

CHAPTER III

SUPPORT FOR DoD'S WEAPON SYSTEMS

The United States relies heavily on sophisticated weapons to provide its military with a qualitative advantage over potential opponents. The Department of Defense has sizable stocks of these weapons, including nearly 400 ships, almost 2,700 deployable fighter aircraft, and about 16,000 tanks. Countless missiles, torpedoes, shells, mines, and the like are also bought and maintained to provide combat punch for major weapon systems. In addition, each of the services and several defense agencies employ significant numbers of personnel to investigate new technologies and develop and buy new weapons. Maintenance personnel in a number of depots and at bases worldwide perform daily and periodic maintenance on these weapons to ensure they are available should U.S. defense needs call on their services. This chapter discusses consolidating portions of these acquisition and maintenance work forces.

CONSOLIDATING THE ACQUISITION WORK FORCE

Consolidating and reducing the size of the acquisition work force has saved billions of dollars in recent years. Although DoD has achieved such savings, cutbacks to the acquisition work force have occurred mostly as a part of overall reductions in defense spending that have taken place in recent years. The Administration has introduced several initiatives aimed at consolidating and streamlining the acquisition process in the Department of Defense that could further reduce the size of the work force. In addition, the Congress recently passed the Federal Acquisition Streamlining Act of 1994 aimed at streamlining federal procurement as a whole, which could cut the size of the defense acquisition work force. This option goes beyond DoD's current reform efforts or those included in recent legislation. It establishes a single defense acquisition agency and could save several billion dollars beyond the acquisition savings anticipated by the Administration during the next five years.

Background

A consistent focus of defense reform during the past two decades has been creating a more efficient defense acquisition work force, but over the years the effort has achieved only modest success. The Blue Ribbon Defense Panel

report of July 1970 complained of too many layers of military and civilian staffs producing "excessive paperwork, coordination, delay, duplication and unnecessary expense." In 1986, the President's Blue Ribbon Commission on Defense (the Packard Commission) concluded that too many acquisition personnel--burdened by too many laws, regulations, and layers of review--resulted in a cumbersome and inefficient process. The current Administration created the Office of the Deputy Under Secretary of Defense for Acquisition Reform to address the many bureaucratic and procedural obstacles that continue to burden the procurement process. Although the Administration plans to cut back the size of the acquisition work force as part of its overall force reductions, it does not currently plan to seek efficiencies by undertaking a major reorganization of the acquisition bureaucracy.

Defense Acquisition Organization

The defense acquisition community consists of 10 major organizations and includes small components in a number of agencies. About 450,000 military and civilian workers conduct and manage research, development, production, and support of weapons and equipment within the department. Within the Office of the Secretary of Defense, the Under Secretary of Defense for Acquisition manages the overall acquisition process and serves as the Chairman of the Defense Acquisition Board, which oversees the development and production of DoD's major weapon systems. Within the service secretariats, a Service Acquisition Executive directs each of the services' acquisition programs, and the Vice Chairman of the Joint Chiefs of Staff oversees issues on joint service acquisition.

DoD's major weapon-buying commands include the Army Materiel Command, the Naval Air Systems Command, the Naval Sea Systems Command, the Naval Space and Warfare Systems Command, the Air Force Materiel Command, and the Defense Logistics Agency. The Office of Naval Research, the Army Materiel Command, and the Air Force Materiel Command conduct and manage the services' research and development work in addition to the work managed by DoD's Advanced Research Projects Agency. Other purchasing and support agencies include the Army's Information Systems Command and the Naval Supply Systems Command.

Although numerous internal reorganizations have occurred within the services' acquisition commands over the years, DoD has not undertaken a comprehensive overhaul of the command structure itself. The only restructuring of major acquisition commands occurred in 1992 when the Air Force merged three major commands--the Air Force Logistics Command, the Air

Force Systems Command, and the Air Force Communications Command--into the Air Force Materiel Command. In 1988, the former major commands employed almost 140,000 military and civilian personnel; the Air Force Materiel Command now employs about 93,000--about 34 percent less than under the old organizational scheme. Estimating the effects on employment of the merger is difficult, since the consolidation took place during a period of major downsizing within DoD. Nevertheless, the reorganization demonstrates the extent to which consolidation can occur while maintaining functional performance. Army and Navy buying commands, however, have remained essentially unchanged during the recent era of acquisition reform.

