



DCN 143

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE



MEMORANDUM FOR BASE CLOSURE COMMISSION (Ms. Dierdre Nurre)

03 APR 1995

FROM: HQ USAF/RT

SUBJECT: Request for Information (AF/RT Tasker 320)

In response to your telephone request of April 3, 1995, the attached roster is provided. This roster was developed from the certified Air Force database, and lists each base, whether the base is in maintenance or nonattainment status for air quality, and if in nonattainment the pollutant for which it is in nonattainment and its severity.

I trust this responds to your need. Lt Col Bryan Echols, 697-6560, is my point of contact.

Jay D. Blume, Jr.
JAY D. BLUME, Jr.
Special Assistant to the Chief of Staff
for Realignment and Transition

INSURE cc to Dierdre and all AF Teams
+ X Service Teams

I marked most of the Losers/
Receivers of AIR or related
options for our & Dierdre Analysis

Note There is a 0900 Air Qual.
Issue FRI Morn that Dierdre
has set up - AF Team especially
Rick, FXC, MARK need to be there

Base Name	MAINT	NON ATTAIN	Carbon Monoxide	Ozone	PM-10	Sulfur dioxide	TSP
Altus AFB	OK	OK					
Andersen AFB	OK	OK					
Andrews AFB	OK	Non-Attainment		Serious			
Arnold AFS	OK	OK					
ARPC	Maintnace Area	Non-Attainment	Moderate				
Barksdale AFB	OK	OK					
Battle Creek Federal Cent	OK	Non-Attainment		Marginal			
Beale AFB	OK	Non-Attainment		Marginal			
Bergstrom ARB	OK	OK					
Boise Air Terminal ANG5	OK	Non-Attainment	Moderate		Moderate		
Bolling AFB	OK	Non-Attainment	Moderate	Serious			
Brooks AFB	OK	OK					
Buckley ANGB	Maintnace Area	Non-Attainment	Moderate	Marginal	Moderate		Moderate
Cannon AFB	OK	OK					
Carswell AFB	OK	Non-Attainment		Moderate			
Charleston AFB	OK	OK					
Columbus AFB	OK	OK					
Davis-Monthan AFB							
Dobbins ARB	OK	Non-Attainment		Serious			
Dover AFB	OK	Non-Attainment		Severe			
Dyess AFB	OK	OK					
Edwards AFB	Maintnace Area	Non-Attainment		Serious			
Eglin AFB	OK	OK					
Eielson AFB	OK	OK					
Ellsworth AFB	OK	OK					
Elmendorf	OK	OK					
Fairchild AFB	OK	OK					
Falcon AFB	OK	Non-Attainment	Marginal				
EE Warren AFB	OK	OK					
Gen Mitchell IAP ARS	OK	Non-Attainment		Severe			
Goodfellow AFB	OK	OK					
Grand Forks AFB	OK	OK					
Greater Pittsburgh IAP AN	OK	Non-Attainment		Moderate			
Greater Pittsburgh IAP ARS	OK	Non-Attainment		Moderate			
Griffiss AFB	OK	Non-Attainment		Moderate			
Grissom AFB	OK	OK					
Hanscom AFB	OK	Non-Attainment		Serious			
Hickam AFB	OK	OK					
Hill AFB	OK	Non-Attainment		Moderate			
Holloman AFB	OK	OK					
Homestead ARB	OK	Non-Attainment		Moderate			
Hurlburt Fld	OK	OK					
Keesler AFB	OK	OK					
Kelly AFB	OK	OK					

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WISE & Ford Drum?
 (ASK)

Base Name	MAINT	NON ATTAIN	Carbon Monoxide	Ozone	PM-10	Sulfur dioxide	TSP
Kirtland AFB	OK	Non-Attainment	Moderate				
Lackland AFB	OK	OK					
Lambert Field ANG5	OK	Non-Attainment		Moderate			
Langley AFB	OK	Non-Attainment		Marginal			
Laughlin AFB	OK	OK					
Little Rock AFB	OK	OK					
Los Angeles AFB	OK	Non-Attainment	Serious	Extreme	Moderate		
Luke AFB	OK	Non-Attainment	Moderate	Moderate	Moderate		
MacDill AFB	Maintenance Area	Non-Attainment		Marginal			
Malmstrom AFB	OK	OK					
March ARB	Maintenance Area	Non-Attainment	Moderate	Extreme			
Martin State APT ANG5	Maintenance Area	Non-Attainment		Severe			
Maxwell AFB	OK	OK					
McChord AFB	OK	Non-Attainment	Moderate	Marginal	Moderate		
McClellan AFB	OK	Non-Attainment	Moderate	Serious	Moderate		
McConnell AFB	OK	OK					
McGuire AFB		Non-Attainment		Severe			
Minneapolis-St Paul IAP AR	OK	Non-Attainment	Moderate				
Minot AFB	OK	OK					
Moody AFB	OK	OK					
Mt Home AFB	OK	OK					
NAS Willow Grove ARS	OK	Non-Attainment	Moderate	Severe			
Nellis AFB	OK	Non-Attainment	Moderate		Severe		
Niagara Falls IAP ARS	OK	Non-Attainment		Marginal			
O'Hare IAP, ARS	OK	Non-Attainment		Severe			
Offutt AFB	OK	OK					
Onizuka AFB	Maintenance Area	Non-Attainment	Moderate	Moderate			
Otis ANGB	OK	Non-Attainment		Serious			
Patrick AFB	OK	OK					
Peterson AFB	OK	Non-Attainment	Moderate				
Pope AFB	OK	OK					
Portland IAP ANG5		Non-Attainment	Moderate	Marginal			
Randolph AFB	OK	OK					
Reese AFB	OK	OK					
Rickenbacker ANGB	Maintenance Area	Non-Attainment		Marginal			
Robins AFB	OK	OK					
Rome Lab	OK	Non-Attainment		Moderate			
Salt Lake City IAP ANG5	OK	Non-Attainment	Moderate	Moderate	Moderate	Marginal	
Scott AFB	OK	Non-Attainment		Moderate			
Selfridge ANGB	OK						
Seymour Johnson AFB	OK	OK					
Shaw AFB	OK	OK					
Sheppard AFB	OK	OK					
Stewart IAP ANG5	OK	OK					

Base Name	MAINT	NON ATTAIN	Carbon Monoxide	Ozone	PM-10	Sulfur dioxide	TSP
Tinker AFB	OK	OK					
Troy AFB	OK	Non-Attainment	Moderate	Moderate			
Tucson IAP ANG-S	OK	Non-Attainment	Moderate		Moderate		
Tyndall AFB	OK	OK					
USAF A	OK	Non-Attainment	Moderate				
Vance AFB	OK	OK					
Vandenberg AFB	OK	Non-Attainment		Moderate			
Westover AFB	MAINTANCE Area	Non-Attainment		Serious			
Whiteman AFB	OK	OK					
Wright-Patterson AFB	OK	Non-Attainment		Moderate			
Youngstown-Warren MPT A	OK	Non-Attainment		Marginal			

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DEFENSE DEPOT MAINTENANCE

ISSUE: To what extent should responsibility for management and execution of depot maintenance be restructured to ensure the required service is provided effectively, but with greater efficiency?

ISSUE DESCRIPTION

Introduction: Depot maintenance entails repair, rebuilding, and major overhaul of weapon systems (e.g., ships, tanks, and aircraft), parts, assemblies, and subassemblies. It also includes limited manufacture of parts, technical support, modifications, testing, and reclamation as well as software maintenance. While depot-level facilities have historically had more extensive technical capability than lower levels of maintenance, the differences between levels are becoming less pronounced, workload is shifting among them, and in some cases intermediate and depot capabilities are being combined. In addition, ongoing reductions in military force structure and weapon systems/equipment stocks are decreasing overall requirements for Department of Defense (DoD) maintenance support.

DoD currently expends about \$12 billion annually for depot maintenance work performed in both the public and private sectors. Principally because of continuing reductions in military force structure, depot maintenance costs are projected to decline by about 11 percent (in constant dollars) from FY94 to FY99. Workloads associated with ships and aircraft each account for about 40 percent by dollar value of the total effort; the remaining 20 percent is for missile, combat vehicle, and other ground equipment system workload. On a cost basis, approximately 70 percent of the work is performed in DoD (government-owned and -operated) depots; 30 percent is done by commercial sources.

The costs of excess depot capacity, inefficient processes, and redundant management structures (to the extent they exist) may divert funds from other, more urgent defense requirements. Consequently, it is necessary to consider whether changing the way DoD internally manages its depot activities or moving more work into the private sector can significantly reduce costs or improve support.

Opportunities for Improvement: Research indicates three primary approaches to improving depot maintenance efficiency: consolidation, process improvement, and competition.

For depot maintenance, as for any other industrial activity, consolidation is an issue of scope and scale. Up to a limit, increasing the size of a plant and the organization that manages it improves performance through more effective use of labor and capital machinery. Beyond that limit, particularly when noncomplementary workloads are aggregated, larger plant and management size degrades performance because of the difficulty in coordinating activity across large hierarchies. There are indications, consistent with an intuitive sense of the situation, that DoD depot maintenance has lost some scale-related economies in this decade; probably because the existing plant is now larger than the workload it was intended to support.¹ Preliminary analysis indicates an upper bound of 7 percent on further efficiency improvement through consolidation after closure of the depots identified as excess through the Base Realignment and Closure (BRAC) 93 process.²

The potential gains through process improvement are more significant than those from consolidation. Process improvement, in this context, includes changes such as elimination of non-value-added

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activities, reorganization of work into "cells" or "focused factories," reduction in lot size, reduction in cycle time, emphasis on continuous quality improvement, and similar actions. The average cost reduction through process improvement over the past five years in the best U. S. firms was 30 percent.³ That cost reduction was accompanied by a simultaneous increase in responsiveness to customer needs. Together, they are responsible for the improved competitiveness of U.S. firms.

It should come as no surprise that competition is another important source of cost savings and improved responsiveness. Both within depot maintenance and more generally in DoD, a consistent 25-30 percent reduction in cost has occurred the first time a workload was opened to competition.⁴ The evidence also indicates that competition improves responsiveness to the customer. Competition, however, is probably best thought of as an incentive to process improvement because the same factors that generate process improvements (elimination of non-value-added activities, work reorganization, etc.) also drive competition savings.⁵

DoD Initiatives: The current, ongoing efforts to downsize and consolidate DoD depot maintenance operations and management began in 1990 as part of the Defense Management Review (DMR) process. To date, 11 DoD maintenance depots have been closed or are currently closing, principally through the BRAC process. Those actions have reduced the number of major maintenance depots to 24, and most of the remaining depots are being downsized in place. Since, even with those actions, excess depot capacity at the end of the decade is projected to be approximately 17 percent,⁶ BRAC-95 is expected to identify additional depots for closure.

DoD has also begun to improve its depot maintenance processes. The DMR initiatives included public-private depot competitions in an attempt to generate both improved business practices and substantial cost reductions, but shortcomings in financial management data and systems have at least temporarily halted these competitions. Inter-Service maintenance has also increased. DoD has established a single tactical missile depot to consolidate missile workloads from all Services. In addition, depot work has been consolidated on virtually all items that are used by more than one Service. Inter-Service maintenance encompassed about 8.5 percent of the depot maintenance program in 1993, up from 6.5 percent in 1988.⁷ Standard DoD-wide information management systems are being implemented to support such improved business practices as manufacturing resources planning (MRP-II) and activity-based costing. In addition to those actions, many other productivity improvement efforts are underway throughout the depot maintenance community.

Scoping the Issue: Despite its best efforts, however, DoD depot maintenance of both hardware and software is not yet achieving the kinds of significant cost reductions and responsiveness improvements demonstrated by the best firms in the private sector.⁸ Hence, two fundamental questions remain: is increased reliance on the private sector the best way to realize process improvements and cost reductions; or can similar gains be achieved through internal process reengineering (and does such reengineering mandate management reorganization)?

Over the past three years, several major studies have examined alternatives to Service-managed depot maintenance and the merits of changing the public/private workload division. They examined various centralized management concepts but rejected them because of a perception that they did not offer significant improvement. Similarly, DoD efforts to increase the amount of depot support provided by

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the private sector have failed to yield substantive results because of congressional resistance and the inability to establish a level playing field for public-private depot competition.

The reluctance to increase DoD's reliance on the private sector for depot maintenance support is primarily based on the following assertions:

- DoD needs ready and controlled sources of depot maintenance capability.
- Only government depots can provide that capability.

The first of these assertions is well supported. During Operation Desert Storm (ODS), both government depots and supporting contractors surged to increase engine and reparable component workload requirements *during* the conflict⁹--despite the extraordinary range and depth of spares that were in the supply system at that time as a result of the defense buildup in the 1980s. Marine Corps depots also surged for reconstitution *after* ODS.¹⁰ These ODS surge requirements have important implications for major regional conflict (MRC) scenario planning because ongoing inventory drawdowns increase the likelihood that depot maintenance support will need to surge in support of future MRC requirements. In that regard, reconstitution from the last of two near-simultaneous MRC scenarios is, of course, preparation for the next MRC, which could occur at any time.

The second assertion, that *only* government depots provide a ready and controlled capability, however, is no longer supportable. There are private firms that have capabilities comparable to those of DoD depots and there is reason to believe that the private sector might be more responsive because of successful process innovations that are not yet being realized in DoD (Appendix A).¹¹ Withal, impediments to increased reliance on the private sector exist. They involve difficulties in specifying the content and amount of work to be done, the existence of military-unique systems that have no direct commercial counterparts, the absence (in some cases) of more than one source, and other similar factors.¹² These are classic make-or-buy issues¹³ that merit case-by-case consideration, but are no different than those managed by industry on a routine basis.

Assumptions: Two key assumptions underlie evaluating the options addressed in this issue paper. First, since the ongoing BRAC-95 process has been structured to balance DoD depot capacity with projected workload, it is assumed that BRAC will identify actions required to eliminate excess capacity. Second, given that the overall quality of maintenance provided by both the public and private sectors is considered adequate and essentially equivalent, maintenance quality is not an issue.

OPTIONS

Five options were evaluated. They are considered to be mutually exclusive.

- **Baseline:** Current management, organizations, plans, and programs.
- **Reengineering in place:** Three depot management consolidation alternatives.
 - Commodity Executive Agents
 - Joint Depot Maintenance Command
 - Defense Depot Maintenance Agency
- **Public Corporation:** New, altered depot management organization, similar to AMTRAK.
- **Phased Privatization:** Increased, phased outsourcing of depot maintenance workloads.

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- *Rapid Privatization:* Near-term outsourcing of all DoD depot maintenance workloads. Detailed descriptions of each option follow:

Baseline: Each Service currently operates and manages its own depot infrastructure. Employment in DoD maintenance depots is programmed at about 95,000 personnel for FY95, down from 156,000 in FY87, and projected to decline to about 81,000 in FY99.¹⁴ The Office of the Secretary of Defense (OSD) provides depot maintenance oversight. In recent years, several alternative management structures have been considered. The 1990 DMR recommendations originally proposed single managers for aeronautical, ground, and ship maintenance, but an OSD-led study team under the direction of the Deputy Secretary of Defense subsequently recommended establishment of a Defense Depot Maintenance Council (DDMC) rather than commodity-oriented single managers. The DDMC, composed of the Deputy Under Secretary of Defense (Logistics) and senior logisticians from each of the Services, currently serves as the DoD executive-level forum to integrate depot maintenance programs and operations.

In addition to the ongoing depot maintenance process improvements discussed previously, new support concepts are emerging within each of the Services. For example, the Air Force is implementing "Lean Logistics," which eliminates some intermediate-level activities and relies on rapid repair cycle times coupled with premium transportation to reduce maintenance manpower and material inventory requirements. The Navy is consolidating intermediate- and depot-level maintenance activities for aircraft, surface ships, and submarines into Regional Maintenance Centers to eliminate redundant capabilities. The Army is implementing Integrated Sustainment Maintenance which integrates workloading, management control, and visibility of maintenance assets to more efficiently load repair capability and improve repair responsiveness. These new concepts will influence how depot maintenance is managed and executed in the future since they link the depots closer to the operational forces; however, they have not yet resulted in broad-based improvements. Reductions to date in the number of DoD depots, direct labor hours, and personnel employed have principally resulted from declining workload requirements¹⁵ rather than improved efficiency. Repair cycle time, a key indicator of efficiency, has stayed in the 50- to 100-day range for the past 8 years.¹⁶ In addition, DoD depot costs per direct labor hour, another key indicator, are steadily increasing.¹⁷

Reengineering in Place. Most managers and logisticians agree that productivity improvement through process reengineering is a key to cost reduction and increased responsiveness. Evidence also shows that management reorganization can facilitate process change—particularly where the reorganization breaks down old organizational barriers. Consequently, three management reorganization alternatives were evaluated in this context. Although all three of these alternatives are forms of centralization, the purpose of including them in this analysis was to examine their potential for accelerating the pace of process improvement, rather than for centrally managing depot operations. Specific characteristics of these alternatives are presented in the following subsections.

-- *Commodity Executive Agents (CEAs).*

- CEAs, notionally reporting through Service channels, would be created for major commodity groups such as ships, aviation, and ground systems.
- OSD/DDMC would continue to be responsible for overall depot maintenance policy.

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- CEAs would be responsible for workload assignments/priorities and associated capital investment decisions related to their respective commodity assignments.
- Individual Services would continue to establish depot maintenance requirements and provide sustaining engineering support for their respective weapon systems. They would also continue to own and operate their respective depots in accordance with OSD/DDMC policy guidelines and CEA workload priorities.

-- *Joint Depot Maintenance Command (JDMC).*

- OSD would continue to be responsible for overall depot maintenance policy, but DDMC would be disbanded.
- JDMC, notionally reporting to the Joint Chiefs of Staff, would be responsible for all depot maintenance workload assignments/priorities and associated capital investment decisions.
- Individual Services would continue to establish depot maintenance requirements and provide sustaining engineering support for their respective weapon systems. They would also continue to own and operate their respective depots in accordance with OSD policy guidelines and JDMC workload priorities.

