workload was associated with the family of 5-ton trucks. This has been identified as core work. The Medium Tactical Vehicle Replacement is replacing the 5-ton truck, but workload for the replacement vehicle has not been designated as core. Further, Marine Corps officials did not follow DOD's formal source-of-repair decision-making procedures, a situation we have also identified for other programs. Instead, in consonance with current acquisition policy, acquisition program officials decided to establish a long-term contractor logistics support agreement for the new vehicle. Based on this decision, the Marine Corps depots are losing a substantial portion of their future workload.

Our ongoing review has also determined that the Department has significant gaps in core policy in identifying essential logistics activities needed to be performed by government personnel, such as supply management, engineering support, and transportation. This is

a serious issue given DOD's continuing plans to contract for many of these activities, but the Department has not established procedures for identifying those logistics activities that need to be retained by the government.

### Planning Weaknesses

The Department lacks a long-term plan for depot-level maintenance that links future requirements with the resources needed to establish required capability, including infrastructure, information systems, trained personnel, and plant equipment, as well as a funding plan to support the acquisition of these resources. This is a continuing problem relating to shortcomings in the Department's overall planning for all logistics programs and activities.

#### Reengineering Plans Are Fragmented

Our June 2000 report on defense logistics reengineering addressed the Department's need for an overall logistics plan. We pointed out that DOD had taken some steps to reengineer its logistics support activities. For instance, it had outlined important principles and concepts that it wanted to test for broader application in logistics restructuring. However, it had not developed an overall plan to link its broad reengineering goals to the approximately 400 individual service initiatives that were already under way to improve the logistics support system. Although the services had been directed to develop a plan that links their initiatives to DOD's overall vision, it was unclear how these individual service plans would be integrated into the overarching plan. Finally, we concluded that the planned DOD-wide logistics reengineering completion date of 2005 was questionable.

### Army is Making Improvements

In 1998 we reported that the Army was facing multiple difficult challenges and uncertainties in determining staffing requirements and in improving the efficiency and effectiveness of its industrial activities.<sup>14</sup> Workload assigned to Army depots had dwindled significantly in recent years, and the depots had large amounts of underutilized facilities and excess capacity that had made the depots more inefficient and had driven up the price that the depots charged their customers. We noted that the Army did not have an adequate long-range plan that dealt with these critical issues.

Since that time the Army has worked on a plan to improve the efficiency and effectiveness of its depots. Our ongoing work indicates that while these efforts are a step in the right direction, further action is needed. For example, Army depots are still underutilized, yet depot work continues to be performed at field-level activities. Additionally, what specific work the depots will get as a part of the Army's recapitalization program, what facility and equipment upgrades may be needed to prepare the depots for this work, and whether the required numbers of trained personnel will be available when needed are uncertainties.

### Air Force Working on Plan to Deal With Workload Allocation Problem

In part because of concerns about its compliance with statutory limits on contractor performance of depot maintenance, the Air Force is evaluating its depot strategy and implementation. This assessment includes looking at core maintenance requirements and plans and costs for modernizing facilities and acquiring core capabilities. In

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<sup>14</sup>*Army Industrial Facilities: Workforce Requirements and Related Issues Affecting Depots and Arsenals* (GAO/NSIAD-99-31, November 30, 1998).

December 1999 the Secretary of the Air Force approved a depot maintenance strategy that requires the Air Force to sufficiently workload three viable depots with core and other workloads for which the Air Force is the best value performer or last source.

Acquisition and logistics officials were directed to review current and future workloads, the type of technologies and advanced repair processes needed for those workloads, and the associated resources for acquiring and retaining core capabilities. This review identified facility problems, including constrained capacity, production inefficiencies, and aging equipment. Officials are trying to develop an integrated, corporate approach and long-term depot strategy to address capitalization requirements for facilities and equipment, declining workforce issues, public-private partnering opportunities, and other problems as well as to evaluate depot funding issues, particularly with regard to capital investments. However, the plan is still under development, funding requirements have not been budgeted, and we have seen no substantive change in sourcing decisions to indicate that new and upgraded systems will be assigned to military depots for repair.

### Recapitalization Issues

Downsizing, closures, and preferences for contracting new workloads combined in the 1990s to limit investments in depot facilities and equipment and contributed to general deterioration and less than modern conditions and capabilities at DOD maintenance depots. Particularly, funding was limited for acquiring new workloads and advanced production processes critical to retaining future capabilities. Since program managers have been assigning future maintenance work to the private sector, they have not funded

the purchase of plant equipment to support the repair of new and upgraded systems by military depots.