Savings Through Reforming the Defense Acquisition Process

For at least the past 25 years, defense acquisition has been characterized by major increases in program costs, significant schedule delays, failure to meet operational requirements, and a host of management problems including waste, fraud, and abuse. Nearly every Administration in the past three decades has undertaken steps to reform the acquisition process in order to reduce costs and ensure timely delivery of effective weapons and equipment. The current Administration has proposed a number of initiatives to simplify and streamline the acquisition process that, if carried out, could produce significant savings and efficiencies. The Administration estimates that various acquisition reforms could save billions of dollars.

In general, the Administration's reform program seeks to restructure the acquisition organization and process so that "the fewest number of people are involved in a given process, and the need for reconciliation or coordination is minimized."¹ Various policy reforms are designed to achieve these objectives. For example, DoD seeks to establish performance-based requirements minimizing the need for military specifications unique to DoD. A preference for purchasing commercial items should contribute to cost and schedule efficiencies. DoD has recently completed a comprehensive review of military specifications (milspecs) and has directed that purchasing commercial items replace buying items built to military specifications except in special cases.

In addition, DoD seeks to limit the oversight, testing, and inspection of purchased items so that such functions are inobtrusive and contribute to the value of the finished product. Similarly, the department intends to reduce

1. Blue Ribbon Defense Panel, *Report to the President and the Secretary of Defense on the Department of Defense* (July 1970), p. 1.

reporting requirements to the minimum number necessary to ensure compliance with policy. Data collection would be limited to data that already exist and can be collected without undue additional administrative burdens. Moreover, DoD has proposed simplified contracting procedures, which are expected to save significant time and accelerate the acquisition process.

Those and other proposed reforms serve as the foundation for DoD's Defense Acquisition Pilot Program, authorized by the Congress in 1991. The purpose of the program is to determine the potential effectiveness of proposed reforms in acquisition and waivers of certain statutes and regulatory requirements. The Congress has yet to grant final approval of the package of seven weapons programs that the department proposed in 1993 to be Acquisition Pilot Programs.

Acquisition Work Load and the Size of the Work Force

Since the peak years of defense spending in the mid-1980s, the acquisition work load has been decreasing according to a variety of measures, but it has not been matched by cutbacks in the defense acquisition work force. One measure of the acquisition work load is total spending on research and development, production, and purchases for operations and maintenance. Since 1988, acquisition spending, by this definition, declined by almost 28 percent (outlays in 1995 dollars); the acquisition work force, however, declined by only 23 percent.²

During the 1988-1994 period, the acquisition work force--civilian and military--shrank by about 134,000 workers (see Table 5). These cutbacks were not levied specifically on the acquisition work force; rather, they were part of the overall defense drawdown that had occurred during the past five years. (Overall, DoD employment fell by about 21 percent between 1988 and 1994.) Reducing the acquisition work force between 1988 and 1994 will save about \$5.5 billion in 1995. If DoD had cut back the acquisition work force by the same percentage as the services and defense agencies reduced acquisition spending--about 28 percent--roughly 29,000 additional jobs would have been cut, providing more than \$1 billion in savings.

2. Some defense data suggest that the size of the acquisition work force is generally related to the level of acquisition spending. A recent analysis by the Office of Federal Procurement Policy found that increases in the number of defense contracting personnel coincided with major increases in DoD's procurement spending during the 1980s. In addition, DoD data show that the acquisition work force steadily increased during the 1980s until June 1988, when DoD outlays for procurement began to decline.

Other indicators, such as the quantity of weapons being purchased and the number of systems being managed, also suggest that the acquisition work load is decreasing. The services are purchasing considerably fewer weapons than in 1990. This year, DoD requested the Congress to authorize purchasing 6 new ships, down from 20 ships authorized five years ago. This year's budget request for 127 aircraft is down from 511 aircraft authorized in 1990. Construction of tanks has been discontinued altogether, and DoD has cut back the purchase of strategic missiles from 175 missiles in 1990 to 18

TABLE 5. COMPARISON BETWEEN DEFENSE SPENDING AND ACQUISITION EMPLOYMENT, 1988 AND 1994

	1988	1994	Percentage Change
In Constant 1995 Dollars			
Total Defense Outlays ^a	352.6	273.4	-22
Acquisition Outlays ^b	197.3	143.0	-28
By Number of Employees			
Total Acquisition Employment	582,100	448,400	-23
Army	128,900	85,800	-33
Navy	238,300	187,900	-21
Air Force	139,600	92,700	-34
Defense Logistics Agency	53,900	60,400	12
Others	21,500	21,600	0

SOURCE: Congressional Budget Office.