-- *Defense Depot Maintenance Agency (DDMA).*

- OSD would continue to be responsible for overall depot maintenance policy, but DDMC would be disbanded.
- DDMA, notionally reporting to OSD, would be responsible for all depot maintenance workload assignments/priorities and associated capital investment decisions. It would also own and operate the DoD depots within OSD policy guidelines.
- Individual services would continue to establish depot maintenance requirements and provide sustaining engineering support for their respective weapon systems, but they would no longer have any control over depot operations.

Public Corporation. Some logisticians believe that depot maintenance restructuring efforts are hindered by inflexible personnel rules, ineffective capacity-adjustment mechanisms, the strictures of the Federal Acquisition Regulation (FAR), and similar constraints that come with being part of government. The *Public Corporation* option would create an organization that is not encumbered by such constraints. Specific characteristics of this corporation would include

- operation as a not-for-profit organization, deriving operating funds from fees charged to users;
- provision of services using a combination of corporation depots (staffed by non-Federal-government employees) and private sector, commercial sources of repair;
- generation of capital improvement funds in capital markets, although there may be unusual circumstances where appropriations would be appropriate; and
- responsibility for management and sustaining engineering, with sustaining engineering being provided on a fee-for-service basis and management costs being captured in overhead.

The current DoD maintenance depots would either be transferred to the public corporation or be closed, but the Services would retain requirements determination and sustaining engineering oversight to ensure strong user-provider linkages.

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Phased Privatization. About 30 percent of DoD depot maintenance work is currently done in the private sector by more than 1500 commercial prime contractors, ranging from original equipment manufacturers with thousands of employees and extensive capabilities to small "job shops" with few employees and limited, specific capabilities. Within this set of private sector capabilities is a growing number of commercial maintenance facilities offering support generally commensurate with DoD depot capabilities (Appendix A).¹⁸ Leading private sector maintenance activities are making productivity gains and cost reductions far in excess of DoD.¹⁹ Therefore, integrating existing DoD work into the competitive "mainstream" of the private sector may offer the best opportunity to reduce costs and increase responsiveness on depot maintenance work. The intent of this option is to compete nearly all depot work in the private sector. For new weapon systems lifecycle support decisions made early in the acquisition process would require private sector support unless analysis justified no commercial capability available upon the systems' fielding. Existing workloads associated with systems (such as transport aircraft) for which there is a commercial equivalent would go to the private sector first. Militarily-unique systems (except ships) would be maintained in existing government depots [most of which would be converted to government-owned, contractor-operated (GOCO) facilities] for some period of time,²⁰ but there would be an eventual transition of nearly all depot work to the private sector. Details for existing depot workloads and functions follow:

- *Aviation:* Contract for depot work with the private sector as follows:
 - ◆ All airframe maintenance for transport-like (e.g., airlift and tanker) aircraft immediately. Catalogue lessons learned and use that information as the basis for using existing commercial capabilities and/or establishing government-owned, contractor-operated (GOCO) facilities for depot maintenance of high-performance aircraft (e.g., fighters and bombers) and helicopters.
 - ◆ All commercially supportable gas turbine engine (GTE) maintenance immediately and GTE maintenance for high performance aircraft in concert with corresponding airframe maintenance.
 - ◆ All commercial-like, high-density component workloads (landing gear, hydraulics, generator, communication/navigation) immediately. For economy of scope and to ensure the availability of ready and controlled sources, package workload in relatively large groups of similar items. Catalogue lessons learned and use that information as the basis for the subsequent transition of DoD-unique and low-density components (e.g., attack radar, high-power electronic countermeasures, low-observables).
- *Ships:* Contract the workload with the private sector and divest organic capability except for a small amount needed ensure the existence of a second source of repair and/or to avoid unacceptable maintenance backlogs. Alternatively, privatization could entail creation of GOCOs rather than outright divestiture of facilities.
- *Ground systems:*
 - ◆ Contract with the private sector for automotive and commercially compatible communications/electronics workload and close related organic facilities.
 - ◆ Catalogue experience with automotive and commercially compatible communications/electronics as the basis for using commercial capabilities and/or establishing GOCO facilities to perform depot maintenance on armor and military-unique communications/electronics.

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- *Production management*: Transition to the private sector along with the workload.
- *Sustaining engineering*: The engineering knowledge base that underpins sustaining engineering is held as much in the knowledge of government technicians, government engineers, and their contract engineering and technical assistance support contractors, as it is in formal documentation. Since that knowledge is critical to being a smart buyer, sustaining engineering responsibility should remain stable to preserve continuity during the transition period (notionally, 5 years). When post-transition stability has been reached, the potential for reassigning sustaining engineering to the private sector should be reexamined.
- *Requirements Determination*: Retain as an inherent government function.

The phased privatization option has two important premises: first, that relief can be obtained from congressional restrictions such as limitations on the use of contract depot maintenance sources²¹; and second, that a fundamental change in depot maintenance procurement practices (from many, small, limited duration, cost limiting contracts to fewer, larger, longer-duration, value enhancing contracts) would be implemented. Failure to satisfy these premises compromises the viability of privatization.

Rapid Privatization. This option is based on two additional premises: first, that the private sector can provide all DoD depot maintenance support without the transition process described under *Phased Privatization* and second, that DoD can successfully divest its depot infrastructure. Maintenance management would be transferred with the workloads, but sustaining engineering would remain in place to preserve continuity during the transition period (notionally, 5 years). Requirements determination and engineering oversight would be retained by the Services.

The options in this issue paper are linked to the options in the *Material/Supply Management* issue paper and to those in the *Aviation Infrastructure* issue paper. The *Material/Supply Management* issue paper examines the same set of privatization and internal reorganization options as does this paper. Although the same option does not have to be elected for materiel management and depot maintenance, the potential interactions between the issue papers must be considered. The *Aviation Infrastructure* paper examines, for aviation rather than maintenance, essentially the same options that are described here as reengineering in place.

EVALUATION

The following criteria, listed in order of relative importance, were used to evaluate each option:

Responsiveness: The ability to provide assured and timely depot support during peacetime and contingency operations.

Cost (Economy and Efficiency): The degree to which short- and long-term cost of depot support could be reduced by implementing a given option.

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Implementability: The degree to which a specific depot maintenance option is functionally, operationally and politically acceptable.

Adaptability: The ability to adjust to changes in force structure, technology, and management methods without undue delay.

The responsiveness and cost criteria stem directly from the issue statement, and implementability is included for obvious reasons. Adaptability is included as a criterion since the depot maintenance form that is best able to adapt to changing threat, technology, and similar external influences will end up less costly and more responsive in the long run.

Of these criteria, responsiveness is judged to be the most important since DoD must view support of its fighting forces as its primary objective. Cost is suggested as the second most critical criterion. Depot maintenance is a resource-consuming industrial activity -- to the extent that it inefficiently uses resources it detracts from the ability to support other, potentially higher priority, requirements. Implementability is suggested as the third most important criterion since, other things being equal, the option that is more readily implementable will provide earlier and more beneficial results. Long-term organizational and process adaptability is important but, because of the practical difficulties involved in anticipating long-term results, it is recommended that it be the least important of the four criteria. The evaluation of each option against these criteria follows.

Baseline Option

- *Responsiveness:* The current depot maintenance support structure is generally considered to be responsive to the needs of the operating forces because a close working relationship exists between DoD depots and their customers. Operation Desert Storm provided numerous examples of depot actions that enabled quick resolution of unanticipated maintenance support problems. However, evidence indicates that the current DoD depot infrastructure is not as responsive as it could be. Overall depot repair cycle times have remained relatively stable in the range of 50 to 100 days, while cycle times in the best private-sector firms have shrunk by nearly 60 percent.²² There is a reasonable basis for believing that DoD has the technical means to reduce cycle times: the Air Force in implementing two-level maintenance (part of its Lean Logistics initiative) has demonstrated repair cycle times of under 10 days.²³ It is not clear, however, given current paradigms that such cycle time reductions can be institutionalized throughout DoD.
- *Cost (Economy and Efficiency):* The current depot maintenance annual cost is approximately \$12 billion. As a rough estimate, actions underway -- such as implementation of the Depot Maintenance Standard System and elimination of excess capacity through BRAC-95 -- will reduce average annual expenditures (in constant FY95\$) over the period FY96-01 to about \$10.0 billion.²⁴ Steady state annual cost (beginning in FY04) will be about \$8.6 billion in FY95\$.
- *Implementability:* Since the baseline is in place, its implementability is not in question.

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- *Adaptability:* Adaptability has proved to be a problem for the baseline as evidenced by the significant difficulty the government has experienced in divesting excess depot facilities and in taking advantage of management technology such as those incorporated into DMSS.

Reengineering In Place -- Commodity Executive Agents, Joint Depot Maintenance Command and Defense Depot Maintenance Agency

- *Responsiveness:*

- *Commodity Executive Agents:* It is not likely that establishment of CEA's would improve depot responsiveness. In fact, responsiveness would probably be degraded in some cases. For example, establishment of a CEA for fixed-wing aircraft would undoubtedly create conflict between the Navy and the Air Force because the Navy and Air Force have adopted maintenance philosophies that are designed to support significantly different forward deployment strategies. While the Navy continues to maintain a robust intermediate-level maintenance capability to make its forward-deployed carriers virtually self-sufficient, the Air Force has initiated an aggressive plan to eliminate much of its intermediate-level capability to maximize the mobility of its strategically deployable units. It is unreasonable to expect a single CEA to support both philosophies as responsively as the current Service-specific depot management structure.
- *Joint Depot Maintenance Command:* Establishment of a JDMC could improve depot responsiveness for joint operations and facilitate sharing of depot process improvements across Service lines; but it is not clear that a JDMC would be sufficiently effective in this regard to justify creating an additional level of depot management bureaucracy. While major differences exist between the Navy and Air Force approaches to aviation maintenance, the differences between ship, aviation, and ground vehicle maintenance are even more pronounced. Consequently, it is not likely that a JDMC would provide any more responsiveness than the existing depot management structure.
- *Defense Depot Maintenance Agency:* Although establishment of a DDMA might provide increased opportunities for depot consolidation, there is no evidence that it would be more effective than the current depot management structure in facilitating process improvement. In fact, experience in the private sector suggests that management consolidation may actually impede process improvement because it tends to isolate the decision-makers from the people who are actually doing the work.²⁵ Therefore, many large private-sector firms such as IBM have begun to decentralize in order to foster more innovative management methods. Furthermore, a recent study conducted by the Under Secretary of Defense (Logistics) determined that a DDMA was the least desirable depot management alternative from a responsiveness viewpoint.²⁶
- *Cost (Economy and Efficiency):* Attempts to reengineer in place, whether through commodity realignment, a depot command, or a depot agency will have little if any additional beneficial effect on costs. The basic reason is that the three different depot maintenance workloads, possibly excepting aviation, are already at a natural scope. All ship workload is centralized with the Navy, and nearly all ground vehicle maintenance is managed by the Army. Limited complementarity exists among ships, aircraft, and ground vehicle maintenance. Additionally, the evidence to date suggests that, because government-operated depots lack competitive pressure, they will have great

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difficulty achieving the kinds of process improvements typical of the private sector.

- **Implementability:** Recent congressional guidance has discouraged depot management consolidation.²⁷ Hence, it is not reasonable to assume that any recommendation for a large-scale depot management consolidation will be well received on Capitol Hill. The Services and OSD are also likely to oppose any management consolidation option that they perceive would weaken the linkage between the maintenance depots and the operating forces. In fact, DoD considered consolidation alternatives in 1993 and determined that the preferred management option was to further strengthen the DDMC.²⁸
- **Adaptability:** Much evidence shows that organizations whose management is centralized tend to be less adaptable because of their larger size and hierarchical structure.²⁹

Public Corporation

- **Responsiveness:** Some evidence indicates that a public corporation might be more successful than DoD in improving processes. As examples, such a corporation would (notionally) have greater freedom in establishing personnel policies (and hence greater latitude in establishing skill structures as well as in downsizing) and would be able to go to the private capital market to finance process-improving capital acquisitions. It would also have greater freedom in the methods it used to contract with private firms -- particularly in its ability to compete workload on the basis of best value rather than price. To the extent that those factors are actually operative, more rapid process improvements could result in greater responsiveness. The primary difficulty with a depot maintenance public corporation, however, is that it would by its monolithic nature create additional hierarchy. As a non-DoD entity, it would create a greater barrier between maintenance and materiel management and between depot maintenance and users. Arguably, the greatest gains from process improvements come through a closer link between depot maintenance and users and not from changes strictly internal to depot maintenance. For those reasons, the public corporation is seen as degrading responsiveness.
- **Cost (Economy and Efficiency):** It is not possible to confidently estimate savings or losses that would accrue from this option because too much uncertainty exists about the organization of a depot maintenance corporation in terms of the relationships with its DoD customers and its private sector suppliers.³⁰
- **Implementability:** From the standpoint of the enabling public law, there are no impediments to putting in place a public corporation to perform depot maintenance.³¹ However, the very reasons that such a corporation might be attractive (e.g., relief from the Employee Classification Act, the Small Business Act, the Competition in Contracting Act, and similar laws as well as congressional oversight) are also reasons why Congress is likely to oppose such a change. The Services are likely to oppose the corporation since they will probably perceive it as weakening the linkage between the maintenance depots and the operating forces.
- **Adaptability:** Because a government corporation would be able to operate like a commercial entity, would have access to private capital markets, and would be relieved from a wide range of restrictive government regulations and laws, it would be more adaptable than the baseline.

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Phased Privatization

- **Responsiveness:** Review of the current industrial situation indicates that airlines as well as aircraft manufacturers and third-party maintenance contractors have maintenance capabilities and proven responsiveness equal to or better than the organic aviation depots (Appendix A).³² Similarly, no real difference exists in the responsiveness of public and private shipyards.³³ In addition, the best commercial firms have demonstrated a better capability than DoD to introduce process changes that improve responsiveness to their customers. By aggressively pursuing privatization of commercially supportable depot work and selective, use of existing government/GOCO facilities, DoD can obtain the benefits of the innovative process improvements that are being made in the private sector.
- **Cost (Economy and Efficiency):** Privatization options hold more promise for substantial cost reductions than the baseline, given relief from current legislative and regulatory constraints. The best private firms, by redesigning their processes, have been reducing cost by 30 percent or more while improving responsiveness to their customers. Similarly, DoD has realized gains on the same order of magnitude when it opens up depot maintenance workload to competition. However, the substantial costs of divesting depot infrastructure will offset near-term savings.
- **Implementability:** Depot maintenance management and operations have long been subject to detailed congressional oversight and guidance. Current public law states: "...it is essential for the national defense that Department of Defense activities maintain a logistics capability (including personnel, equipment, and facilities) to ensure a *ready and controlled source* [emphasis added] of technical competence and resources necessary to ensure effective and timely response to mobilization, national defense contingency situations, and other emergency requirements."³⁴ Congress has also mandated the relative share of depot work that must be performed by DoD employees (not less than 60 percent)³⁵ and constrained workload shifts that affect DoD depots. Consequently, depot work cannot be significantly privatized without changes to legislation. In addition, the Services are likely to oppose any privatization option that would require them to contract depot workload they consider necessary to maintain essential depot maintenance capabilities. In addition technical barriers may exist to the privatization of military-unique depot workloads that require specialized facilities and/or support equipment that is not readily available in the private sector. This option, however, provides the latitude to retain capabilities for which the private sector cannot ensure ready and controlled support.
- **Adaptability:** This option will provide better adaptability than the baseline because depot maintenance support will be provided by the private sector, and the best private-sector firms have shown better ability to adapt to new management methods than have DoD depots.

Rapid Privatization

- **Responsiveness:** Responsiveness is an area of serious uncertainty for the following reasons: it places more than \$8 billion of workload in the private sector in a relatively short period of time; significant parts of that work (such as on military-unique systems) may not find ready and

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controlled sources; implementation is total rather than phased so little or no opportunity is available to learn from mistakes; and the radical "breakage" of established maintenance-distribution-supply-transportation channels will likely create considerable transitional confusion. Consequently, responsiveness is likely to be degraded until transition difficulties can be resolved.

- **Cost (Economy and Efficiency):** Since the difference between this option and phased privatization is one of timing rather than end state, overall cost expectations are similar.
- **Implementability:** All of the implementability concerns addressed for *phased privatization* apply to this option. Additionally, moving more than \$8 billion in workload into the private sector within a short time would probably impose significant contractability issues. Finally, because this is an all-or-none approach, it has none of the mitigating features of phased privatization.
- **Adaptability:** The considerations enumerated for phased privatization apply here as well.

Summary Table

The table below is a summary comparison of the options. Costs are in FY95 dollars and are averaged over the period shown. The other criteria are evaluated on a 7-point (-3, -2, -1, 0, 1, 2, 3) scale with the baseline set at 0. Positive scores indicate improvement compared to the baseline and negative scores indicate a degraded result.

Evaluation Summary — Depot Maintenance

Options	Total Cost FY 96 - 01 (\$B) in FY95 \$	Annual Steady State Cost (FY04) in FY95 \$	Responsiveness	Adaptability	Implementability
Current baseline	0.0	0.0	0	0	0
Reengineering options					
Commodity Realignment	0.0	0.0	0	0	0
Joint Depot Maintenance Command	-0.0	-0.0	1	1	1
Depot Maintenance Agency	-0.0	-0.0	-2	-1	-2
Public Corporation	<i>Indeterminate</i>	<i>Indeterminate</i>	-2	1	-3
Phased Privatization	-1.4	-1.1	1	1	-2
Rapid Privatization	-2.2	-1.7	-2	1	-3

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Notes

¹ *Report of the Defense Science Board Task Force on Depot Maintenance Management*, April 1994, pp. 15-17; A. T. Gray, NADOC Code 311, *Econometrics. Application and Examples, Naval Aviation Depots*, September 1993.