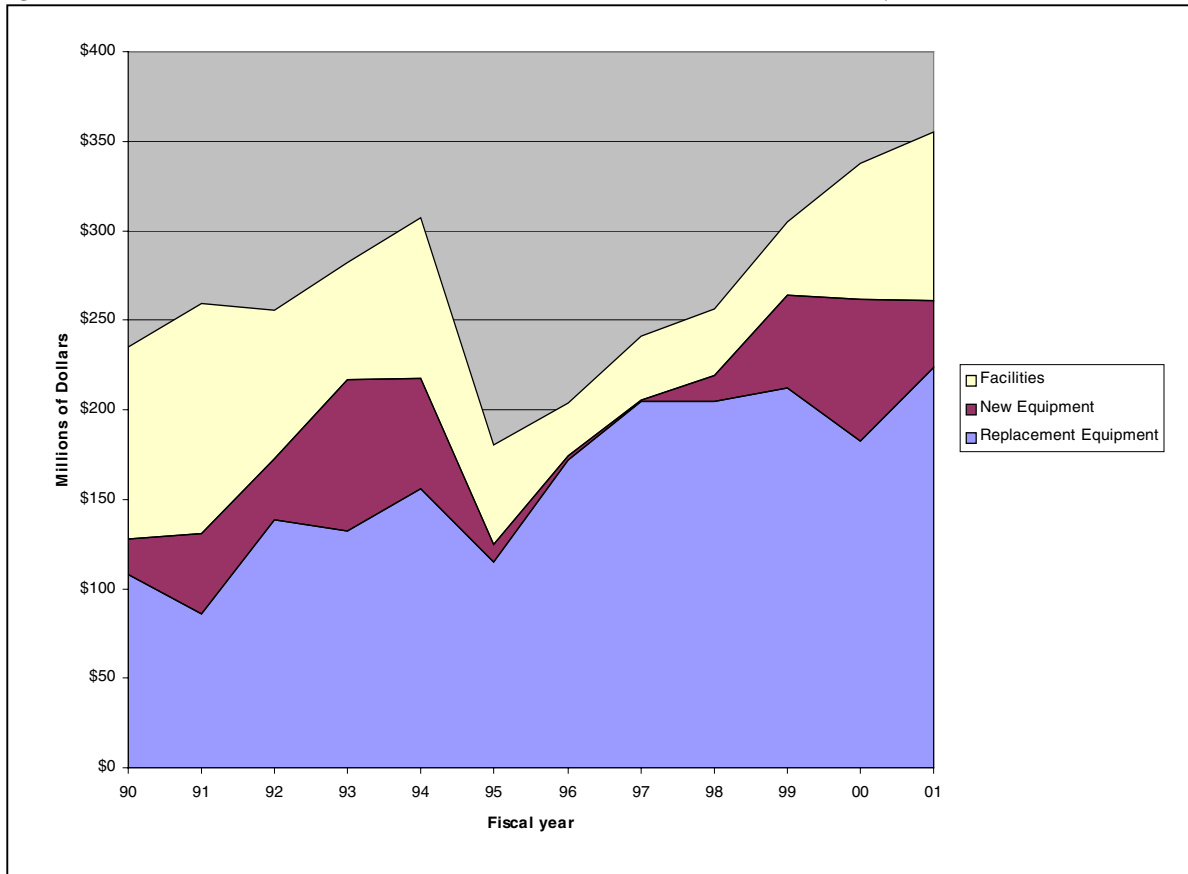
In an ongoing review, we found that program managers have funded little equipment in the depots since 1995 to establish capability in the depots for new or upgraded weapon systems or advanced technologies. Other sources of funds for capital investments are mostly geared to replacing existing facilities and worn out equipment. Funding for military construction projects at depots has been constrained for years, and officials estimate that only about 10 percent of the funded projects were for new capabilities. For example, a 1998 project at the Corpus Christi Army Depot provided a power train cleaning facility to add capability to clean new, specialized metals on Apache and Blackhawk helicopters. A 1999 project to renovate facilities at the Tobyhanna Army Depot supports tactical missile maintenance workloads moved from the Letterkenny Army Depot as a result of a 1995 BRAC decision. The capital purchases program<sup>15</sup> primarily funds replacement equipment for depreciated assets. Although funding has increased in recent years, about 40 percent of the funding over the past 7 years was for general-purpose computers and software, which while necessary, do not directly contribute to depot utilization or production. Further, funding to address environmental problems was a high priority, but did not improve the depots' productive capability. Figure 5 shows the Department's capital investment for depot facilities and equipment for fiscal years 1990-2001.