- a. Defense outlays for Department of Defense spending only.
- b. Acquisition outlays include spending for procurement, research and development, and other purchases for operations and maintenance.

requested for 1995. In addition, fewer major weapon programs are currently in the acquisition development pipeline than in the past. In 1991, the Defense Acquisition Board (DAB) managed (or delegated to the services) 131 major weapon programs; this year, the DAB oversees only 93 major programs. These sorts of reductions in acquisition activity are reflected, at least in part, by a 10 percent drop in the number of contract actions since 1990.

Reductions in the acquisition work force have not been evenly distributed among the services, suggesting that further savings could be achieved through more equitable cutbacks among the military services. For example, although the Army cut acquisition spending by about 45 percent during the 1988-1994 period, it reduced its acquisition work force by only about a third. The Navy cut acquisition spending by about 34 percent, but reduced the number of acquisition positions by only about a fifth. The Air Force cut acquisition spending and its associated work force by about a third.

These reductions to the services' work forces are approximate since many workers were consolidated and transferred from their service assignments to similar functions in defense organizations such as the Defense Logistics Agency (DLA). While DoD was cutting back the services' work forces, the number of acquisition workers in DLA and other DoD organizations actually increased modestly, by about 6,000 positions during the 1988-1994 period.

Potential for Efficiencies

Aside from the potential for savings on the basis of equitable and proportional cuts, historical evidence indicates that consolidation can generate efficiencies and savings. For example, bringing the logistics support functions of the various services into the Defense Logistics Agency in 1961 reduced the number of jobs by 13 percent. Consolidating the mapping, charting, and geodesy functions of the three services into the Defense Mapping Agency in 1970 also achieved efficiencies. More recently, merging the Air Force Logistics Command and the Air Force Systems Command into the Air Force Materiel Command helped to reduce the size of the work force of these components by more than 33 percent.

Some Members of Congress support the idea of a single buying agency for all the services and defense agencies. Senator William Roth, for example, introduced legislation in 1988 to create a DoD Defense Acquisition Agency, and recently proposed an amendment to the Federal Acquisition Streamlining Act to overhaul the traditional DoD acquisition structure. The Senator estimated that his proposed amendment could reduce the number of

acquisition management personnel positions by 25 percent to 30 percent by reducing duplicative headquarters staffs.

The Congress could consider the potential to achieve significant savings in light of the various trends in defense acquisition described above. Management reforms such as simplifying the acquisition process will be carried out over the next several years. Acquisition spending and other measures of the acquisition work load are projected to continue to decline during the next five years. Indeed, according to DoD estimates, outlays for acquisition will decrease by about 10 percent between 1994 and 1999.

If cutbacks to the work force reflected successful reform and consolidation of the acquisition process, the acquisition work force could absorb a major downsizing that would approach the objectives set out by some Members of Congress. For instance, if reorganization reduced the acquisition work force by, say, about 10 percent beyond Administration plans, DoD could save about \$3 billion over the next five years (see Table 6).

Advantages and Disadvantages of Consolidation

In general, consolidating all defense acquisition functions into a single agency could promote savings and efficiencies by establishing a management structure

TABLE 6. SAVINGS FROM REDUCING THE ACQUISITION WORK FORCE BY 10 PERCENT (In billions of dollars)

	1995	1996	1997	1998	1999	1995- 1999	Long- Term Annual Savings ^a
Budget Authority	0	b	0.4	0.9	1.5	2.8	2.1

SOURCE: Congressional Budget Office.

NOTE: Figures in the 1995-1999 period are in current dollars.

a. Annual savings after the option has been fully implemented, expressed in 1995 dollars.

b. Less than \$50 million.

conducive to cross-service purchasing of weapons and equipment. For many years, each service developed its own means to meet similar or identical military requirements and justified the weapons it proposed to buy on the basis of its unique needs and abilities. During the defense buildup of the 1980s when acquisition dollars were plentiful, the services pressed for and received funding for many dozens of new weapon systems. Few requests to start new programs were denied, and virtually no programs were canceled. As a result, a plethora of systems were developed and built to fulfill requirements in given mission areas. A good illustration of this problem is that the services have at least 11 major weapon systems in current inventories designed to meet antiarmor requirements.