² Efficiency operationally defined as cost reduction. As discussed later, excess capacity is projected to be approximately 17%, excess capacity effects overhead, and the overhead rate is approximately 40 percent of total cost.

³ Memorandum, Gerald W. Bapst., *Benchmarking Performance in the Commercial Sector*, 29 January 1995.

⁴ John B. Handy and Dennis J. O'Connor, *How Winners Win: Lessons Learned From Contract Competitions in Base Operations Support*, Logistics Management Institute, September 1984; *Report of the Defense Science Board Task Force on Depot Maintenance Management*, April 1994, Appendix F; Alan J. Marcus, *Analysis of the Navy's Commercial Activities Program*, Center for Naval Analysis, July 1993. Marcus also found that the costs do not rise again on subsequent competitions.

⁵ Handy and O'Connor, op. cit.

⁶ *Report of the Defense Science Board*, Appendix D.

⁷ Joint Depot Maintenance Analysis Group Interservicing Data. Applies to susceptible workload, i.e., that for which interservicing is feasible.

⁸ This point is discussed in greater detail under the Phased Privatization Option.

⁹ Surge is an increase in the rate at which repairable components and engines are returned to serviceable condition. A component or engine is surged if it is in work and turned out earlier than schedule or if it is inducted ahead of schedule and then repaired. Surge rates varied by Service and time period. Although the record is incomplete the following appear to be substantiated: 1) the Air Force surged 10% of repairs from Aug. 1990 to Jan 1991 and 30% after Jan. 1991; 2) various sources indicate a naval aviation surge of from 30% to 185% depending on type of component, although the overall increase in naval aviation depot work appears to be on the order of 2%; 3) Army depots surged 53% during the conflict compared to FY90 production rates; 4) Marine Corps surge during reconstitution was approximately 60%. References: Elliot A. Cohen, et al., *Gulf War Air Power Survey*, Vol. III, Part I, Ch. 8., 1993; CDR Phil Fox, NADOC-0166, *Analysis of Naval Aircraft Depot CORE Maintenance Capabilities and Naval Aviation Industrial Base Issues*, 11 March 1994; Jonathan W. Leland, *Core Methodology: A Critique and Generalization*, CRM95-33 (Draft), Center for Naval Analysis, Jan. 1995; Briefing, U.S. Army Depot Systems Command, "Organic Depot Maintenance Support to Desert Shield/Storm," 31 Jan 1991; Joint Uniform Lessons Learned System (JULLS) 40950-96498, 40952-00104, 40952-78559, 51041-70811.

¹⁰ Fox, op. cit.

¹¹ Logistics Management Institute, *Logistics Issues Case Studies for the Roles and Missions Commission of the Armed Forces*, January 1995. Included at Appendix A.

¹² *Integrated Management of Department of Defense Depot Maintenance Activities*, Office of the Deputy Under Secretary of Defense (Logistics), October, 1993, pp. 3-3-3-12.

¹³ Frank Camm, *DoD Should Maintain Both Organic and Contract Sources for Depot-Level Logistics Services*, RAND, August 1993.

¹⁴ Defense Depot Maintenance Council, *Business Plan Fiscal Years 1995-1999*.

¹⁵ *Integrated Management*, Chap. 2.

¹⁶ James H. Perry, et al., *Improving Depot Repair Cycle Management: A Challenge for Supply and Maintenance*, Logistics Management Institute, August 1987. More recent and as yet unpublished research failed to note any improvement. Supply and transportation delays are in additive to depot repair cycle times.

¹⁷ Defense Science Board Study, p. 17.

¹⁸ *Logistics Issues Case Studies for the Roles and Missions Commission of the Armed Forces*, op. cit.

¹⁹ *Ibid.* This is true for software as well as hardware; Institute for Defense Analysis, "Abstract: Depot Maintenance Report on Embedded Weapons Software," Feb. 1995.

²⁰ British experience after converting public shipyards into GOCOs is positive in terms of both cost and quality; Carla Tighe and Micky Tripathi, Center Naval Analysis Memorandum: "Trip to British Shipyards," 30 Oct. 1993.

²¹ 10 USC 2466 requires that not more than 40 percent of depot maintenance funds be expended on work that is performed by non-Federal government employees.

²² Bapst, *Benchmarking*, op. cit.

²³ Col. David R. Zorich, AF/LGM-2, Briefing: "FY-94 2LM Metrics Summary," December 1994.

²⁴ Included in this estimate is an 8 percent savings from DMSS implementation and a 5 percent savings from additional downsizing; As the amount of savings from DMSS was a matter of discussion within the Department at the time this paper was prepared, the DMSS Functional and Economic Analysis was used as a source.

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²⁵ Marygall K. Brauner and Jean R. Gebman, *Is Consolidation Being Overemphasized for Military Logistics?*, RAND, March 1993.

²⁶ Department of Defense, *Integrated Management of Department of Defense Depot Maintenance Activities*, Vol. 1, October, 1993.

²⁷ FY 1994 Armed Forces Authorization Act.

²⁸ *Integrated Management*, pg. xii.

²⁹ George Donohue, et al., *DoD Centralization: an Old Solution for a New Era?*, RAND, April 1993.

³⁰ A credible basis for estimating the relative cost performance of a Public Corporation was not found. In general, however, state-owned and mixed ownership enterprises perform substantially worse than privately owned enterprises and the various forms of state-owned enterprise offer little to choose among them; Anthony E. Boardman and Aidan R. Vining, *Ownership and Performance in Competitive Environments: A Comparison of the Performance of Private, Mixed, and State-Owned Enterprises*, Journal of Law and Economics, vol. XXXII (April 1989), pp. 1-26.

³¹ John Ciucci, Memorandum: *Government Corporations*, Logistics Management Institute, February 1995.

³² *Logistics Issues Case Studies for the Roles and Missions Commission of the Armed Forces*, op. cit.

³³ John D. Keenan, et al., *Issues Concerning Public and Private Provision of Depot Maintenance*, Center for Naval Analyses, Apr. 1994; Tighe and Tripathi, "Trip to British Shipyards."

³⁴ 10 USC 2464

³⁵ 10 USC 2466

³⁶ Includes estimated effects of process improvement implemented by the Depot Maintenance Standard System and the divestiture of excess capacity through BRAC-95.

³⁷ See note 30 above.

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FORCE STRUCTURE VERSUS INFRASTRUCTURE

Overview

The United States has reduced its armed forces by approximately 30 percent, since the end of the Cold War and the dissolution of the Soviet Union. However, the associated infrastructure has only decreased by about 15 percent, mainly through the base closure and realignment process.

After BRAC 1993, Defense officials warned that BRAC 1995 would be the toughest yet in a process that has already eliminated 250 bases, including 70 major facilities. In January 1994, the Secretary of Defense stated a BRAC 1995 goal to further reduce the overall DoD domestic base structure by a minimum of 15 percent of DoD-wide plant replacement value and required cross-service and intra-service opportunities be pursued to achieve it. The level of reduction would approximate the 1988, 1991, and 1993 rounds combined. For the first time BRAC 95 included five joint cross-service groups to suggest alternatives for realignments and closures in the functional areas of depot maintenance, research and development laboratories, test and evaluation, undergraduate pilot training, and hospitals.

In January 1995, the Secretary stated that fewer bases would be recommended this year than in 1993 when 130 were recommended because the easy recommendations had been made and the up-front costs of implementing more realignment and closures were too high. Current indications are that the Secretary's recommendations will cover 110 bases which will include few depots, laboratories, and test and evaluation facilities. Moreover, few, if any, of the joint

cross-service groups' suggested alternatives were recommended because the Services generally considered only intra-service realignments and closures, some of which may have been deleted for political reasons: According to Newsweek magazine, "air force plans to close at least two of its five maintenance depots in California and Texas have also been scotched" at the request of the White House because of its concerns regarding the adverse impact of the closures on the 1996 election. Following is a discussion of the mission and infrastructure of these three areas, respectively:

Depot Maintenance

Laboratories

The mission of DOD laboratories is to maintain technological superiority over potential adversaries. The laboratories also provide technical expertise to the Military Departments so they will be smart buyers and users of new and improved weapons systems and support capabilities. The total DoD funding for Research, Development, Test, and Evaluation (RDT&E) laboratories in FY 1991 was \$13.8 billion.

There are 81 laboratories within the Department of Defense: 1 DOD, 28 Army, 28 Navy, and 24 Air Force. Through FY 1994, the labs have been relatively unaffected by the end of the Cold

War. Their multi-billion dollar budgets have declined only slightly in real terms since 1989 and they remain about the same size as they were during the mid-1980's Cold War peak.

According to an April 1994 Defense Science Board report:

“The U.S. Combatant Commands are undergoing great change to reflect the fundamental changes in the threats they face with the end of the Cold War and the dissolution of the Soviet Union. Forces are shrinking and their missions are evolving. The Defense laboratory system on which the combatant commands must rely for their technological edge has not kept pace. The laboratory system remains an obsolescent artifact of the Cold War”.

The report states that the laboratory system also has not kept pace with the changing patterns of technology generation. No longer does DOD drive all militarily critical, cutting edge technologies. American industry, universities, and other government agencies play significant roles. Accordingly, one of the DSB's recommendations is that an additional 20 percent cut in the defense laboratory Civil Service personnel (above the 4 percent per annum directed by DPG 95-99) is necessary and the cut can be achieved through closures and realignments.

A December 1994 DoD Office of the Inspector General (OIG) report states that the Director, Defense Research and Engineering (DDR&E) lacked the resources to provide adequate policy guidance and oversight of the Military Department laboratories and the Advanced Research Projects Agency. At the conclusion of its audit, the OIG found that DDR&E was in the process of issuing science and technology programming guidance, but more needs to be done. According to the report, DOD is making redundant investments in laboratory facilities and equipment, as

well as research projects. Project Reliance as implemented by the Joint Directors of Laboratories has resulted in minimal savings and few consolidations of laboratory facilities.

An April 1994 DoD/ OIG report estimated that DoD could save a significant portion of \$160 million (1991 BRAC MILCON and equipment funds) planned at that time for new building construction and equipment for Army and Navy laboratories by utilizing existing Air Force laboratory space and equipment. The Director, Defense Research and Engineering (DDR&E) and the Services generally nonconcurred on the basis that BRAC 1991 and 1993 had confirmed the need for the facilities and equipment. However, the DoD Comptroller stated that a temporary withhold had been placed on the MILCON funds and suggested that BRAC 95 would provide an appropriate opportunity to restudy the issues.

Another April 1994 DoD/OIG report stated that DoD could avoid spending as much as \$306 million (\$169 million BRAC MILCON and equipment funds and \$137 million O&M costs) by utilizing existing laboratory space and equipment, rather than the Army building new facilities and buying new equipment. The DDR&E and the Services generally disagreed. The DDR&E stated that the expenditures were necessary because BRAC 1991 approved the Army's proposal to close the Electronics and Power sources Directorate of the Army Research Laboratory at Fort Monmouth, N.J., and relocate the laboratory to Adelphi, M.D. The DoD Comptroller stated that a temporary withhold had been placed on the military construction pending a ruling by the DOD Office of General Counsel, of the legal implications. The Comptroller suggested that the issue of moving the Army laboratory could be studied further as part of BRAC 1995.

Test and Evaluation

Depot maintenance consists of repair, rebuilding and major overhaul of weapon systems, parts, and assemblies. DoD depot maintenance facilities consist of extensive shop facilities, specialized equipment, and highly skill technical and engineering personnel. Depot maintenance consists of two segments. The segment that is performed within DoD depots, known as “organic” consists of Army depots, Air Force air logistics centers, Naval aviation depots, Naval shipyards and Marine Corps multi-commodity maintenance centers. Approximately 120,000 DoD civilians and 2,000 military personnel are employed in the organic segment. The other segment is comprised of private sector firms including both original equipment manufacturers and maintenance and repair organizations. Approximately 70% of the depot maintenance workload is organic, 30% is performed by the private sector.

The DoD depot maintenance infrastructure will be composed of 24 depots, after the BRAC 1993 closures are complete, consisting of:

- 5 Army depots;
- 5 Air Force air logistics centers;
- 1 Air Force guidance and metrology center;
- 3 Naval aviation depots;
- 5 Naval shipyards;
- 3 Naval warfare centers; and
- 2 Marine Corps multi-commodity maintenance centers.

The 1991 and 1993 Base Closure processes resulted in the closures of 10 depots. The DoD’s 1995 recommendations are for the closure and realignment of the following depots:

- | | |
|-----------|--|
| Army | Close 3 depots
Realign 2 depots |
| Air Force | Realign 5 air logistics centers |
| Navy | Close 1 shipyard

Redirection for 1 Aviation depot

Close 3 warfare centers
Realign 7 warfare centers |

Maintenance Capacity:

The amount of workload, expressed in direct labor hours, that a facility can accommodate with all work positions manned on a single-shift, 5-day, 40 hour week basis while producing the product mix that the facility is designed to accommodate.

Excess Maintenance Capacity:

Maintenance plant capacity that is excess to utilized and surge requirements expressed in thousands of square feet.

Supply Capacity:

The square footage of warehouse space for the storage of items other than ammunition and bulk fuel.

Excess Storage Capacity:

Total unused square footage of warehouse space for the storage of items other than ammunition and bulk fuel.

Production Capacity:

The amount of workload, expressed in actual direct labor hours, that a facility can accommodate with all work positions manned on a single-shift, 5-day, 40-hour week basis while producing the product mix that the facility is designed to accommodate.

Excess Production Capacity:

Industrial Production plant capacity that is excess to utilized and surge requirements expressed in production facility square feet.

investments, (2) the Services were allowed to retain their existing test and evaluation capabilities and funding authority, and (3) the Reliance study methodology had major weaknesses.

January 1994 Secretary Perry:

- stated BRAC 95 goal of 15 % reduction in plant replacement value
- required cross-Service and intra-Service opportunities to be pursued throughout BRAC95 process
- a number of Cross-Service teams, led by OSD Officials were established including in the following areas:
 - Depot Maintenance
 - Test and Evaluation
 - Research and Engineering Laboratories
- DoD Cross-Service effort likely to produce much better data than ever before available
 - detailed data calls and efforts to normalize will result in more comparable data, particularly in the maintenance depot area
- The DoD recommendations will not include inter-Servicing or closures in the Cross-Service areas, despite that fact that there is tremendous excess capacity
- All Cross-Service options/recommendations were passed back to the Services who had final say what would be in DoD's of recommended closures

Maintenance Depots

- over the past five years, DoD annual maintenance costs have been approximately \$13 billion
- 24 maintenance activities will remain after the 7 closures recommended by the 91 and 93

Commissions are complete

- a well respected study performed by Gen Went (USMC ret) stated that there will be ~~72%~~ ^{there was excess} ~~capacity utilization in FY 97~~ _{OS-50% capacity}
- The maintenance depot Cross-Service group identified 5-8 depots that could be closed, we believe the DoD recommendations to the Commission will include 3 maintenance activities

Test and Evaluation

- Test and Evaluation facility funding and infrastructure has generally been protected from down sizing.
- The BRAC 95 process, for the first time, is to address cross-Service utilization of common support assets
 - 19 major test ranges
 - \$5 billion operations cost
 - \$20 -30 billion capital investment
- DoD has not aggressively pursued consolidation of major test and evaluation facilities even through testing of air vehicles, electric systems and armament weapon show significant excess capacity and greatest potential for cross-Service consolidation

- DoD's test and Evaluation Reliance process established to consolidate existing test capabilities has not been effective
 - focus shifted from consolidation to future test investments
 - military services allowed to retain their existing test capabilities and funding authority
 - Reliance study methodology had major weaknesses

put in
bullet form

The United States has reduced its armed forces by approximately 30 percent, since the end of the Cold War and the dissolution of the former Soviet Union. However, the infrastructure has decreased only 15 percent., mainly through the base realignment and closure process. After BRAC 1993, defense officials warned that BRAC 1995 would be the toughest yet in a process that already has eliminated 250 bases, including 70 major facilities. The Secretary of Defense last month partly allayed such fears, saying fewer bases would be recommended this year than in 1993, when 130 were recommended.

In January 1994, the Secretary of Defense stated a BRAC)1995 goal of a 15 percent reduction in infrastructure based on plant replacement value. Accordingly, the Secretary required cross-service and intra-service opportunities to be pursued throughout the BRAC 1995 process. A number of cross-service teams, lead by Office of the Secretary of Defense officials were established. These teams requested such data from the Services, analyzed the data, and made recommendations to the Services to reduce and/or consolidatetheir infrastructure. The Services responded to the Secretary with their recommendations. While the Secretary's final recommendations will not be known until the list is published in the Federal Register, preliminary indications are that they will be significantly fewer than originally recommended by the cross-service teams.

The BCARC 1995 Cross-Service Team is concerned that without additional installations being added to the Secretary's recommended list opportunities will be lost to reduce unneeded/excess DOD capacity in the areas of depot maintenance, test and evaluation, and laboratory infrastructure:

Depot Maintenance

Over the past 5 years, DoD's annual depot maintenance costs have been approximately \$13 billion. There are 24 maintenance depots that will remain after the 7 closures recommended by the 1991 and 1993 Commissions have been implemented. A well respected study performed by General Went (USMC ret.) stated that only 72% of the depot maintenance capacity will be utilized in FY 1997. DOD's maintenance depot cross-service team identified 5 to 8 depots that could be closed, however, we believe the Secretary's recommendations to the BCARC will include on.ly three maintenance depots.