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<sup>15</sup> Equipment depreciation expenses that are built into the maintenance rates charged fund the capital purchases program by the military services' defense working capital funds.



Figure 5: Capital Investment in Depot Facilities and Equipment (Fiscal Years 1990-2001)



Source: Department of Defense

### Human Capital Issues

The downsizing of depot maintenance personnel, which was accomplished through a combination of reductions in force, attrition, and hiring freezes now presents DOD with significant human capital challenges. If the military maintenance depots are to remain viable industrial facilities in the long-term, over the next few years, the Department will need to hire, train, and retain skilled workers that are essential for retaining required logistics capabilities.

Reductions in the civilian workforce by more than half since the end of the Cold War has led to an imbalance in age, skills, and experience. With upwards of 50 percent of the remaining depot workers being eligible to retire within the next 5 years, future capabilities are jeopardized. If the depots maintain their current workloads, a much-expanded hiring and training program will be required to replace retiring workers. One Army depot official told us that the aging workforce is the depot's number one problem after getting new work. Marine Corps officials told us that while the Marine Corps has an aging workforce problem, the primary challenge is lack of work. Over the next 2 years the Marine Corps is projecting a 26-percent reduction in its depot maintenance workforce as older systems are phasing out and maintenance and repair work for new systems is going to the private sector. Thus, a critical factor that must be addressed before the Department can assess the magnitude of its human capital issues is what will be the Department's requirement for depot workers.

In our January 2001 report high-risk series report<sup>16</sup> we designated human capital as a new government-wide high-risk area because of the pervasive challenge it represents across the federal government. In our March 2000 testimony, we stated that a number of factors suggest that this is an especially important time for DOD to assess its human capital policies and practices.<sup>17</sup> Because of downsizing and proposed new business practices, DOD needs a strategic approach to human capital planning. We suggested a five-part self-assessment framework that we believed could be useful in aligning human capital management with DOD's mission, goals, and other needs and circumstances. In our view

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<sup>16</sup> *High-Risk Series: An Update* (GAO-01-263, Jan. 2001).

DOD must define the kind of workforce it will need in the coming years, develop plans for creating that workforce, and follow up with actions and investments needed so that when the future arrives, the right employees—with the right skills, training, tools, structures, and performance incentives—will be on hand to meet it. While we made these observations about DOD civilian employees in general, they are particularly pertinent to DOD’s depot maintenance workforce. However, our ongoing work suggests that some additional personnel policy and legislation may be needed. For example, a flexible hiring authority to allow depots to hire at an entry level to meet anticipated future shortfalls and lessen the impact on productivity during training could be a useful tool in managing the aging workforce problem.

#### Financial Management Needs Improvement

We have reported that DOD lacks timely and accurate financial management information that is essential for supporting effective decision-making regarding the Department’s maintenance and other logistics support activities. Without more reliable financial and other management information and effective internal controls, DOD cannot ensure adequate accountability. Also, lacking this information, decisionmakers and managers are deprived of valuable tools to control costs and address pressing management problems draining resources that could be better used to increase readiness and meet other priorities such as weapon system modernization. While the Department has more recently devoted significant attention to addressing these problems, financial

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<sup>17</sup> *Human Capital: Strategic Approach Should Guide DOD Civilian Workforce Management* (GAO/T-GGD/NSIAD-00-120, Mar. 9, 2000).

management remains a high-risk area. Ineffective asset accountability and a lack of internal controls continue to adversely affect visibility over inventories. Moreover, unreliable cost and budget information negatively affect the Department's ability to effectively measure performance, reduce costs, and maintain adequate control.

To illustrate the problem, in 2000, we reported that for years the Air Force's depot maintenance activity group<sup>18</sup> had experienced difficulties in accurately budgeting for material costs, workforce productivity, and savings to be achieved through productivity improvements and other reform initiatives.<sup>19</sup> These difficulties had adversely impacted the group's financial operations, resulted in hundreds of millions of dollars in operating losses, and limited the group's ability to provide timely support to its customers.

Although actions are underway that are intended to improve these problems, we reported that some of these problems such as poor budget estimation and operational inefficiencies, including declining productivity rates continue. As a result we reported that it is uncertain to what extent the Air Force's long-standing financial management problems are likely to be resolved in the short term.

On several occasions we have also reported that the lack of meaningful cost data inhibits cost-effective decision-making with respect to DOD logistics programs. For example, in December 1999, we reported that due to data limitations, we could compare the cost-effectiveness of privatization-in-place with the former government-run operation for only

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<sup>18</sup> The depot maintenance activity group is part of the service's working capital funds, which are reimbursed through the rates it charges for the sale of goods and services.