Military requirements and budgets have, however, changed significantly; a streamlined single acquisition agency could adequately meet the changing acquisition needs of the post-Cold War era. Fewer new military requirements demand responses comparable to those that characterized the arms race during the past four decades. Equally important, fewer resources are now available or planned to meet even reduced needs. The Bottom-Up Review of September 1993 outlined the department's plan to reduce the size of the force structure significantly by 1999. Fewer divisions, ships, aircraft, and missiles will reduce the acquisition work load considerably below the peak years of the mid-1980s. In addition, the department recently undertook a comprehensive review of service roles and missions in order to eliminate duplication and reduce functional overlap among the services. Much discussion in this review concerns assigning certain military missions to a single service; other discussion focuses on developing weapons for joint service use. These initiatives--the Bottom-Up Review and the review of roles and missions--clearly indicate that the overall size of the acquisition work load will be reduced and rationalized during the decade to come. A unified acquisition agency could be an appropriate response to these changes in acquisitions.

Yet costs and risks associated with consolidating acquisition functions could outweigh the potential benefits, especially in the near term. The initial costs of reorganization and relocation could be significant depending on the degree and pace of centralization undertaken. As a matter of reference, according to DoD estimates, the relocations and consolidations from recent rounds of base closures and realignments will only begin to achieve net savings three years after the process has begun. The up-front costs of relocation would be an added burden during a period in which high deficits have severely constrained budgets.

At the outset of consolidation, it may be necessary to establish a new layer of oversight to manage the revised acquisition and reorganization

process. Such an added layer of bureaucracy could increase costs in the short term and delay savings and efficiencies.

Although reorganization could reduce the size of the work force, a single acquisition agency may not be needed in view of the separate characteristics of the services' purchasing needs. The services perform unique missions that justify separate organizational components. Even a single acquisition agency would require components dedicated to developing and procuring land combat vehicles, ships, and aircraft. To the extent that redundancy exists in the current organizational scheme, consolidations could occur without requiring a complete overhaul of the acquisition bureaucracy.

Moreover, reorganization may not be necessary to ensure greater cooperation among services. Management mechanisms such as the Joint Requirements Oversight Council currently exist within the department to encourage development and procurement of weapon systems by joint effort among the services. Provisions of the department's instructions and regulations for acquisition require that the cost-effectiveness of a weapon be compared with other systems performing the same function before the Defense Acquisition Board makes a decision to proceed.

CONSOLIDATING MAINTENANCE DEPOTS

How should DoD maintain its equipment? That is the subject of considerable debate within the Pentagon and the Congress. In fiscal year 1993, DoD spent \$15 billion for depot maintenance.³ About 70 percent of this work was performed at government-owned and operated depots, shipyards, and logistics centers; the remaining 30 percent was contracted out to private firms. Today the services manage a total of 34 major public depots (a major depot is one with more than 400 employees). Although 10 of the 34 are scheduled to close as a result of base realignment and closure decisions, reductions in force structure and in operating tempos will still leave DoD with excess capacity within its government-run depots.

The Administration hopes to conduct depot maintenance more effectively by transferring work to the private sector and closing additional government-owned facilities. But with the possible exception of fixed-wing aircraft, the services will continue to operate separate depots to maintain their weapon systems.

3. This figure includes work load for depot maintenance conducted by government-owned depots and private contractors as well as contractor logistics support and interim contractor support.

Background

As structured today, the military departments manage their own depots as part of their responsibility to support their forces. Government-run depots exist, in part, to assure that DoD will always have a "ready and controlled source" of skilled workers, equipment, and facilities dedicated to it in the event of conflict.⁴ Since each service operates a broad mix (in type and vintage) of weapon systems, public depots work on a wide variety of equipment.

During the Cold War, U.S. military planners prepared for a protracted conflict with the Soviet Union. The structure of government depots was sized accordingly. Depots had larger capacities not only to handle the larger force structure of the Cold War in peacetime, but also so that they could repair damaged aircraft, ships, and ground equipment that would be sent back to the United States during a conflict. Today, military planners are preparing to fight in major regional conflicts similar in scope and size to Operation Desert Storm, which are more likely to be of short duration. Based on U.S. experience during that conflict, the need for government depots would surge in the early stages of a crisis in order to prepare weapon systems, spare parts, and repair kits for mobilization, but few weapon systems would be returned to the United States for repairs before the conflict ended.