Test and Evaluation

Test and evaluation funding and infrastructure have generally been protected from down sizing. Within DOD there are currently 19 major test ranges, with \$5 billion operations cost and \$20 billion to \$30 billion in capital investment. DoD has not aggressively pursued consolidation of major test and evaluation facilities even through testing of air vehicles, electric systems and armament weapon show significant excess capacity and the greatest potential for cross-Service consolidation.

DoD's Project Reliance was established to consolidate existing test and evaluation capabilities but it has not bee effective because: (1) its focus shifted from consolidation to future test



Integrated Management of Department of Defense Depot Maintenance Activities

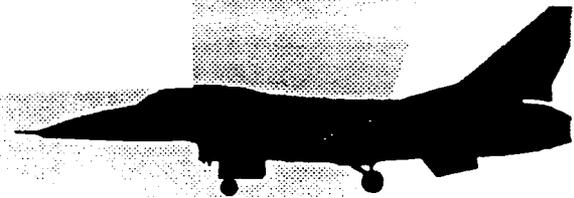
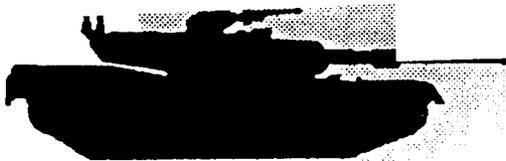
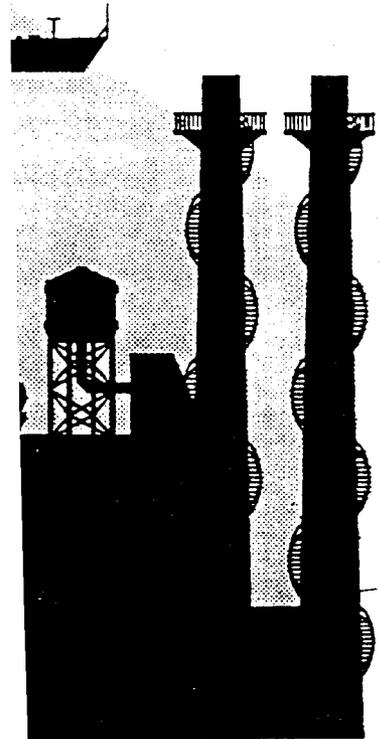
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Dick,
This report was
not completely BRAC
related, but I found
it pretty interesting
reading.

I hope to sit down w/
Bob Mason to
discuss some of the issues
raised here before
1 March. I hope
you'd be willing to join
me. - Ann -

P.S.

This is
Frank's copy
of the Report



DRAFT

EXECUTIVE SUMMARY

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TASKING

Since easing of geopolitical tensions in the late 1980s, reductions in force structure and operations tempo have decreased both the peacetime and wartime demand for depot maintenance -- in the process creating significant excess capacity. The basic purpose of this study was to implement the Secretary of Defense's tasking to aggressively pursue reductions in excess depot capacity by assessing the merits of establishing an Executive Agent, Joint Command, or Defense Agency for depot maintenance activities; examining possible further consolidation of depot activities; and exploring the benefits of enhanced bidding.

In order to satisfy the Secretary's tasking, the Study Team compared overall depot sizing to force structure and other key indicators, re-examined the concept of core, researched recent results from expanded depot maintenance competition, and captured depot-related lessons from Desert Shield/Desert Storm. The team also researched relevant trends in commercial practice and took a hard look at the relationship between organic depots and the industrial sector, including the potential for privatizing the depots or converting them to Government Owned, Contractor Operated (GOCO) plants.

MAJOR FINDINGS

The Department is successfully eliminating excess depot maintenance capacity. Actions underway will result in a depot maintenance personnel end strength some 30% below FY87 levels by the end FY94. Over 30% of the major maintenance depots existing in FY87 have been closed or recommended for closure. Overall, depot personnel, budgets, and the number of depots have decreased at roughly the same rate as supported weapon systems inventories, total military personnel levels, and operational activity levels. However, excess capacity will almost certainly still exist after closures are completed: one Air Force Air Logistics Center was initially recommended for closure but remains open as does one Army depot recommended for closure. Future force structure reductions in the offering may also create additional excess capacity.

Unnecessary duplication of capability and limited interservicing remain issues. Although closing or realigning the depots that have so far been identified will reduce intra-Service duplication, it does little for cross-Service duplication. Of total Corporate Business Plan savings, less than 3% is now planned to come from interservicing. The existing management structure, methods, and processes have not been effective at controlling inter-Service redundancy. In fact, the FY93 Base Closure and Realignment

Commission (BRAC 93) was critical of DoD efforts to provide integrated recommendations, supported by cross-Service analysis, for maintenance depots.

Future downsizing (i.e. closing and realignment of depots) will be required. This effort will require cross-Service workload assignment since there is limited remaining opportunity for the Services to unilaterally reduce capacity without affecting mission support. Because cross-Service cooperation has proved difficult under the current, narrowly focused, Service/Defense Depot Maintenance Council (DDMC) management structure, an improved cross-Service management structure with clear decision authority is needed. Cross-service resolution of unnecessary duplication of capability and excess capacity is also made more difficult because existing capacity measures are not capable of providing the kinds of insights that support necessary decision making.

The requirement for an organic CORE depot maintenance capability is still valid. Further, the Study Team proposed a new, multi-Service, framework including a common sizing algorithm for Service application. Application of this algorithm should result in a CORE capability smaller than has been maintained in the past.

Results so far indicate that competition is achieving anticipated benefits and driving efficiencies that might not otherwise be realized. Public-private and public-public competitions have been shown to eliminate inefficiencies and motivate innovation in both maintenance approaches and business practices. Contract awards in public-private competition appear to be overall relatively well balanced between public (organic depots) and private sources (contractors).

Whether or not depot maintenance should be used to protect the health of the U.S. industrial base, it has limited leverage to do so. Depot maintenance expenditures available to address industrial base considerations are less than 1% of total aerospace, motor vehicle, and electronics sales. Because discretionary depot maintenance dollars are small compared to the industrial base, any use of depot maintenance workload to assure its health will require careful targeting.

Successful commercial firms have concluded that an overemphasis on centralized control is dysfunctional because of inherent conservatism and unavoidable myopia of the "rational" analysis underlying centralized decisions. Additionally, intentional internal redundancy as a risk mitigation method has merit. Taken as a whole, these trends suggest a yellow light for centralization and consolidation.

There were four alternative management structures that were at least satisfactory in terms of Service criteria for military responsiveness, efficiency, authority and responsibility, implementability, and potential support to BRAC 95:

- An Empowered Defense Depot Maintenance Council
- Executive Service Management coupled with an Empowered Defense Depot Maintenance Council,
- A Joint Depot Maintenance Command, and
- A Defense Depot Maintenance Agency

The preferred alternative identified as a result of Services, JCS, and OSD formal evaluations was an Empowered DDMC. Empowerment of the DDMC includes:

- Broadening the charter of the DDMC from its current narrow focus on DMRD 908 implementation planning and execution to encompass all depot maintenance operations and issues
- Vesting in the DDMC well-defined decision making authority in specific areas of responsibility to provide integrated management of DoD depot maintenance resources, operations and business practices, e.g., controlling interservicing, workload consolidation, downsizing and utilization of facility capacity
- Providing the DDMC with a rational decision support system to monitor key operations and to identify and elevate significant decision requirements
- Consolidating staff support to provide the necessary resources for enhanced DDMC operations, e.g., establishment of the Maintenance Management Support Activity.

RECOMMENDATIONS

In response to the Secretary of Defense's basic tasking to assess the merits of alternative management structures, the Study Team recommends that, DoD implement the Empowered DDMC. This management alternative:

- Is embraced by the Services
- Has the necessary clout to provide oversight of the Department's depot maintenance operations, develop coherent DoD-wide policies, make decisions in key areas, and, in general, exercise the authority of the Secretary of Defense to provide effective, integrated depot maintenance management.

A pacing requirement for implementation is BRAC 95. DoD recommendations are due to the Commission by January 1995, less than 18 months away. Because it will take time for the Empowered DDMC to achieve full functionality, implementation now is needed to develop an integrated input supported by cross-Service analysis.

Additionally, the Study Team recommends that DoD:

- Promulgate as formal policy the CORE concept and sizing algorithm developed in Chapter 3 of this study. The justification for organic CORE depot maintenance has been revalidated and its relationship to the other segments that make up the depot maintenance industrial base is understood.
- Develop a new analytic basis (probably based on a metaphor other than capacity) for making workload consolidation, retention of redundant capability, and related

decisions. Similar to the approach taken by the Team with regard to CORE, any such undertaking needs first and foremost to have a coherent foundation. Development should begin soon to have any likelihood of affecting BRAC 95 recommendations.

- Continue the competition program (private-private, public-public, and public-private) - it is producing substantial benefits. Although level-playing-field considerations will continue to deserve attention in public-private competition, the empirical results thus far indicate the process is essentially fair: there has not been a decisive shift of workload from the public sector to private or in the reverse direction.
- Not, at this time, convert organic depot operations to Government owned, contractor operated (GOCO) plants. Although GOCO depots appear viable, the Department needs a better understanding of the practical application of the concept to depot maintenance operations and the advantage to be gained by making the change. DoD should complete a comprehensive evaluation of the GOCO concept for depot maintenance.
- Direct its depot maintenance managers to engage with the ongoing Undersecretary of Defense (Acquisition)-sponsored integrated assessment of the U.S. technology and industrial base to determine how and if depot maintenance workload should be used to preserve capabilities in the public sector.

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CHAPTER 1

OVERVIEW

INTRODUCTION AND PURPOSE

BACKGROUND

This study has its antecedents in the many preceding management reviews and several recent related efforts to evaluate DoD logistics resources and requirements. Most recently, in forwarding to Congress the Chairman of the Joint Chiefs of Staff's 1993 triennial *Report on the Roles, Missions, and Functions of the Armed Forces of the United States*, the Secretary of Defense (SecDef) indicated his plan to review management options for depot maintenance operations in DoD.¹ Given the Chairman's recommendation in his report to consider forming a Joint Depot Maintenance Command, SecDef indicated his desire to consider other management approaches prior to making a final decision. Coinciding with this consideration was the SecDef Central Logistics Infrastructure Review, a DoD-wide effort to develop and apply methodologies for measuring how much logistics infrastructure should be reduced with declines in force structure. Depot maintenance operations were a large part of the logistics infrastructure considered by the panel. Additionally, the SecDef chartered a Bottom-Up Review to balance future defense needs and programs, a review that must consider getting the highest return on logistics resources. Finally, also bearing on this current study is the National Policy Review, chaired by the Vice President of the United States, which may establish guidelines for Departmental management in a variety of functional areas.

Conducted in response to direction from the Secretary of Defense,² this study has several objectives. The basic purpose is to implement the Secretary's direction to aggressively pursue reductions in excess depot capacity. By direction, pursuing these reductions includes assessing the merits of various management structure alternatives such as establishing an Executive Agent, Joint Command, or Defense Agency for depot maintenance activities and examining possible further consolidation of depot activities and expansion of competitive bidding.³ Additionally, the study supplements both the Central Logistics Infrastructure Review and the Bottom-Up Review by looking at approaches to defining DoD CORE depot maintenance requirements and methods to ensure that DoD provides the necessary capabilities and capacity to accomplish both CORE and non-CORE workload needs.

¹SecDef letters to Chairmen of Congressional Armed Services Committees, 29 March 1993 .

²SecDef memorandum, Subject: Roles, Missions, and Functions of the Armed Forces of the United States, 15 April 1993.

³Assistant Secretary of Defense (Production and Logistics), *Terms of Reference for Depot Maintenance Infrastructure Review and Study of Options for Integrated Management DoD Depot Maintenance Activities*, May 21, 1993 (see Appendix A).

There have been many previous efforts to influence the shape of depot maintenance operations and improve depot maintenance efficiency within DoD. Some of these are outlined in the recent *Depot Maintenance Consolidation Study*⁴ and all have been more completely documented by the Maintenance Policy Directorate of the Office of the Secretary of Defense.⁵ These efforts have met with varying degrees of success. Most notable recently, perhaps, has been the operation of the Defense Depot Maintenance Council (DDMC), discussed later in this study. The DDMC provided a forum for joint Service cooperation and has established a foundation for integrated management of DoD depot maintenance.

DEPOT MAINTENANCE SCOPE

DoD depot maintenance is an important element of the defense industrial base. It provides repair, overhaul and modification for items ranging from complete weapon systems to their component parts. To do this requires extensive shop facilities, specialized equipment, and highly skilled technical and engineering personnel. Particularly because of its role in supporting contingency requirements, depot maintenance will continue to be vital in the national security environment of the future.

Depot maintenance consists of two segments. The organic segment (i.e., DoD-owned and operated facilities) is composed primarily of Army depots, Air Force air logistics centers, Naval aviation depots, Naval shipyards, and Marine Corps multi-commodity maintenance centers (MC3s). There are currently about 120,000 Federal civilian and 2,000 military personnel working in the organic segment. The private sector segment is comprised of thousands of commercial firms including both original equipment manufacturers and maintenance/repair operations. Since the mid-1980s, the organic segment has provided about 65% of depot maintenance and the private sector about 35%. When the costs of replacement parts used during organic depot maintenance and the costs of interim contractor support and contractor logistics support are taken into account, the total dollar expenditures on organic and private sector support of depot maintenance have been roughly equal.

Each segment of the depot maintenance support structure brings with it certain unique attributes. Private sector defense industries have traditionally concentrated the bulk of their efforts on new manufacture, developing efficient production processes and facilities to design, develop and assemble entire new systems or subsystems; depot maintenance and spare/replacement parts are provided by these original equipment manufacturers as well as by specialized maintenance firms. Government depots on the other hand, focus on maintaining a logistics capability for response to mobilization, national defense contingencies and emergency humanitarian requirements. While production and maintenance are complementary functions the two are not completely interchangeable. Depots could not pass the test as new weapon systems production facilities. Likewise, major manufacturers of new systems often use different types of

⁴ *Depot Maintenance Consolidation Study*, January 1993, General J. J. Went, USMC (Ret) et al.

⁵ OSD Director, Maintenance Policy, *Chronology of Significant Events Associated with Improving Joint Service Cooperation and Interservicing for DoD Depot Maintenance*, March, 1993.

facilities, equipment, and personnel skills than those required for the overhaul, repair, and modernization of existing systems by organic depots.

While DoD depot maintenance is somewhat comparable to operations in the commercial sector, the scope of operations and the size of weapon systems and equipment inventories make direct comparison difficult. The commercial sector does not, in too many instances, undertake the scope and breadth of military depot maintenance. A typical commercial airline maintains less than 200 aircraft of limited types while the largest commercial airline companies may have fleets of about 400 aircraft. DoD on the other hand provides depot maintenance to support some 20,000 aircraft of nearly 100 different types. Comparisons in other functional areas such as combat vehicles, ships, and communications/electronics yield similar results - the scale and scope of DoD depot maintenance are unique. However, as pointed out above, DoD maintenance depots while comparable in size to larger manufacturing operations, are not similarly structured. It is the synergism provided by a multitude of skills and a variety of maintenance processes that provide the necessary scope for efficient DoD depot maintenance operations, rather than the ability to mass produce large numbers of similar products as is most often found in the commercial sector.

Depot maintenance practices have changed as a result of modern equipment and weapon systems characteristics. These characteristics include improved maintainability, modular design and greater reliability. As a result, depot maintenance is no longer singularly characterized as "overhaul." A major fraction of depot maintenance now focuses on resolving specific operating deficiencies, through processes such as RCM (reliability-centered maintenance) and IROAN (inspect and repair only as necessary) processes. Depot maintenance operations also provide selective remanufacturing capabilities. Additionally, a significant and increasing portion of the depot maintenance mission is software support. By FY97, the software support workload is projected to grow nearly 60% over FY91 levels, to a total effort of some 2,500 direct labor years.

NEW WORLD SITUATION

PAST PRACTICES – SITUATIONALLY CORRECT

From the late 1940s until the dissolution of the Soviet Union, U.S. war planning scenarios called for large-scale response to a Soviet invasion of Western Europe and emphasized full industrial mobilization. Within this context, a principal justification for organic depot maintenance was the need for ready, organic surge capacity to meet the immediate needs of operational forces while buying time for the private sector production base to gear up for wartime demands. This large-scale, full-mobilization scenario drove policy, guiding the establishment of a substantial organic depot maintenance capacity and infrastructure, with attendant redundant capabilities.

By the end of the 1980s, the then-existing depot capabilities and capacity were the product of 40 years of incremental additions (typically to support new weapon systems as they came on board) and contractions. As noted later in this study, these depot maintenance capabilities were both needed and used during Desert Shield and

Desert Storm -- although at much reduced levels (capacity) compared to what would have been demanded by an Eastern Europe scenario.

DEPOT MAINTENANCE IN THE POST-COLD WAR ERA

Since easing of geopolitical tensions in the late 1980s, reductions in force structure and operations tempo (OPTEMPO) have lessened both peacetime and wartime demand for depot maintenance. Meanwhile, the change from preparation for large scale conflict to preparation for contingency scenarios has also revised the requirement for depot maintenance. Whereas the focus during the cold war was readiness and sustainability for a massive, protracted war, now it includes readiness for smaller conflicts and sustainability for a shorter duration and reconstitution. In combination, the optempo-driven and scenario-driven changes have significantly reduced depot maintenance requirements and, in the process, generated excess capacity.

Simultaneous with these changes, and precipitated by a 55% drop in procurement dollars since 1986, industry has shown increased interest in depot maintenance. With the rapidly diminishing number of new weapon system programs, depot maintenance and modification programs are now viewed by industry as potentially important business areas and, possibly, a means for supporting elements of the industrial base.