<sup>19</sup> *Air Force Depot Maintenance: Budgeting Difficulties and Operational Inefficiencies* (GAO/AIMD/NSIAD-00-185, Aug. 15, 2000).

one of the three depot maintenance facilities we had been asked to review.<sup>20</sup> While we determined that the cost of the privatized depot maintenance facility at Newark, Ohio, was about 16 percent higher than the estimated cost had the Air Force continued to operate the facility, we were unable to perform similar analyses at other privatized locations due primarily to data limitations. During an ongoing review, we have found that neither the Air Force, nor we could evaluate the projected cost versus the actual cost of long-term contractor support operations for military systems. Without the data to make such analyses, the Department has limited ability to assess the cost-effectiveness of its decisions, which could lead to greater inefficiencies in future decision-making.

### Program Implementation Issues

The services continue to struggle to improve depot programs, processes, and operations and make maintenance programs more efficient while meeting operational requirements.

In 1999, we reported on the Air Force's implementation of three depot maintenance enhancement initiatives, noting that the extent of implementation was varied.<sup>21</sup> While Air Force plans established broad goals to increase operational efficiency and reduce costs as well as an approach for implementing the initiatives, the plans did not include specific criteria for determining that the initiatives were achieving stated goals. Likewise, the Air Force Materiel Command did not establish clear and consistent measures to facilitate tracking progress and assessing the initiatives' success. Therefore, limited data was

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

available to quantify the initiatives' success in achieving desired goals such as expediting repairs and reducing costs for maintenance performed by both the public and private sectors. To the extent data were available at that time, they indicated mixed results. Since our review, the depot enhancement initiatives have generally been implemented, but the Air Force is still reporting some roadblocks and need for continuing improvements.

In November 1998 we reported that Army forecasts of depot maintenance workload fluctuated to such an extent that they affected the operational efficiency of the depots and contributed to financial losses.<sup>22</sup> Factors that adversely impacted the Army's ability to forecast workloads for the maintenance depots included (1) decisions by field commanders to conduct depot maintenance-type work at field-level repair facilities, even though the work had been forecasted to be done at depot; (2) decisions by program managers to assign repair work for new systems to the private sector; and (3) reductions in the funding for depot maintenance from the projected amounts, which reduced the maintenance work that could be performed. While the Army is implementing a program to centrally manage depot workloads, to date the maintenance depots have received almost no new work, and it remains uncertain how the new management approach will impact future depot workload forecasts.

A factor affecting the future viability of the defense depot system is the source-of-repair process, which is intended to be the decision-making tool for determining whether to

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<sup>21</sup> *Air Force Depot Maintenance: Management Changes Would Improve Implementation of Reform Initiatives* (GAO/NSIAD-99-63, June 25, 1999).

assign maintenance workloads for new and upgraded systems to defense depots or to contractors. In our 1998 review of the source-of-repair decision process for 71 new acquisition programs, we identified major shifts from past policies and practices that tended to favor defense depots toward greater use of the private sector.<sup>23</sup> We identified frequent and systemic deficiencies in the military services' processes, including inconsistent cost comparisons between public and private sources, inadequate considerations of core requirements, and decreased role and input from logistics officials in support decisions.

More recently, in January 2000, the Army Audit Agency identified similar deficiencies.

Our ongoing review indicates that each of the services still has the same situation.

Although the services have acknowledged problems in source-of-repair processes, it is uncertain to what extent they will assign repair workloads for new and upgraded systems to military depots. If they do not, as older systems are phased out of the inventory and the maintenance workloads for these systems go away, the depots will continue to lose work, and efforts to make them efficient and productive industrial activities will become more difficult.

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<sup>22</sup> *Army Industrial Facilities: Workforce Requirements and Related Issues Affecting Depots and Arsenal* (GAO/NSIAD-99-31, Nov. 30, 1998).

<sup>23</sup> *Defense Depot Maintenance: DOD Shifting More Workload for New Weapon Systems to the Private Sector* (GAO/NSIAD-98-8, Mar. 31, 1998).

## Challenges Meeting Legislative Requirements

The statutory “50-50” requirement is likely to be the most problematic for some of the services to meet.<sup>24</sup> Pursuant to 10 USC 2466(b), we report annually on the status of the Department’s allocation of depot maintenance resources to meet the 50-50 requirement. The Air Force exceeded the 50-percent limitation in fiscal year 2000 and is likely to breach it again in 2001 and in later years unless earlier decisions to repair most new and upgraded systems in the private sector are changed. The statute permits the Secretary of a military department to waive the 50-percent ceiling for national security reasons. The Air Force’s letter notifying Congress of the waiver explained it was required because the Air Force would likely exceed the 50-percent limit because it needed to use temporary contracts to support transitioning workloads from closing depots. We reported that these temporary contracts represented only a minor share of the planned Air Force contract workload and they did not in and of themselves create a need for a waiver.<sup>25</sup> We noted that previous actions increased the private sector’s share of depot maintenance work from 36 percent in 1991 to close to the 50 percent ceiling in 2000 and were significant in leading to the waiver. We estimated that the Air Force would exceed the 50 percent ceiling by about \$200 million.