Over time, each service has developed a distinct approach to supporting its equipment, even when that equipment is similar. For example, the Navy has relied on inspections to determine when repairs are needed, whereas the Air Force sends its planes to depot for inspection and overhaul on a regularly scheduled basis. Those differences in approach may complicate joint operations.

Because depots today are dedicated primarily to a single service, workers are attuned to the effects of their service's operating environment. For example, the Navy's carrier-based aircraft age differently from land-based aircraft. Navy officials argue that separate ownership of facilities is needed to retain the most responsive depot maintenance for that service's specific operational needs. In addition, they contend that specialists in naval aircraft maintenance provide important information to the people who develop and build the next generation of equipment.

However, separate service depots have led to redundant capabilities that may be unaffordable during this period of lower defense spending, particularly

4. 10 U.S.C. 2464, 98 Stat. 2514.

if they are retained at the expense of other activities that enhance readiness or of force structure. Today, the Navy and Air Force operate separate aviation depots. The majority of depot maintenance involves repairs to components (such as engines, communications equipment, and electronics) rather than to their larger platforms, and the services have duplicate capabilities to maintain similar components. Alternatives to separate service depots exist; for example, Navy and Air Force maintenance technicians might operate out of a single facility, or one service might act as a lead agent for another's work load. And, with time, depot technicians might learn to look for the types of damage more common to each service's equipment.

One justification for separate service depots offered by some officials is current law. The requirement that "DoD activities" provide a "ready and controlled source of repair" is often interpreted to mean that each service is responsible for ensuring the readiness and sustainability of its own equipment. The Congress can, of course, amend or clarify that law if it sees fit. But this common interpretation stems from concerns that a service would not be able to control the priority or quality of repairs to its equipment if it relied on another service's depots.

How Much Excess Capacity Exists Among Government Depots?

Conventional wisdom suggests that defense infrastructure has not been cut as dramatically as has force structure. In terms of the number of government maintenance depots, that impression holds true today since none of the 10 major depots identified for closure under previous BRAC rounds has as yet been entirely closed.⁵ In terms of personnel, DoD has reduced staff at public depots over the 1990-1994 period by a percentage comparable to cuts made in DoD's inventories of aircraft and ships. It has also taken other measures to reduce capacity, such as laying away excess equipment. However, closing depots may provide a greater opportunity for long-term savings, particularly if those depots are self-contained bases or part of a larger multipurpose base that is itself identified for closure.

DoD currently plans to close the 10 depots identified by previous BRAC rounds by the end of fiscal year 1996, at which point the number of depots

5. Since 1988, DoD has closed one minor installation (Pueblo, Colorado, Army Depot) and two facilities overseas (an Army depot in Mainz, Germany, and a facility at Royal Air Force Base Kemble, United Kingdom, that performed depot maintenance for the U.S. Air Force). A major Army depot at Lexington-Bluegrass, Kentucky, is scheduled to close by September 1994, and all of its work load has been transferred to other depots. Although the Army depot in Sacramento, California, is not scheduled to close officially until October 1995, most of its maintenance work load has already been transferred to other depots.

will have declined by about 30 percent. Even after these closings, however, further declines in force structure and operating tempos will leave the services with excess capacity. If additional depots are closed, costs would probably outweigh benefits in the near term. But closings could free up significant amounts of funding beginning early in the next decade.

Capacity is a difficult concept to quantify since it encompasses many characteristics: the size of a facility, the number and type of pieces of equipment within it, the skill level of its workers, and the number of hours they work. Also, some depots have rare or unique features that make them critical to retain--such as large hangars or special facilities to repair nuclear propulsion systems. Despite these complicating factors, it is useful to consider a rough measure of capacity (see Table 7 for estimates of excess capacity using just one metric: millions of direct labor hours, or DLHs).

Direct labor hours represent the number of physical workstations at a facility and the number of productive hours associated with each position in a one-shift, eight-hour day, five-day workweek. That measure may underestimate actual capability, especially in emergency situations, since more capacity is available for a surge in production by adding additional shifts or workdays.

According to the data in Table 7, even after planned BRAC closures, government-operated depots will still have more than 22 million DLHs in excess capacity by 1997. On a service-by-service basis, Army depots, naval shipyards, and Air Force logistics centers account for the majority of that excess. Note, however, that the Congressional Budget Office has not independently evaluated the services' capacity and work-load projections on which the data are based.