RECENT DEPOT MAINTENANCE INITIATIVES

FOCUS ON EFFICIENCY AND RESPONSE TO CHANGING NEEDS

Although there is uncertainty about the amount of the excess organic depot maintenance capacity, the existence of this excess organic capacity has long been undisputed. The issue has historically been dealt with from a Service perspective. It was arguably first systematically addressed in an integrated manner beginning in June 1990 when the Deputy Secretary of Defense (DepSecDef) directed the Services to develop near-term and long-range plans for increased efficiency. His direction included single-siting of workloads in Air Force and Naval aviation depots. The DepSecDef also established the Defense Depot Maintenance Council (DDMC) at that time to carry out these efforts. The DDMC, chaired by the Assistant Secretary of Defense for Production and Logistics, was made up of the Deputy Assistant Secretary of Defense (Logistics) and the Joint Logistics Commanders -- Service members who were the designated representatives of the Military Service secretaries.

The DDMC has served as a forum for coordinating reviews of DoD depot maintenance policies, programs, and activities and has been the mechanism for jointly planning and implementing management improvement initiatives. The DDMC directed 18 commodity-based studies and 4 generic studies (management information systems, cost comparability, performance measurement, and capacity/utilization measurement). By February of 1991, the various study groups had identified \$1.15B in savings during the period FY91-FY95. The savings were formally recognized in the *Joint Services Business Plan* of the same month. Later in 1991, under the signatures of the Service

Under Secretaries, a *Corporate Business Plan* presented a planned approach to increasing the savings to \$3.9B over the same time frame.

Two Defense Management Review Decisions (DMRD 908 and DMRD 908C of November 1990 and January 1991 respectively, both titled *Consolidating Depot Maintenance*) formalized and further increased total savings to \$6.4B over the FY91-FY97 period. As described in the *FY92-FY97 Corporate Business Plan* (CBP), these savings were to accrue from downsizing workforces and facilities, canceling facility projects, consolidating workloads, expanding interservicing, and increasing competition.

Serving as the oversight element for CBP implementation, the DDMC has been effective in integrating Service programs to achieve savings and in standardizing, to some degree, approaches to implementing efficiency initiatives. For programs such as increased competition for depot maintenance workloads between public depots and private sector contractors, the DDMC has been able to expand DoD savings opportunities through effective interface with Congress and other interested constituencies. Because of its nature as an advisory board and its current limited charter, the DDMC has not directed the broad-based systemic and programmatic changes which now appear necessary to achieve increased management efficiencies and program integration.

The Military Departments and Defense Agencies have made important progress toward downsizing their individual depot maintenance programs, reducing depot labor forces and budgets approximately 30% since 1987. Four major depots⁶ and two minor depots⁷ were closed prior to the 1993 Base Realignment And Closure (BRAC) cycle and BRAC 93 has identified an additional seven depots for closure. If, after BRAC 93 closures, there is still undesired excess capacity (and the extent of such excess capacity is, itself, is a point of discussion), the best opportunities for continued capacity adjustment appear to be cross-Service (i.e., by combining workload across Services and then closing unneeded facilities). This would appear to be a major challenge for the depot maintenance management structure that supports DoD depot maintenance in the future.

The previously cited *Report on the Roles, Missions and Functions of the Armed Forces of the United States* generated additional emphasis on the need to examine cross-Service depot management. This need stems primarily from the conclusions in the Joint Chiefs of Staff *Depot Maintenance Consolidation Study*.⁸ The purpose of that study was to "...help identify the best way to scale down the excess capacity and reduce costs without degrading current or future capability to meet our peacetime and wartime needs." The JCS study concluded that existing management structures within the Services, Agencies and OSD were unlikely to successfully address these issues and that there were three options which were serious alternatives to the way the DoD currently manages depot maintenance. The options were:

- Executive Service (i.e., single Service) management of depot maintenance by major weapon systems categories

⁶One under the FY88 BRAC Commission process, two under BRAC 91, and one under the CBP. See Table 1-1.

⁷The two minor depots affected were Pueblo Depot Activity (closed by the Army) and RAF Kemble (Air Force withdrew from site).

⁸Op Cit. *Depot Maintenance Consolidation Study*.

- Consolidation of all depot maintenance activities under a single Defense Maintenance Agency
- Consolidation of all depot maintenance activities under a Joint Depot Maintenance Command.⁹

The Study recommended establishing a Joint Depot Maintenance Command.

OTHER MANAGEMENT EFFORTS TO IMPROVE OPERATIONS

In addition to the corporate planning process operating under guidance of the DDMC and the *Depot Maintenance Consolidation Study*, there have been other recent management efforts focused on improving depot maintenance operations. As previously indicated, there have been a number of reviews over the past several decades focused on improving depot maintenance management by, for example, realigning workloads, implementing standard systems and reorganizing management structures. Additionally, the Department's central logistics infrastructure and Bottom Up reviews have included depot maintenance as one of the principal areas of attention.

Further, in the past few years the Defense Management Review process has generated many budget-related initiatives in addition to DMRD 908. For example, DMRDs 919 and 939 targeted Naval Shipyards and Computer-Aided Acquisition Logistics Support (CALs) respectively, to save \$1.6B in five years. DMRD 919 related efficiency improvements to budgetary savings, while DMRD 939 attributed savings to a reorganized CALS program.

DMRD 971 expanded the use of cost accounting principals as well as performance and activity based budgeting in the Defense Business Operating Fund (DBOF). Since depot maintenance facilities were industrially funded activities, they have operated for many years on the principals upon which DBOF is based. DMRD 904, *Stock Funding of Repairables*, required that all Services finance the depot level maintenance of depot level repairables through use of the stock fund as opposed to the use of appropriated dollars. Anticipated benefits to the supply system include fewer component carcass returns to depot, fewer customer demands, reduced throw away rates, and reduced inventory levels. Stock funding of repairables, however, is one factor that complicates the comparison of prior year depot maintenance budget and cost data with that subsequent to FY92.

⁹Neither this option nor the agency alternative was specifically examined in the limited time available to the JCS study--rather the study looked at DoD consolidation generically.

CURRENT POSTURE

MAJOR ORGANIC MAINTENANCE DEPOTS

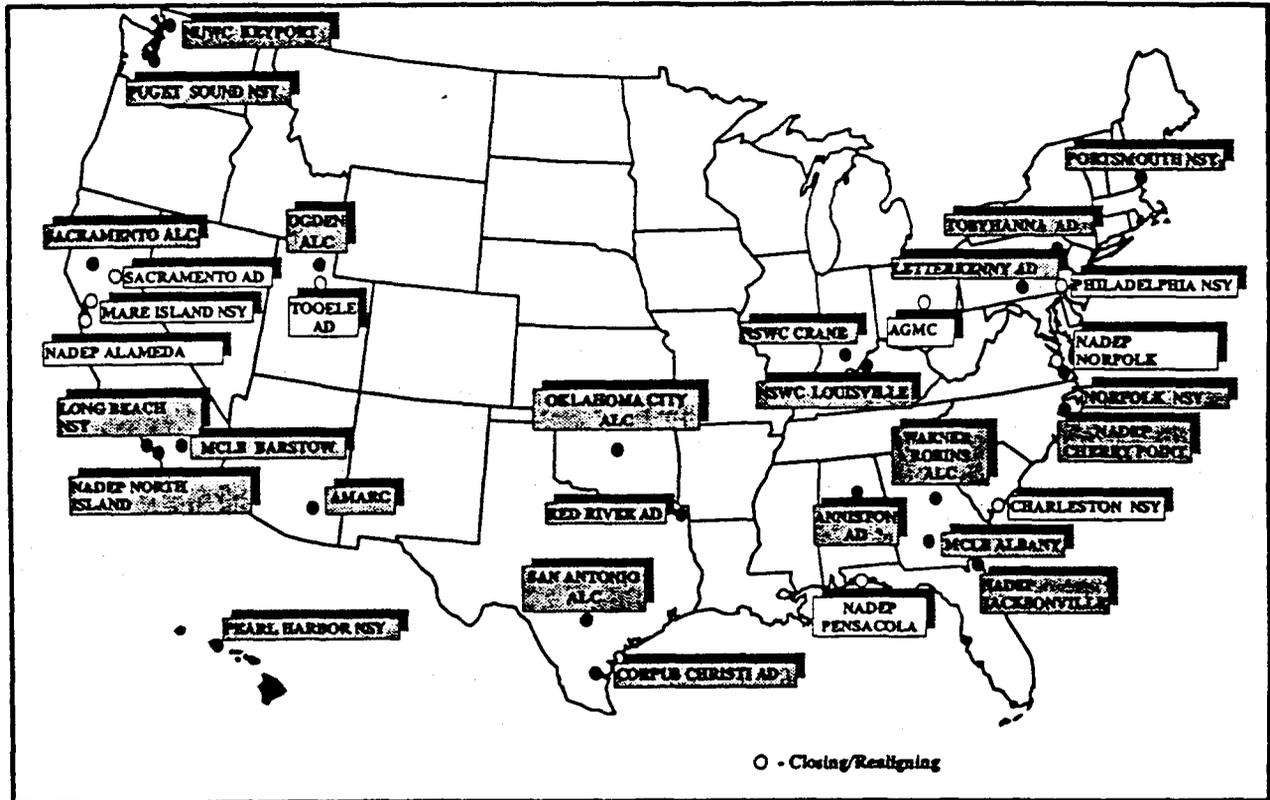


Figure 1-1. Major DoD Depot Maintenance Activities
(Employing More Than 400 Personnel)

There are currently 33 major maintenance depots under Service management. Figure 1-1 shows the geographic locations of each depot and indicates those that have been identified for realignment or closure. Two of the 33, Sacramento Army Depot and Philadelphia Naval Shipyard, are in the process of closing. Of the remaining 31 depot facilities, 7 are included in the President's final recommendation to Congress for closures and realignments as part of the BRAC 93 process. It should be noted that there are additional activities performing depot maintenance in the Services and in the Defense Logistics Agency. These activities are relatively small in terms of level of effort and often combine depot level maintenance with other maintenance and support activities.

Table 1-1 below indicates the impact, by Service, of actual/planned/recommended closings resulting from the BRAC Commissions of 1988, 1991 and 1993 as well as management actions taken under the CBP. The SecDef also recommended to the BRAC 93 Commission the closing of Letterkenny Army Depot, but the Commission did not concur with the recommendation. Additionally, the Air Force identified Sacramento ALC (SM-ALC) as a closure candidate for BRAC 93, but SecDef did not include SM-ALC in his final consolidated list of candidates.

**Table 1-1. Posture of Major DoD Maintenance Depot by Service
(Employing More than 400 Personnel)**

Depots	Pre-BRAC 88	BRAC 88 ¹⁰	Post-BRAC 88	BRAC 91 & CBP ¹¹	Post-BRAC 91 & CBP	BRAC 93 ¹²	Post-BRAC 93
Army Depots	9		8		6		5
USAF Air Logistics Centers (ALCs)	5		5		5		5
USAF Aerospace Guidance and Metrology Center (AGMC) & Aircraft Maintenance and Regeneration Center (AMARC)	2		2		2		1
Navy Shipyards (NSYs)	8		8		7		5
Naval Warfare Centers (NWCs)	3		3		3		3
Naval Aviation Depots (NADEPs)	6		6		6		3
Marine Corps Logistics Bases (MCLBs)	2		2		2		2
Total	35		34		31		24

DEPOT MAINTENANCE COSTS AND CAPACITY

For FY93, DoD planned about \$13B in expenditures for depot maintenance operations. Table 1-2 shows that about 68% of this expenditure will be for support in organic facilities and the balance in facilities operated by contractors. The budget table portrays data from the perspective of the Service responsible for depot maintenance of its own assigned equipment and that receives depot maintenance support from depot activities. The data is based on the FY93 President's Budget as developed by the Bush Administration. Marine Corps aviation is included in the Navy line. The estimate includes depot maintenance funds from the following sources: O&M, Procurement, RDT&E, and other DBOF activities (e.g., stock fund). Additions have been included for continuing force reconstitution (resulting from Desert Storm), full impact of the stock funding of depot level reparable by the Air Force and Army, and initial Air Force two level maintenance requirements.

The amount accomplished by contract varies by Service, from a high of about 40% contractor for the Army to a low of about 11% for the Marine Corps. Additionally, as previously mentioned, a substantial portion of the organic share goes to the private sector to purchase spare parts and services to support organic depot maintenance operations.

¹⁰BRAC 88 closed Lexington-Bluegrass Army Depot.

¹¹BRAC 91 and CBP management actions closed/realigned Sacramento Army Depot (BRAC), Mainz Army Depot (CBP) and Philadelphia NSY (BRAC).

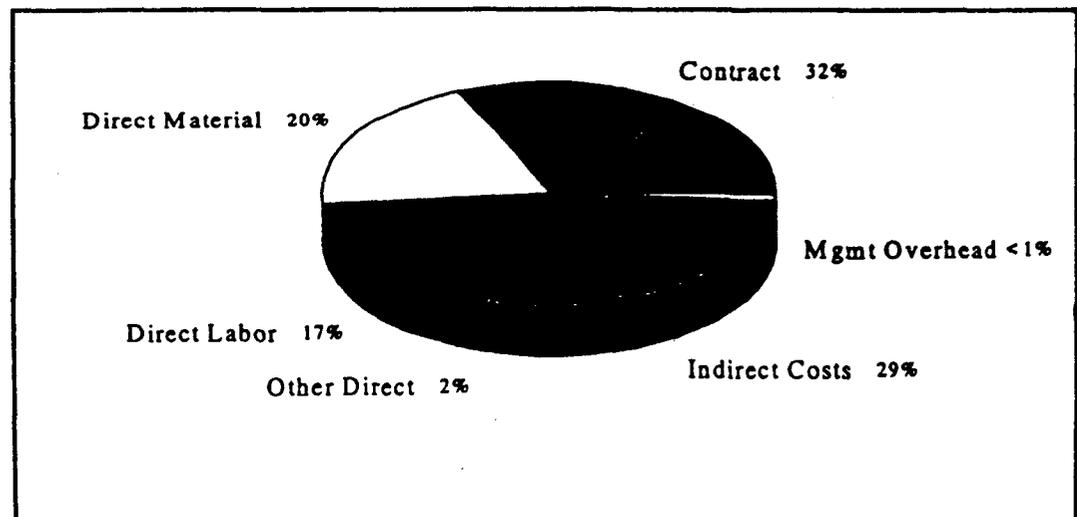
¹²BRAC 93 closed/realigned Tooele Army Depot, AGMC, Charleston and Mare Island NSYs, and NADEPs Norfolk, Alameda and Pensacola; USAF recommended closing SM-ALC but DoD did not include on final list of candidates forwarded to BRAC Commission; additionally, DoD did recommend closing Letterkenny Army Depot but the BRAC Commission recommended retention.

Table 1-2. FY93 Estimated Depot Maintenance Budgets

		FY 93 (\$ Millions)	Contract/Organic Shares
	Organic	1111.6	60.1%
ARMY	Contract	738.2	39.9%
	TOTAL	1849.8	
	Organic	4788.4	67.5%
NAVY	Contract	2303.5	32.5%
	TOTAL	7091.9	
	Organic	2791.3	71.1%
AIR FORCE	Contract	1134.1	28.9%
	TOTAL	3925.4	
	Organic	56.2	89.2%
MARINES	Contract	6.8	10.8%
	TOTAL	63	
	Organic	8747.5	67.7%
TOTAL	Contract	4182.6	32.3%
	TOTAL	12930.1	

SOURCE: FY92-FY97 CBP

A projected distribution of these costs is illustrated in Figure 1-2.¹³ About 50% (contract and direct material) of the total, or \$6.8B, may potentially go to the private sector as direct contracts for depot maintenance or in the form of purchased materials or support services. The Service depots use 19% (\$2.5B) of the total for direct costs (not including material) and about 29% (\$3.7B) for indirect costs (operations overhead and general and administrative expenses). Management overhead above the depot level is estimated at less than 1% of total depot maintenance costs.

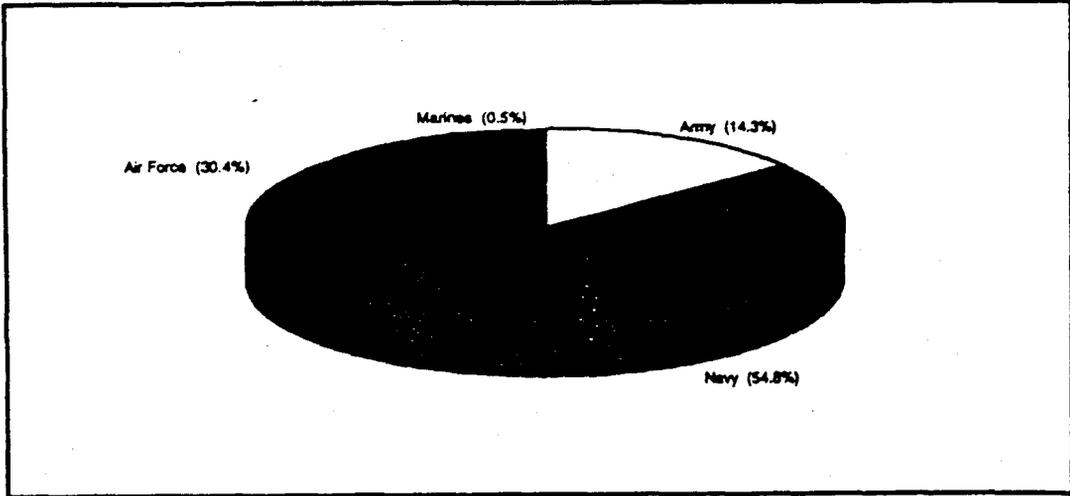


SOURCE: FY92-FY97 CBP and historical DoD 7220.9-M data

Figure 1-2. Projected Distribution of Total FY93 Depot Maintenance Costs

¹³Based on past DoD 7220.9-M depot cost system reporting for organic production segments and data from the *Depot Maintenance Consolidation Study*, Op. Cit.