As a part of our ongoing review of the Department’s workload allocation between the public and private sectors, we have not yet seen evidence to support that the Air Force has an effective plan to resolve its 50-50 problem. Also, based on our ongoing review of



the services' implementation of their processes for determining core workload requirements, the Department also needs to resolve several core-related issues. These issues include the identification of core requirements for logistics functions other than depot maintenance and the resolution of shortcomings in the services' core policies, such as the requirement that public sector capability be established for new systems identified as core within 4 years of initial operational capability.

Finally, none of the services have conducted a public-private competition since the Air Force competed workloads from the closing San Antonio, Texas, and Sacramento, California, depots, yet some depot workloads have moved to the private sector. The Department's public-private competition program was somewhat controversial, with personnel from both the public and private sectors voicing concerns that it was not fair. Our review of the program identified some problems, but we found the program generally to be a useful tool for making some source-of-repair decisions, particularly in light of the lack of competition for most contracts awarded to the private sector.

#### ACTIONS NEEDED TO IMPROVE MAINTENANCE AND RELATED LOGISTICS PROGRAMS

DOD is at an important point with respect to its military depot systems. Significant reductions have been made in the facilities and workforce. At the same time relatively little investment is being made to modernize repair capabilities and many skilled

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<sup>24</sup> *Depot Maintenance: Air Force Challenges in Managing to 50-50 Ceiling* (GAO/T-NSIAD-00-112, Mar. 3, 2000) and *Depot Maintenance: Action Needed to Avoid Exceeding Ceiling on Contract Workloads* (GAO/NSIAD-00-193, Aug. 24, 2000).

<sup>25</sup> *Depot Maintenance: Air Force Waiver to 10 U.S.C. 2466* (GAO/NSIAD-00-152R, May 22, 2000).

personnel may soon retire. However, overall strategic and service plans do not adequately address these challenges nor paint a clear picture of future maintenance capabilities. Central to developing such plans is reaching agreement on the critical issue of what role the military depots and private sector capabilities will play in providing repair capabilities to meet the forces' readiness and sustainability needs. Without a clear roadmap to guide the development of desired maintenance capabilities, the Department's goal to have a maintenance system that is a ready source of needed repair capability to support readiness and sustainability requirements will be increasingly at risk.

On the basis of our prior work we believe that a comprehensive defense maintenance strategic plan needs to be developed by the Under Secretary of Defense for Acquisition, Technology, and Logistics, using the Defense Depot Maintenance Council in consultation with the military services, the Joint Chiefs of Staff, and the warfighting commands to guide the development of individual depot strategic plans for the services. This plan should address such issues as

What will be the future role of both military depots and the private sector in providing readiness and sustainability needs?

How maintenance activities most cost-effectively fit into other logistics functions and activities to create a flexible and responsive support capability that readily adapts to changing military requirements and meets future readiness and sustainability needs?

What types of existing and future workloads must the depots, field activities, and contractors have to develop the capacity and capabilities to fulfill their roles?

How will personnel issues such as the retention of required knowledge, skills, and abilities to support future maintenance requirements be met?

What level of recapitalization is needed to fill the role in both sectors?

What steps and resources are needed to improve financial management operations to provide timely, reliable cost and other financial data needed to effectively support decision-making capability regarding the relative cost-effectiveness of maintenance and repair work and other logistics-related services performed in the public and private sectors?

What quantitative and qualitative measures will be used to determine whether public and private sector maintenance is meeting readiness and sustainment requirements cost-effectively?

How can the Department increase the competitiveness of depot maintenance contracting?

How can the Department ensure the cost-effectiveness of private sector maintenance in a largely non-competitive environment using long-term sole-source contracts?

Addressing these issues now is critical to having future maintenance capabilities that will meet DOD's needs.

Mr. Chairman, this concludes my statement. I am prepared to address questions that you and the Members may have at this time.

## Contacts and Acknowledgements

For future questions regarding this testimony, please contact David R. Warren or Julia Denman at (202) 512-8412. Other individuals making key contributions to this testimony were Bobby Worrell, Bruce Fairbairn, and Ed Waytel.

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