Administration Plans May Reduce the Need for Government Depot Capacity

Recent decisions by the Administration could substantially reduce the number and size of government depots needed. Deputy Defense Secretary John Deutch has directed the services to reevaluate what DoD needs to retain as "core" capability in public depots. Under guidelines from the Office of the Secretary of Defense, core capability represents the minimum facilities, equipment, and skilled personnel needed to ensure that a dedicated source of repair will be available in the event of conflict. Associated with core capability is a work load--a mix of depot maintenance repair work that exercises those capabilities needed to support mission-essential equipment in the regional contingencies for which DoD is preparing.

The services are now in the process of evaluating how much work load they need to maintain core capability for the planning scenarios--two nearly simultaneous contingencies in Southwest Asia and on the Korean Peninsula. Early service calculations suggest, however, that government maintenance depots may only need to perform 40 percent to 50 percent of total current

TABLE 7. EXCESS CAPACITY AMONG MAJOR GOVERNMENT-RUN MAINTENANCE DEPOTS

	Number of Depots		Utilization (Percent)		Excess Capacity (Millions of direct labor hours)		Range of Depot Capacities in 1997 (Millions of direct labor hours)	
	1994	1997	1994	1997	1994	1997	Low	High
Army Depots ^a	8	5	57	72	8.7	5.2	1.9	4.7
Naval Aviation Depots	6	3	74	103	4.9	-0.3	3.1	3.5
Naval Shipyards	8	5	75	76	17.4	10.3	4.6	14.2
Other Major Naval Centers	3	3	83	84	0.9	0.8	0.7	2.4
Marine Corps Logistics Bases	2	2	125	116	-0.6	-0.4	1.2	1.2
Air Force Air Logistics Centers	5	5	86	83	5.8	6.7	7.0	9.2
Other Air Force Centers ^b	2	1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total	34	24	n.a.	n.a.	37.1	22.3	0.7	14.2

SOURCE: Congressional Budget Office based on data from the Defense Science Board and the military services.

NOTE: n.a. = not applicable. Values for 1997 exclude all depots identified for closure to date.

- a. Lexington-Bluegrass and Sacramento Army depots are included in the number of depots for 1994, since they are not yet officially closed. But their work loads are negligible and they therefore are excluded from 1994 values for Army utilization and excess capacity.
- b. Values on utilization and excess capacity are not applicable because the Air Force is privatizing one of these facilities, the Aerospace Guidance and Metrology Center in Newark, Ohio; the other, the Aerospace Maintenance and Regeneration Center in Tucson, Arizona, is primarily an aircraft storage facility.

peacetime depot work loads, as compared with the current 70 percent. Under this core policy, private industry could perform the remainder.

The Administration's new policy, however, may contradict existing law for some of the services. Since 1991, the Congress has restricted the amount of maintenance that the private sector can perform. The National Defense Authorization Act currently states that the services may not contract out more than 40 percent of their depot work load for performance by nonfederal employees. The House of Representatives' defense authorization bill for 1995 would further increase the share performed by government depots by restricting private contractors to 40 percent of all repair funds. That share would include the value of private-sector contracts for all maintenance and repair services above the unit level, interim contractor support, contract logistics support, and the value of materials purchased by public depots for their maintenance work.

Some Members of Congress are concerned that DoD may give up too much capability under its new core policy. The process used to quantify the work load needed to keep core capability is not very clear, and it may therefore limit the Congress's oversight role. Some Members would prefer that DoD leave decisions about excess capacity to the BRAC process and rely on interservicing among public depots and, to encourage more cost control, competitions for depot work load between the public and private sector. Competition, some argue, might also be used between public depots to identify which facilities are least efficient.

Nevertheless, there is no consensus about the track record of competitions for maintenance work loads. The Air Force believes that it has achieved considerable savings by offering some of its work loads for competition between public depots and private companies as well as through competitions involving government depots run by other services. But the other services have questioned these findings. A recent Defense Science Board Task Force on Depot Maintenance Management (half of which consisted of representatives from the private sector) concluded that competitions cannot be run fairly; too many differences between public and private methods of accounting make it difficult to evaluate competitive bids. Deputy Secretary Deutch agreed with this conclusion and has discontinued public/private competitions. He has also discontinued public/public competitions, noting the Task Force's observation that they are expensive to run. Deutch argues that it may be preferable simply to promote a larger degree of cooperation between service depots, but he leaves open the possibility of reopening public/public competition in the future. Since the greatest opportunity for consolidation in

the services lies in repairs for fixed-wing aviation, Deutch specifically asked the Navy and Air Force to develop a plan for joint operations.