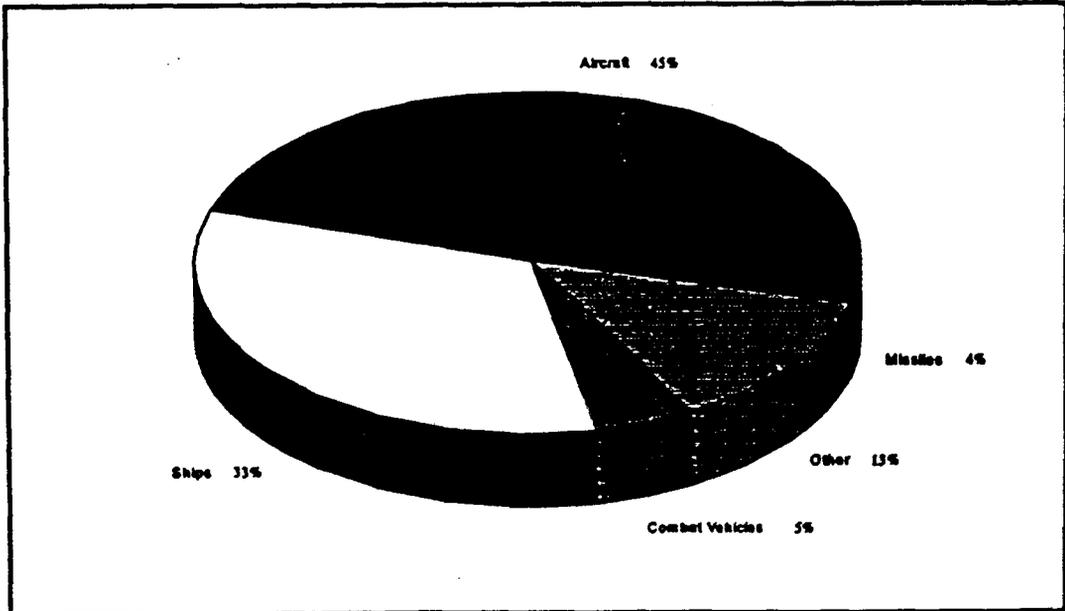
The Navy is the largest user of depot maintenance dollars, followed by the Air Force, Army and Marine Corps. Navy depot maintenance costs include both ships and aircraft. Figure 1-3 portrays the percent of the total budget expended by each Service.



SOURCE: FY92-FY97 CIP

Figure 1-3. Percent of FY93 Budget By Service

Together, aircraft (fixed and rotary wing) and ship maintenance account for nearly 80% of the total budget. Figure 1-4 shows the distribution of the FY93 budget across the various commodity groups.



SOURCE: FY92-FY97 CIP

Figure 1-4. Percent of FY93 Budget by Commodity

The current capacity of the major organic maintenance depots, less the organic shipyards, is approximately 93M direct labor hours.¹⁴ Closures resulting from BRAC 91 and 93 will reduce this capacity to about 76M direct labor hours. Capacity of shipyards is expressed in direct labor days of throughput, as limited by the complexity of work on nuclear and other large deck ships (Naval shipyards need specific drydock types facilitated to perform organic work.) and no attempt was made to characterize shipyard capacity in the same way as non-ship work. BRAC 91 and 93 actions reduce the number of Naval Shipyards from 8 to 5.

Organic depot maintenance workload for all depots (including shipyards) has gone from about 201M direct labor hours in FY87 to an anticipated level of about 139M direct labor hours in FY93. The FY93 President's Budget, prepared by the Bush Administration, reduces projected workload for FY97 to about 126M direct labor hours. Significantly greater reductions, beyond these projections, are expected based on additional force structure reductions being contemplated by the current administration.

POTENTIAL ISSUES

In the recent period of depot maintenance readjustment, a number of perceived issues have been voiced by the public and private sectors that, if correct as perceived, have potentially serious implications. The most important perceived issues are outlined below:

- Has the current depot management structure in the Services resulted in substantial competition, interservicing, reduction of capacity, or reduction in unnecessary duplication of effort?
- What degree of additional workload and/or management centralization is needed to enhance the effectiveness and efficiency of DoD depot maintenance? What form should it take?
- Is depot maintenance responsive to DoD realities, e.g., force structure and budget reductions?
- Is the current depot maintenance management structure unable (or unwilling) to downsize and reduce capacity. Does DoD still, after BRAC 93, have significantly more depot capacity than the Department will need in the future. Does unnecessary duplication exist throughout the individual Service depots -- especially when viewed across Service boundaries?
- Is it likely that the Services will not be able to meet the CBP \$6.4B FY91-FY97 savings target without taking actions that will severely affect readiness and the ability to go to war?

¹⁴Direct labor hours are defined as labor hours specifically identified with a particular final cost objective, e.g., overhaul of a component or end item.

- Is organic depot capacity perhaps not needed? Should all requirements (or at least more than at present) be satisfied by commercial sources? Is CORE poorly defined? Are existing definitions invalid? Are current CORE capabilities unnecessarily redundant and capacity too large?
- Is the stability of the defense industrial base being increasingly threatened because Government-run, Service (organic) maintenance depots are taking workload out of industry?

OUTLINE OF THIS STUDY

In order to satisfy the directions of the Secretary of Defense for this study, it was first necessary to redefine the issues above since they raise essential questions. To accomplish this redefinition of the issues, this study undertook a series of tasks as outlined below.

In Chapter 2, titled "Baseline Assessment," a historical framework for DoD depot maintenance is established and several necessary initial study tasks are addressed:

- To determine if depots are downsizing at a rate that makes sense in terms of overall DoD changes, an analysis of the current posture is developed that compares depot workload, work force, capacity, and capital investment trends to DoD force structure and key activity indicator changes.
- The important depot maintenance lessons from Desert Shield/Desert Storm are summarized.
- The significance of legislative oversight of DoD depot maintenance is reviewed.
- The ongoing redefinition of future contingency scenarios is outlined.

In Chapter 3 an exploration of depot maintenance CORE describes the basis in law for CORE, the historical definition, and the various methods for computing CORE used by the Services. With this background, the need for organic depots and for a joint (i.e., coordinated) CORE concept are established, and a new, multi-Service framework, including a common sizing algorithm for Service application is proposed.

The discussion in Chapter 4 describes the relationship of depot maintenance to the national industrial base, and then, within the context of this relationship, addresses the issue of industrial support capabilities, capacity and costs. The discussion is expanded in perspective to consider broader, Defense industrial base concerns:

- At the center of most recent attempts to increase depot efficiency have been various concepts for consolidation, interservicing and centralization. There are important (and in some cases contrary) lessons from industry regarding similar efforts; some recent trends in commercial practice are highlighted.

- Another major focus of depot maintenance operations downsizing has been the cost of capacity; a discussion of capacity and marginal costs is provided along with some considerations and implications for future downsizing.
- Since the subject of competition is of considerable importance, the role of competition (private-private, public-private, and public-public)¹⁵ in creating a more efficient depot structure is described and the potential for privatization of Government depots and depot maintenance is also explored.

The material in Chapters 2, 3 and 4 provides a basis for refining the issues described above. As shall be shown in Chapter 5, each of the perceived issues contained some degree of validity but was also significantly off the mark. Chapter 5 opens by restating the issues based on the results of the analysis.

A common thread throughout the refined issues is need for an alternative management structure to provide cross-service coordination of capacity, capabilities and related issues. In Chapter 5 alternatives are addressed. Criteria for evaluating alternatives is established. Four management alternatives generated by this study are outlined, the evaluation process is described, and the results of evaluations are provided and analyzed. A sensitivity analysis is included addressing specific criteria, i.e., military responsiveness and implementation feasibility.

Chapter 6 presents the conclusions and recommendations of the study.

¹⁵By private is meant privately owned commercial firms and by public, government operated facilities. Hence, public-private competition is between one or more privately-held firms and one or more publicly owned facilities.

CHAPTER 2

BASELINE ASSESSMENT

INTRODUCTION

Much has been said, written and done about reshaping the United States armed forces to fit future needs defined by the current administration's civilian leadership while yielding the "Peace Dividend" expected from victory in the Cold War. Depot maintenance has not been spared from changing in this reshaping process. This chapter will set the stage for addressing those perceived issues, described in Chapter 1, which still confront depot maintenance planners today.

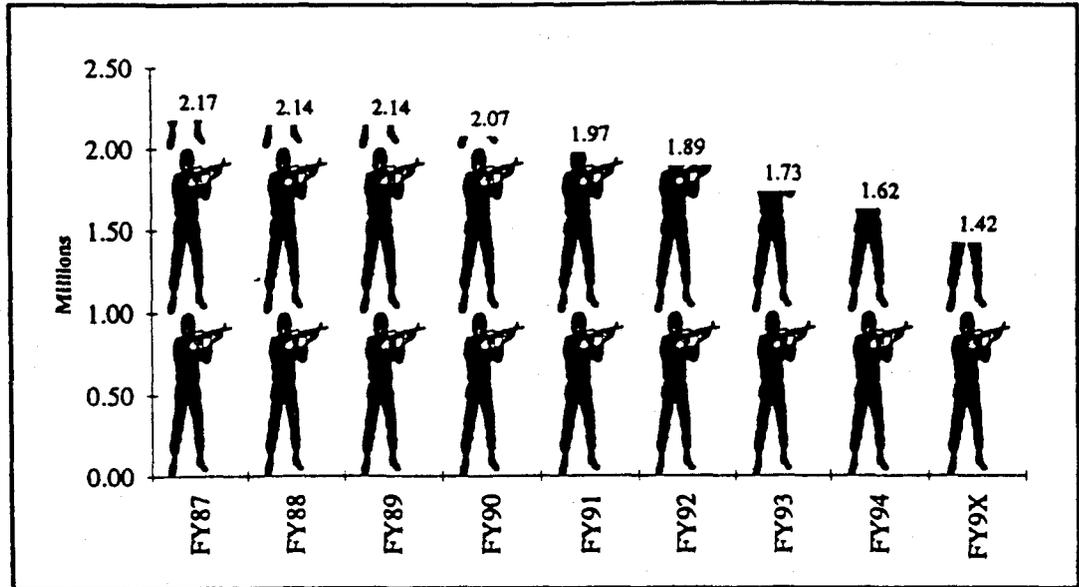
The first section of this chapter will discuss recent trends in the size and activity level of the armed forces, followed by a review of where the maintenance depots have been going in terms of their output and resource allocations. Despite downsizing, and the legal limits imposed on the depots, they will be shown to have maintained their traditional place alongside defense contractors in a prime supporting role to the forces who achieved overwhelming success during Operation Desert Storm.

This chapter will conclude with a brief discussion of the role of the depots in support of armed forces which no longer face the prospect of a global conflict. The U.S. Military is instead preparing for major regional conflicts and for peacekeeping/humanitarian operations in all corners of the globe. The bottom line of any response to the perceived issues must always be the readiness of the depots to provide assured support to these combat operations.

HISTORICAL AND PROSPECTIVE TRENDS

FORCE STRUCTURE

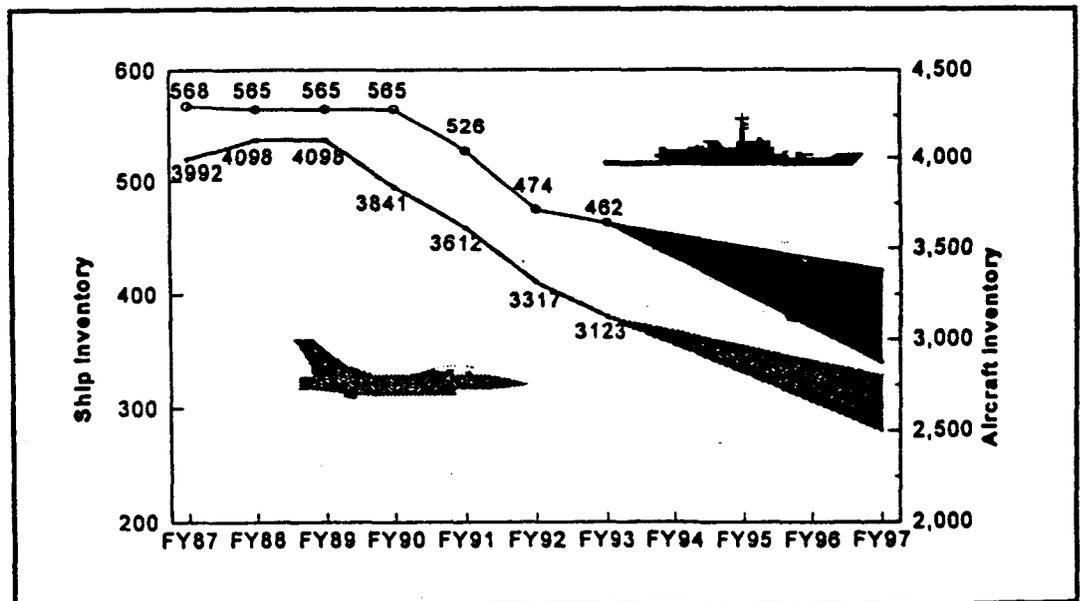
Since the late 1980's, the United States has markedly reduced its military force structure. As illustrated on Figure 2-1 below, the total number of active duty personnel has declined from 2.17M in FY87 to a projected 1.62M in FY94. This is nearly a 25% reduction in military personnel. Based on recent statements by senior members of the current administration, it is anticipated that force structure reductions will continue to about 200,000 personnel below the total number of active duty military personnel on duty in FY94, as shown in Figure 2-1.



SOURCE: Defense Almanac and OSD (PA&B)

Figure 2-1. Active Duty Military by Year

The drop in the number of military personnel on active duty has been the result of an overall force structure reduction that has included the retirement of significant numbers of major weapon systems and equipment. With less combat equipment to operate and maintain, there is less of a requirement for manpower in the Services. Typical of the trend in hardware reductions, Figure 2-2 shows that the numbers of tactical aircraft and ships operated by the active and reserve forces have declined by 22% and 19% respectively through FY93. Notional force structure projections call for additional reductions within the ranges shown for FY94 to FY97 in Figure 2-2.



SOURCE: Defense Almanac and OSD (PA&B)

Figure 2-2. Tactical Aircraft and Ships by Year

AGING OF THE FORCE STRUCTURE

The average age of weapons systems will be increasing continuously as projected Defense budgets provide few new system procurements. Table 2-1 below shows the FY93 average age of some current weapon systems. These are average ages and there are platforms in use within each class which are significantly older. It can be seen that many front-line systems for which no replacement is currently funded already have average ages well into the range where major overhauls become more frequent, costly and time-consuming. Each additional calendar year will increase average age by a year for virtually every system as few new procurements of major systems are ongoing, and, if they are, are occurring at a slow rate which does little to improve the average.

The effect of weapons systems aging on depot maintenance should be increasing requirements for both maintenance and modernization of current hardware to support the continued viability of U.S. forces. This may not be the case for all depots however, as balancing the increasing weapons systems age is a reduction in total equipment inventory dominated by the retirement of older, less capable systems. As the extent of this balance is not quantifiable, the only certainty is that DoD depot capacity will have to be properly sized with the correct capabilities for long-term peacetime maintenance and contingency support of a smaller equipment inventory consisting primarily of our most modern systems. It is the unpredictable nature of future reliability and modernization requirements that precludes a more precise definition of future depot maintenance needs, and justifies conservative planning.

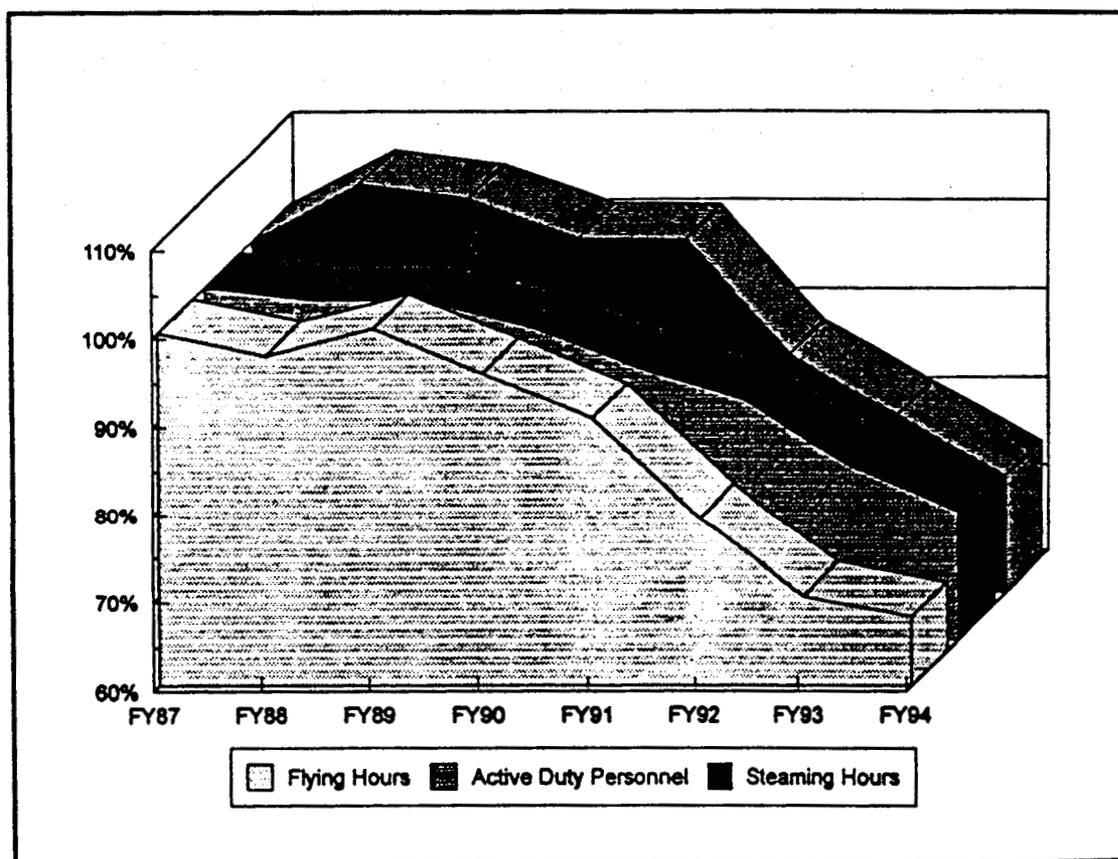
Table 2-1. Average Age of Weapon Systems

Item	Service	Average Age Yrs.
B-52 Bomber	Air Force	31.4
B-1 Bomber	Air Force	5.3
F-16 Fighter	Air Force	3.7
F-16 Fighter	Air Force Reserve	10
F-16 Fighter	Air National Guard	8.8
F-15 Fighter	Air Force	8.3
F-15 Fighter	Air National Guard	14.7
System 1	Army	
System 2	Army	
System 3	Army	
Conventional Carrier	Navy	31
Nuclear Carrier	Navy	13
Belknap Class Cruiser	Navy	27
Ticonderoga Class Cruiser	Navy	4
F-14 Fighter	Navy	12
F/A-18 Fighter	Navy/Marine	5.7
S-3 Multi-mission	Navy	16.9
Iwo Jima Class LPH	Navy/Marine	29
AAV 7A1 Assault Amphib. Vehicle	Marine	19
CH-46 Transport Helicopter	Marine	25

SOURCE: Service reports.

KEY ACTIVITY INDICATORS

Besides the size of the inventory, it is the usage of military hardware which generates maintenance requirements for the depot maintenance program. These requirements, viewed in context of the depot maintenance policy structure (e.g., CORE needs and legislative mandates), ultimately determine the need for facilities and personnel. Aircraft, ships, and their components historically comprise over 80% of the annual depot maintenance workload. For this equipment, usage is measured in annual flying hours and steaming hours. As discussed in the Joint Staff *Depot Maintenance Consolidation Study*, the most recent year in which U.S. armed forces were operating at their Cold War end strength was FY87. There has been a steady decline in both inventories and usage since then. Figure 2-3 shows that flying hours have dropped from 5.4M in FY87 to a projected 3.8M in FY94, and steaming hours from 1.2M to .9M during the same period. These reductions of 32% and 27% respectively since FY87 are even greater than the reductions in personnel and hardware discussed earlier.

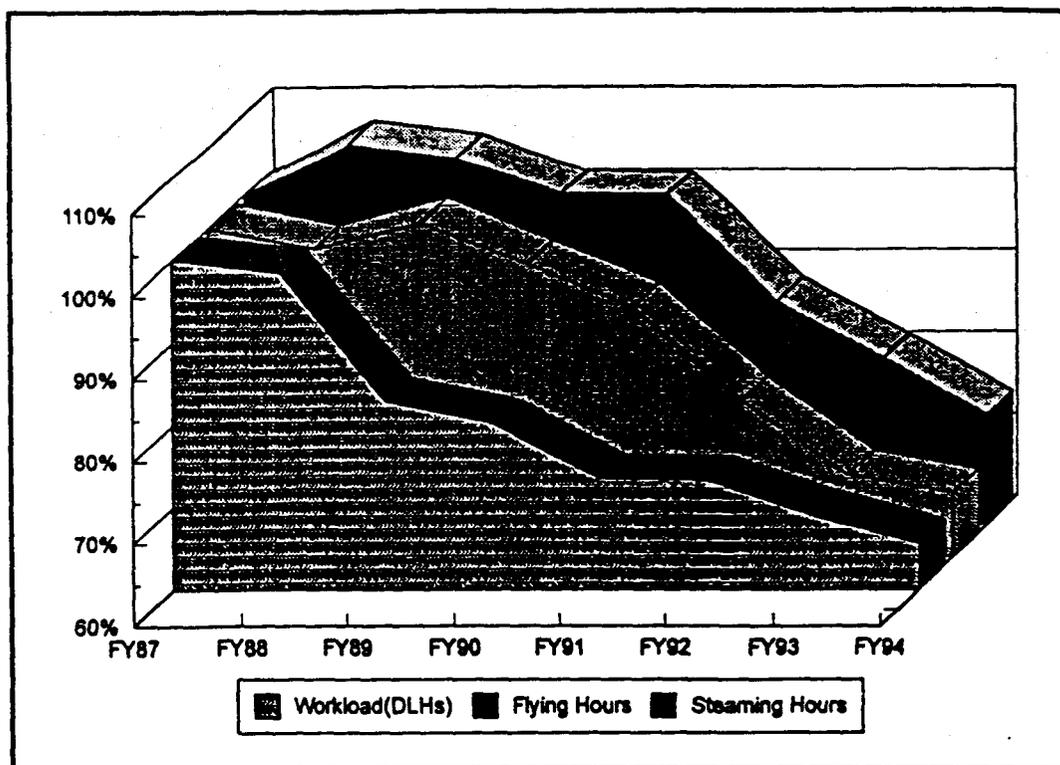


SOURCE: DoD Almanac

Figure 2-3. Flying Hours, Steaming Hours, and Active Duty Personnel As Percentages of FY87 Levels

DEPOT MAINTENANCE ACTIVITY AND RESOURCES DECLINING

The current universal measure of organic depot workload is direct labor hours (DLHs). As expected, total DLHs declined over the period such that the total reduction is consistent with the decline in flying hours and steaming hours (Figure 2-4). DLHs declined from 201.5M in FY87 to a projected 132.1M in FY94, a decrease of over 35%. A principal component of this change, especially for the FY87-FY88 data, is NAVSEA workload. Concurrent with the workload reduction, the total number of depot personnel declined from 156,832 in FY87 to a current level around 122,000 with a projected level of 109,062 in FY94, a reduction of over 30%. At the same time, the total budget for depot maintenance in constant FY93 dollars dropped from \$16B to \$10.9B¹, a nearly 32% reduction. With the exception of the FY88 to FY89 drop in workload, all of the measures have been declining more-or-less continuously and at essentially the same rate, providing an incentive for depot operators to consolidate the workloads of underutilized depots and close these facilities.



SOURCE: DoD Account, POS-87, POS-88, POS-89, POS-90, POS-91 and FY92-FY97 Corporate Budget Plan

Figure 2-4. Flying Hours, Steaming Hours and Organic Workload
As Percentages of FY87 Levels

Even when indicators point to the need to reduce the number of facilities, it is a more difficult decision to close an entire depot than to absorb resource reductions by widely distributing them among many facilities and budgets. Nonetheless, the difficult decisions have been made. In response to the trends illustrated in Figures 2-1 through 2-4,

¹ FY94 budget adjusted for effect of significant changes in business practices since FY87, such as Stock Funding of Depot-Level Reparables and Air Force two-level maintenance.

DoD recommended closure of specific depots to every BRAC Commission and also took unilateral action under the DDMC CBP to downsize depot maintenance operations.

In FY88, a decision was made to close the Army's Lexington-Bluegrass depot facility. Through management initiatives in FY91, DoD closed an overseas maintenance depot (Mainz Army Depot) and also closed Support Group Europe at RAF Kemble which provided USAF depot maintenance. As a result of BRAC 91, two CONUS depots were selected and are in the process of closing.² For BRAC 93, DoD recommended a list of eight more depots for closure and the Commission approved seven.³

Figure 2-5 reflects the decline in the number of DoD maintenance depots with greater than 400 employees as a result of these CBP and BRAC actions. Once all of closures are complete, the number of maintenance depots will have been reduced by 31%. The percentage of depots closed is not an obvious metric for the overall reduction in depot capacity because of the great variance in the size of depots. Other potential metrics were checked, including the change in the size of the depot workforce and the standard capacity index based on the number of workstations in use. This standard capacity index was not judged entirely accurate in itself since it has been subjected to multiple interpretations and may not be reliable without corroborative evidence. Capacity is further discussed in following paragraphs. After examining these other metrics however, it was determined that they all exhibited the same trend, and the simple percentage of depots closed is a valid indicator for the trend and magnitude of recent reductions in depot capacity.

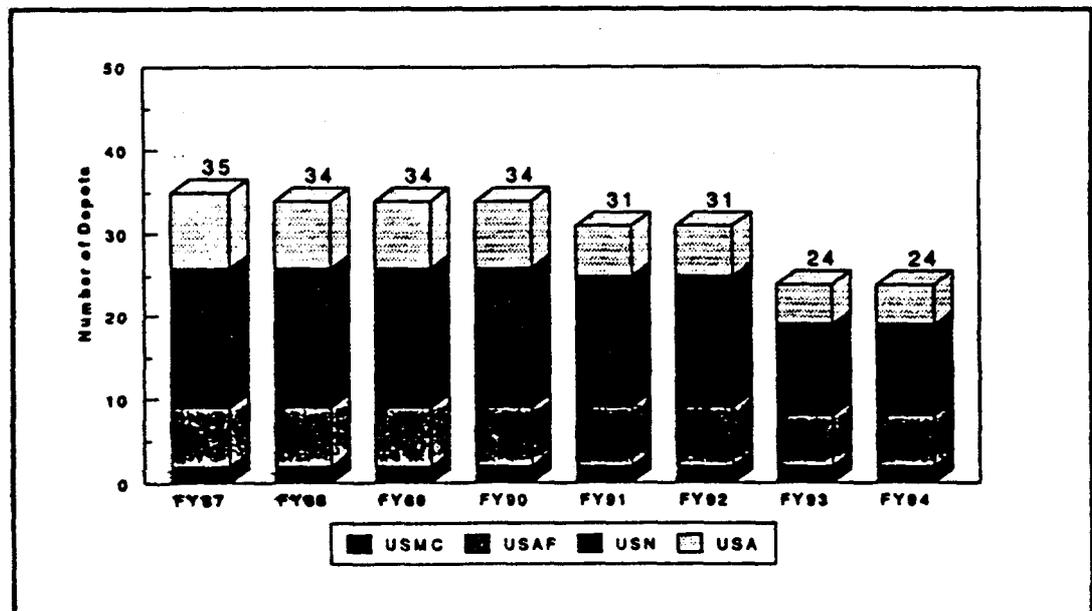


Figure 2-5. Impact of BRAC and CBP Action on Maintenance Depots (Depots with >400 Employees)

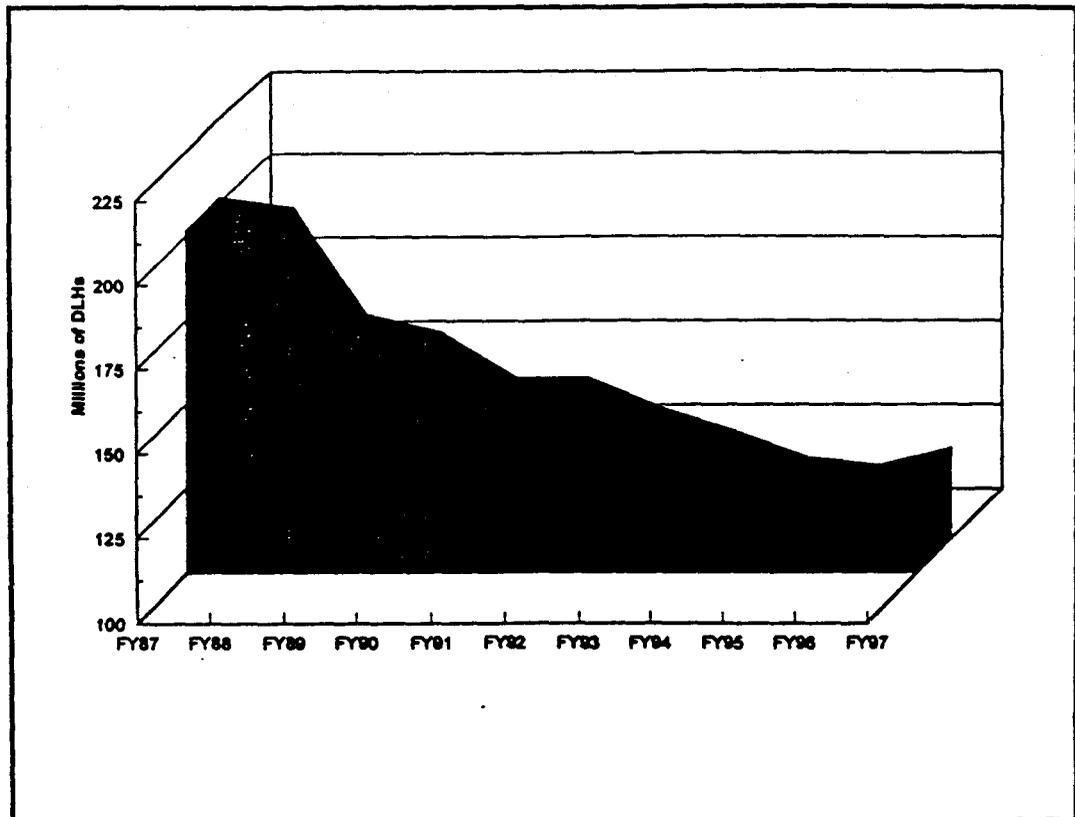
² Sacramento Army Depot and Philadelphia NSY.

³Tooele Army Depot, NADEP Alameda, NADEP Norfolk, NADEP Pensacola, AGMC, Mare Island NSY, and Charleston NSY.

ORGANIC WORKLOAD & CAPACITY - SIGNIFICANT REDUCTIONS

Workload

The current trend of organic depot maintenance workload depicted in Figure 2-6 reflects a significant decrease - about 35% - from peak workload. As stated earlier, the significant drop in workload from FY88 to FY89 was primarily the result of NAVSEA workload changes. Since out year projections were based on the FY93 President's Budget and planning data as developed by the Bush Administration, further decreases beyond those projected in Figure 2-6 are expected due to anticipated additional force structure reductions. Other factors that may lower organic workload levels include (1) increased workload going to the private sector as the result of increased public-private competition (2) more workload being offered to the private sector based on a more restrictive CORE capacity and capability identification process, and (3) the changing nature of the weapon systems inventory as discussed above.



SOURCE: Source: FY87-88 from POS-89; FY89 from POS-90; FY91 from POS-91; and FY92-97 from FY92-97 CRP

Figure 2-6. Organic Depot Maintenance Workload Projections- FY87-FY97

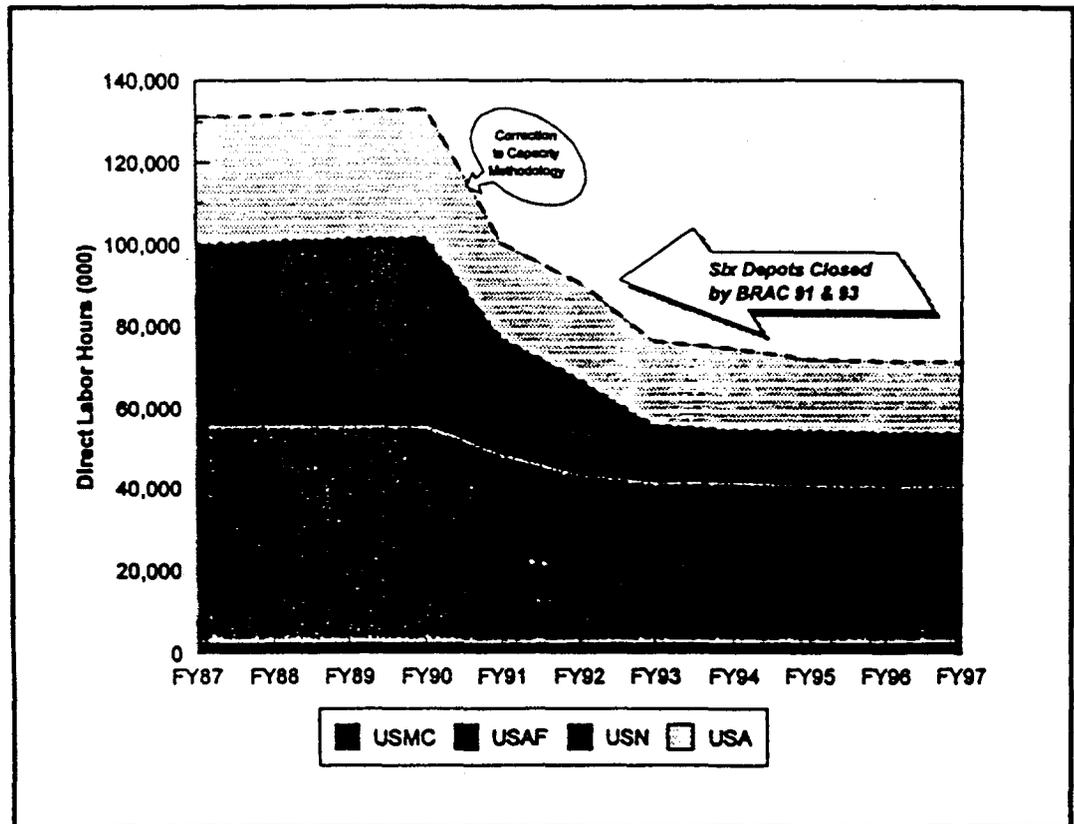
Capacity

Depot maintenance capacity has been one of the most controversial and contested subjects over the past 20 years. The issues have included how to measure capacity, how

much capacity was excess, and how it should be managed. In spite of these issues, some progress has been made in reducing capacity. Not counting shipyards, for which a comparable capacity index was not available over the time period studied, the Services will divest over 18 million direct labor hours (DLHs) of capacity as a result of closing seven depots through the BRAC process for 1988, 1991 and 1993. It should be noted that three shipyards are also closing.

Figure 2-7 depicts capacity data for FY87 through 1997. The chart is limited to depots of greater than 400 employees and excludes shipyards. Capacity for depots selected by the BRAC process was removed from the data in the year of the decision. The data also includes the results of Service initiatives to reduce capacity under the CBP.