However, given that each of the services has kept separate repair facilities, encouraging cooperation has not been a simple matter. In recent years, the Office of the Secretary of Defense has directed the services to develop plans to conduct depot maintenance more cost effectively. One way has been for one service to perform another's repairs when they involve common equipment or components. For example, Air Force and Navy versions of the Blackhawk helicopter are now being sent to the Corpus Christi, Texas, Army Depot. The services have also relied on each other to a greater degree for engine repairs, and DoD plans to consolidate all tactical missile maintenance at the Letterkenny, Pennsylvania, Army Depot.

Although the services are consulting each other more about similar work loads, the share of maintenance performed by one service for another remains small: just \$430 million in fiscal year 1992. According to a 1993 study on depot consolidation by the Joint Chiefs of Staff, the services could perform much more of each others' maintenance on similar weapon system components. The services may also be particularly reluctant to send more of their work load to another's facility since such actions might make them vulnerable to the next round of BRAC recommendations for closure.

How, then, should the government depot system be managed? In its study, the JCS recommended that DoD establish a Joint Depot Maintenance Command. It concluded that a unified management structure would result in the greatest opportunity for efficiency. However, then Secretary of Defense Les Aspin did not adopt this policy, perhaps in part because such a major management change was unlikely to receive support from the services and the Congress. That wariness was warranted: in last year's defense authorization act, the Congress explicitly prohibited DoD from consolidating the management of depot work load under a single defensewide entity during fiscal year 1994.

The recent Defense Science Board Task Force on Depot Maintenance Management recommended continuing separate management of service depots, but would strengthen the Defense Depot Maintenance Council's (DDMC's) role in coordinating depot work-load assignments among the services and in reviewing capital investment decisions.⁶ But without explicit authority over depot resources--that is, control over personnel levels and

6. The Defense Depot Maintenance Council is an interservice management structure established in 1990, and its responsibilities have included implementing Defense Management Report decisions. It is chaired by the Deputy Under Secretary of Defense for Logistics, and its members include the Joint Logistics Commanders.

funding decisions--it is unclear how the DDMC will be able to integrate depot operations.

Consolidating Maintenance Depots Among Services

The option explored in this paper, consolidating maintenance depots among the services, would establish a Joint Depot Maintenance Command or a Defense Maintenance Agency that would manage existing facilities, assign similar work loads to single "Center of Excellence" depots, and make recommendations to the Base Realignment and Closure Commission about which facilities to close.

Taking into account service projections of future work load, the option would close seven depots in addition to those already identified by previous BRAC decisions. Work on aircraft and their components would be consolidated among six depots instead of the current nine. Those would include the existing Army and Navy rotary-wing facilities (since neither one has as yet demonstrated the capacity to absorb the work load of the other), along with four fixed-wing aviation depots (selected from among the remaining naval aviation depots and Air Force air logistics centers). Maintenance on ground vehicles and equipment currently performed at Army, Air Force, and Marine Corps facilities would be consolidated among four depots. This option would also close two additional naval shipyards.

Little empirical evidence exists as to whether consolidating depots among services would result in more savings than simply reducing excess capacity within each service. Simple calculations based on capacity and work load as measured in direct labor hours suggest that if a central management agency assigns aircraft maintenance work loads for all services, it may be able to close three fixed-wing aviation depots. Alternatively, two depots could be closed if each service were to reduce its capacity individually. According to these calculations, assigning work loads for ground equipment centrally would not result in enough excess capacity to justify closing additional depots.

The magnitude of savings from consolidation depends on whether a receiving depot would be able to administer its new work load with lower indirect expenses than two separate facilities, or whether repairs on two similar types of commodities could be performed with lower direct labor and material costs when combined. Few analyses have examined these issues in much detail. One is a RAND Issue Paper that uses DoD supply depots, real property maintenance agencies, and printing operations as examples. It argues that consolidation may present net costs since it may require more

layers of management and higher transportation costs to perform repairs at a few larger depots. Two studies by the Center for Naval Analyses found evidence of economies in combining naval aviation and shipyard work loads, respectively, but it is unclear whether these results can be generalized to combining the work loads of all services. In their 1993 study, the Joint Chiefs of Staff recognized the high degree of uncertainty about the effects of consolidation by estimating cumulative net savings over 10 years ranging from \$1.8 billion to \$9.6 billion (in 1995 dollars) as a result of joint operations. The JCS study found that most of those savings accrued in the latter half of its 10-year estimation period.

Savings from this option were estimated under the assumption that the indirect costs of remaining depots can be spread out over a larger business base. Specifically, the Congressional Budget Office assumed that 30 percent of all indirect workers at the closing depot were separated from the work force. (Indirect workers are those employees often categorized as general and administrative or overhead whose hours cannot be assigned to a specific work order.) That assumption is similar to the one the JCS used for its low estimate of savings from consolidation. In addition, CBO assumed that the depots to which the work load is transferred would only have 50 percent of the other indirect costs associated with that work load (such as utility expenses) compared with the facilities that are closed.

If this option is put in place, CBO estimates that costs would outweigh savings by \$490 million (in current-dollar budget authority) during the 1995-1999 period, since DoD would face up-front costs associated with retirements, work-force separations, moving of workers and equipment, and environmental cleanup at depot sites (see Table 8). But over the 2000-2004 period, savings from closing depots under this option would be considerable: approximately \$2 billion in budget authority (in 1995 dollars), or about \$400 million per year. Other estimates have suggested that depots with several thousand employees each have fixed overhead costs ranging from \$50 million to \$100 million per year.⁷ Using this range, eliminating seven depots would imply long-run savings of roughly \$350 million to \$700 million per year. Much of these net savings could result under intraservice consolidations as well.

7. Office of the Under Secretary of Defense for Acquisition and Technology, *Report of the Defense Science Board Task Force on Depot Maintenance Management* (April 1994), p. 17.

Arguments Against Joint Management of Government Depots

Opponents of this option argue that it is politically and bureaucratically impractical. Given the reluctance of the services to cede control and Congressional constraints on depot operations, DoD is unlikely to have the authority to make such a dramatic change in management structure.

Service representatives argue that a centralized depot structure would be less capable than what exists today. Separate control of public depots provides a close link between the users and suppliers of maintenance services. Duplicate capabilities may exist. But according to this line of argument, some overlap may be necessary to ensure that a ready and flexible source of repair is available, dedicated to each service and knowledgeable about its specific operational needs.

Critics also point to the degree of uncertainty surrounding the magnitude of savings under this option. If economies of scope and scale exist among service work loads, long-term net savings to DoD could be considerable. But some costs for depot operations, such as transportation and administration expenses, could rise. With the exception of aviation depots, consolidation among the services may not necessarily lead to the closing of more depots.

TABLE 8. COSTS AND SAVINGS FROM CONSOLIDATING DEPOTS (In millions of dollars)

	1995	1996	1997	1998	1999	1995- 1999	Long-Term Annual Savings ^a
Budget Authority ^b	0	-410	-350	-40	310	-490	400

SOURCE: Congressional Budget Office.

NOTE: Minus signs indicate costs. Figures in the 1995-1999 period are in current dollars.

a. Average annual savings for the years 2000 and beyond, expressed in 1995 dollars.

b. The amounts represent savings net of closure costs for each year. All amounts are rounded to the nearest \$10 million.

Potential Benefits of Joint Depot Operations

Advocates of joint depot operations argue that both intraservice and interservice consolidations would be more likely under a centralized management structure. Given the budget pressures that it faces, DoD must take dramatic steps to promote efficiency among its support activities. If economies of scale and scope exist in aviation and ground equipment repairs, significant savings may be available over the long term to fund other activities that improve the readiness of U.S. forces or modernize their equipment. Under the current system of separate management, the services do not have a strong track record of consolidating similar work loads. A Joint Depot Maintenance Command or Depot Management Agency may offer the best opportunity for dramatic changes among government-owned depots.

Moreover, the services might learn from each other's experiences. For example, as it holds on to its airframes longer, the Navy is planning to take a more preventive approach and might learn from the Air Force's strategy of regularly scheduled maintenance. Furthermore, the Air Force may find that, in the current budget environment, the Navy's more austere approach of inspecting and repairing only as needed has a role for certain types of equipment.

DoD may be better able to make choices about how maintenance resources should be spent with a centralized management structure. By pooling information uncovered in equipment inspections, DoD may gain a better sense of the readiness and reliability of each service's weapon systems. Doing so might, in turn, provide DoD with important information for designing the next generation of weapon systems. Finally, combining service depot operations may also help DoD make better choices about which facilities have the greatest need for new equipment and capital improvements.