It should be noted that prior to FY91 there was not adequate discipline in the process of calculation and reporting capacity, and no standard availability factor or annual productive hours rate. Based on a major capacity study conducted by the Services in late 1990, significant improvements were made in standardizing and calculating reported capacity. These efforts resulted in major changes in the FY91 and FY92 data. The net result is that data for FY92 and later is more reliable than previously reported data. It is recommended that any future analyses of capacity be based on post-FY91 data.



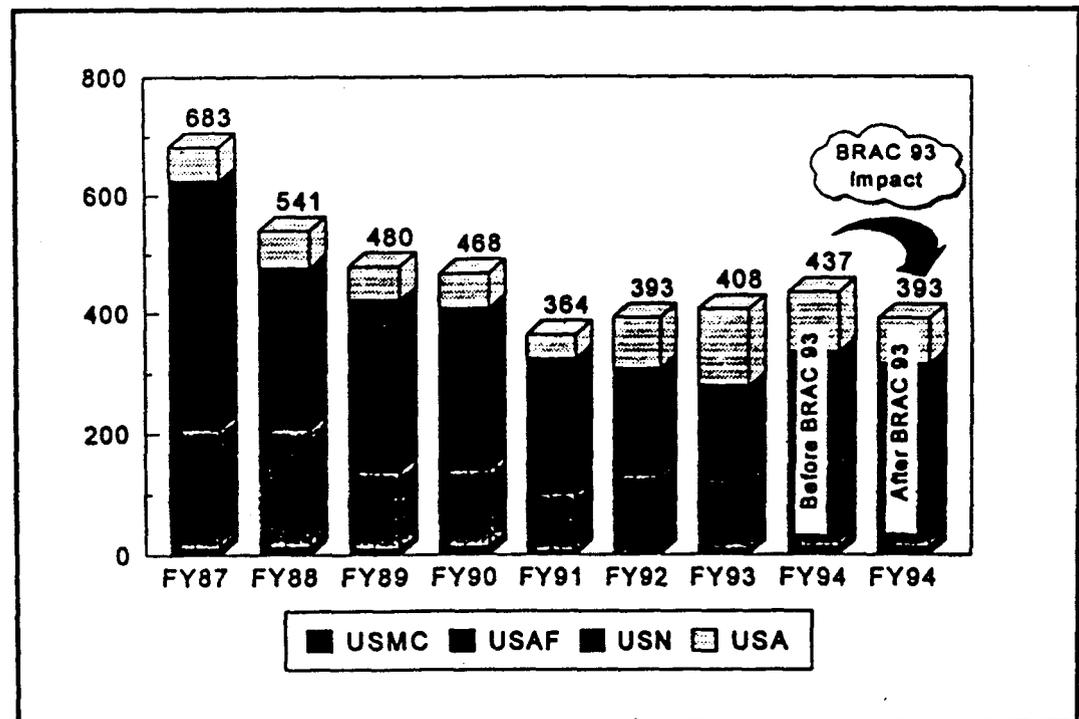
SOURCE: Sources: FY87-90 - POS 89 data base; FY91-97, CBP data base; BRAC excluded data: Lexington-Birmingham Army Depot(88-97), Sacramento Army Depot(91-97), Tonawanda Army Depot(93-97), NADEP Alameda (93-97), NADEP Pensacola (93-97), NADEP Norfolk (93-97), AQMAC (95-97)

Figure 2-7. Depot Maintenance Capacity FY87-97 (Excluding Naval Shipyards)

CAPITAL INVESTMENT

Figure 2-8 plots Service capital investments since FY87. Capital investments consist of expenditures for equipment or military construction (MILCON). The amounts depicted for capital investment include major and minor MILCON (including new mission MILCON), production and support equipment, and automatic data processing equipment. Excluded are equipment expenditures for new mission requirements which are funded through weapons system procurement accounts. FY94 capital investment figures are presented for both pre- and post-BRAC 93 approved depot closures to highlight the impact of the closures. The after BRAC 93 adjustment of \$44M represents approximately 10% of the total capital investment planned for FY94 before BRAC 93.

While capital investments have consumed less than 6% of total organic depot maintenance costs, and overall capital investments are down about 40% from the FY87 level, they have steadily increased since reaching a low of \$364M in FY91. A significant portion of recent capital investment expenditures are to comply with environmental requirements levied by external authorities (e.g., state governments) and for direct replacement of aging equipment. Environmental standards compliance is the single most significant category of capital investment, in some instances 50% of annual capital investment, for specific Services. DoD is taking specific action to manage and control FY94 capital investment expenditure. However, controlling capital investment in the face of continuing workload reductions and consolidations, should be a primary focus of an integrated depot maintenance management structure.



SOURCE: Military Department Inputs to DepSecDef Short Term Tasking on Depot Maintenance Issues

Figure 2-8. Capital Investment Since FY87 (FY93 \$Millions)

CONTRACT SUPPORT

In recent years, DoD has contracted for about 35% (measured in dollars expended) of its depot maintenance. The percent of each Service's depot maintenance budget identified for contract depot maintenance since FY89, and estimated for FY93, is shown in Table 2-2 below. A significant portion of the workload going to the private sector is awarded sole source (no competition conducted). For example, the Air Force awards about 24% of its contracts sole source while about 60% of Army contracts for depot maintenance are awarded sole source.

Table 2-2. Contract Depot Maintenance Workload Share by Service

FISCAL YEAR	USA	NAVY	USAF	USMC
FY89	35%	30%	41%	5%
FY90	32%	31%	41%	4%
FY91	42%	35%	33%	3%
FY92	39%	36%	30%	2%
FY93	40%	33%	29%	11%

SOURCE: FOS and FY2-92 CBP Data

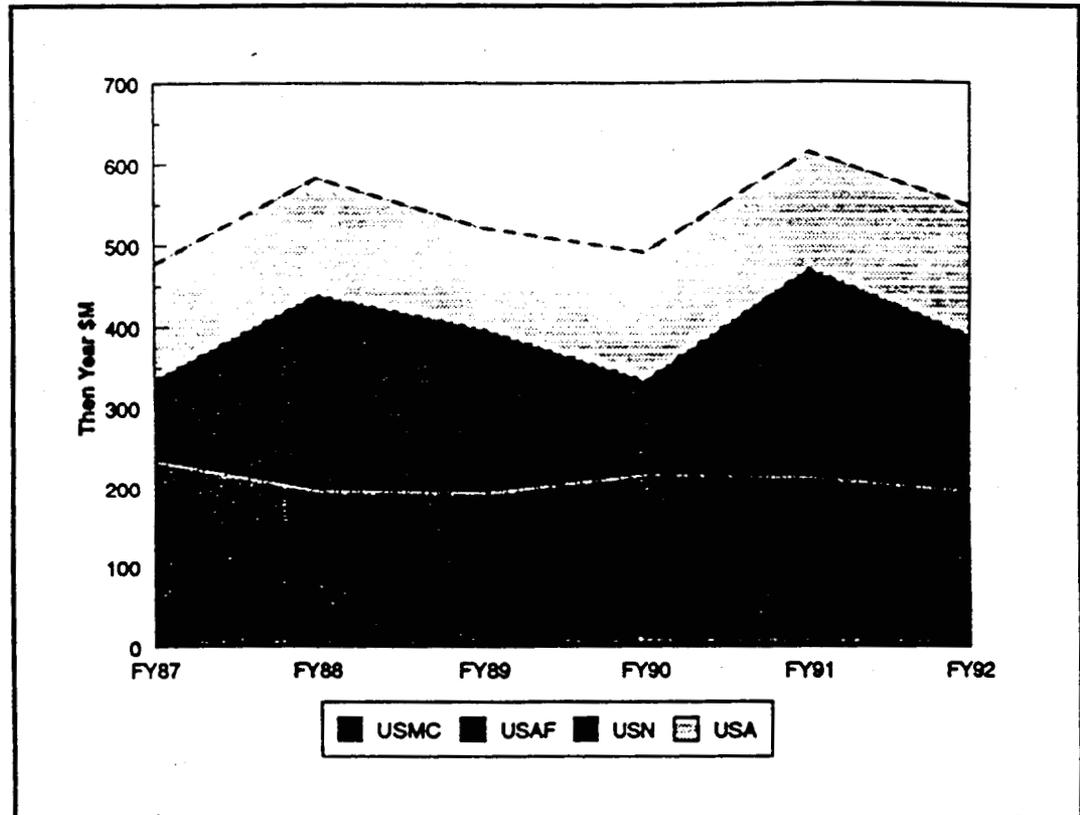
As can be seen, all Services, with the exception of the Marine Corps, contract for about the same level of support. Although there is variability by Service, the overall DoD percentage of depot maintenance being done by contract has remained within two or three percentage points of 35% since the mid-1980s. In other words, while there have been reductions in total depot maintenance expenditures, the proportion of the DoD depot maintenance budget spent outside organic facilities has held constant.

INTERSERVICE WORKLOADS

The level of interservicing, i.e., depot maintenance work done for one Service by another, has remained a relatively small portion of the overall depot maintenance budget, about 4% of total FY91 and FY92 total costs. DoD policy emphasizes aggressive use of interservice maintenance support whenever it will result in increased economy for the Government and when consistent with operational needs. Interservice results in overall DoD depot maintenance costs through greater economies of scale, lower recurring costs and less capital investment.

Some equipment is considered not-susceptible to interservicing due to unique facility requirements such as drydocks for ships, large hangars for strategic bomber and transport aircraft, and nuclear missile handling facilities. The non-susceptible workload was about 35% of the total DoD depot workload in FY91, the most recent year for which it has been determined. With the non-susceptible workload factored out, the percentage of interservicing increases to about 7.5% of the susceptible workload. The dollar amount spent on interserviced work for FY87 through FY92 is depicted in Figure 2-9. There has been a moderate trend upward in total dollars expended for interserviced workload over this period. The relatively low level of interservicing has consistently been targeted by

DoD management efforts, with limited success as evidenced by the data. Interservicing, or cross-Service depot maintenance support, must be an essential area of focus in evaluating changes to the DoD depot maintenance management structures.



SOURCE: DoD 7220.9-M DATA SUPPLEMENTED WITH CONTRACTOR FIELD TEAM DATA FROM SERVICES

**Figure 2-9. Total Depot Maintenance Interservicing by Year
(FY93 \$Millions)**

LEGISLATIVE BACKGROUND

A DoD depot maintenance baseline assessment is incomplete without an understanding of the applicable legislation that shapes depot maintenance operations. There are many substantive imperatives in public law that affect depot maintenance. The Legislative basis for depot maintenance is found in Title 10 of the United States Code. Additionally, each year legislative guidance is contained in annual appropriation and authorization acts. The guidance can be characterized in the following broad areas:

- CORE Logistics Functions
- Limits on where and how depot-level maintenance is performed
- Workload transfers-between depot and between public and private sector sources
- Competition
- Workforce management

Appendix B is a comprehensive summary of the legislation. Additionally, this appendix provides applicable results from DoD's review of the Acquisition Law Advisory Panel report. In other chapters of this report, further detail on legislation is provided where germane to the discussion.

ROLE OF MAINTENANCE DEPOTS IN OPERATIONS DESERT SHIELD/DESERT STORM

How well the depots can bring their tremendous capabilities and capacity to bear became clear when Saddam Hussein's invasion of Kuwait on August 2, 1990 provided this country's first major military challenge following the end of the cold war -- and offered a glimpse at the type of security threat this nation can expect in the future. The events which unfolded during the seven months following the Iraqi invasion are now well known and are being studied by both friends and potential adversaries. Today, as the process of reshaping America's military forces continues, planning must ensure that a defense industrial base capable of supporting future national security challenges is retained.⁴

PREPARATION

Immediately following the Iraqi invasion, the pace of activity in the defense depots and defense related industries increased dramatically. They added additional production and repair lines, increased overtime hours and added additional shifts. Contract and organic depot teams were dispatched to the bases of deploying forces and later to Southwest Asia (SWA) to help prepare and to support many of our modern weapons systems. In fact, pre-existing in-theater contractor operated repair capabilities and host nation support played a significant role during the deploying forces initial beddown. Army Materiel Command (AMC) awarded in excess of 23,000 contracts involving more than 1,500 contractors for nearly \$4B to accelerate production of crucial items and services. Likewise, the Defense Logistics Agency (DLA) placed more than 94,000 contracts valued at nearly \$5B with more than 1,000 contractors. The Services awarded additional millions of dollars worth of contracts to support their deploying forces. Demands for some items increased as much as 20 to 30 times the peacetime rate.

EXECUTION

The Gulf War did provide an opportunity to assess the performance of depot-level maintenance during wartime. The Services' organic depot infrastructure in place on August 2, 1990 had been sized for a much larger conflict, and with few exceptions, was able to provide rapid response to both planned and unplanned demands. There are

⁴With the exception of designated footnotes, the facts figures and occurrences within this section, "Role of Maintenance Depots in Operations Desert Shield/Desert Storm", were gleaned from the *Conduct of the Persian Gulf War*, Appendix F. pp 393-449.

reasonably clear indications that where, as an example, depots fell below surge goals, the reasons were from a lack of repairable carcasses rather than facility, manpower, parts availability or other factor-of-production limitations.

Contract depot-level support was also an essential element of the logistical infrastructure. Requirements increased significantly the moment troops were first alerted and continued unabated in SWA. The technical expertise and hands-on support provided by contractor personnel were invaluable in maintaining our advanced aircraft systems and modern ground weapons. The fact that a number of them accompanied Army forces into Kuwait and Iraq during the ground war is an indication of their importance. In all, an estimated 600-700 depot-level contract personnel were in SWA during the conflict.⁵ The Army required the largest contingent and the Marine Corps the fewest.

Immediately following the President's order to prepare for deployment, the Army's Depot System Command (DESCOM) dispatched more than 430 employees as members of materiel fielding teams to help inspect, repair and issue equipment to deploying military personnel. DESCOM's maintenance depots surged to meet expanded requirements by hiring additional temporary employees and increasing overtime hours. Within a two week period Letterkenny Army Depot assembled 800 replacement tracks for M1A1 tanks, requiring the connecting of 67,000 individual track shoes; at Corpus Christi Army Depot, AH-1F Cobra helicopter overhauls were expanded from five to 30; and, at Sacramento Army Depot, overhaul of AN/VRC-12 radios increased from 350 to 1,000.⁶ A new equipment fielding team from Tooele Army Depot deployed to Saudi Arabia and fielded 4,000 new wheeled vehicles for tactical units deployed there. AMC deployed and operated several specialized depot-level repair facilities, employing more than 850 depot civilian employees and more than 1,000 civilians representing 60 contractors. These in-country repair facilities became indispensable when the full effects of the environment on our weapons systems became known. For example, sand ingestion in the Army's UH-60 helicopters' T700 engine quickly resulted in Mean Time Between Removal (MTBR) rates of 100 to 150 hours vice the peacetime MTBR of 1200-1500 hours.⁷

HECO Welding Supply Company, Oxford, Alabama and The Lincoln Electric Company, Cleveland, Ohio clearly demonstrated the commitment of the private sector in supporting the war effort. In October, 1990 Anniston Army Depot was tasked to send a modification team to Saudi Arabia to apply special armor plating to tanks arriving in Southwest Asia. The team was instructed to report with all the necessary support equipment and tools needed to apply the plating. Because of the ongoing depot workload however, there were not enough welding units on hand to provide the team the necessary quantity required. With the possibility of a ground war growing each day, the importance of the armor plating could not be overstated. The Anniston contracts directorate immediately contacted three known sources who could possibly provide the

⁵George B. Dibble; Charles L. Horne, III; William E. Lindsay, LMI Study Report Volume 1, Chapter 3, *Army Contractor and Civilian Maintenance, Supply, and Transportation Support During Operations Desert Shield and Desert Storm*.

⁶U.S. Army Fact Paper, *U.S. Army DESCOM Support to Operations Desert Shield/Desert Storm (ODS)*, 7 May 1993.

⁷Ronald Nickel, et. al., *Desert Storm Reconstruction Report, Volume IX. Logistics* (Center for Naval Analysis) Oct. 1991.

necessary units. HECO Welding Supply Company provided the earliest delivery date and the lowest price. On October 26, a letter of contract was awarded to HECO for 29 trailer mounted "SAM 400 Amp Diesel Welding Units" to be delivered by November 19(24 days). The staff at HECO stayed on the job seven days a week, coordinating deliveries, pulling strings and calling in favors -- anything that would expedite the work and delivery of the welding units. Lincoln Electric was identified by HECO to produce the welding units but each had to be built from scratch. However, when Lincoln heard that the units would be supporting Army soldiers in Saudi Arabia, the company immediately closed down several production lines and dedicated the necessary people and equipment to meet the compressed schedule. Suppliers also helped by giving the Lincoln orders a higher priority than those of their other customers. All through the process, not once was a request made for monetary consideration to accelerate the delivery schedules. The first six units were delivered within ten days of contract award and the final 11 units were delivered on November 14, five days ahead of schedule. As a result, the 29 welding units were produced and delivered ahead of schedule; the Anniston modification team was successful in applying the armor plating; and the Army tank crews commenced the ground assault of Desert Storm with extra protection.⁸

In the Navy, Naval shipyard ship depot maintenance facilities quickly accelerated activities to support fleet operations. In the Norfolk area alone, employees of the Naval Shipyard conducted unscheduled repairs to three battle groups, consisting of 25 ships, including three aircraft carriers. They also provided technical material and on-site support for the USS Biddle rudder replacement in Toulon, France. Naval aviation depots, shipyards and System Command field activities deployed teams comprised of U.S. government civilian employees and contract workers to conduct both routine and emergency depot-level maintenance and repairs to battle damaged ships and aircraft for both the Navy and Marine Corps. The teams were deployed to bases throughout SWA and to aircraft carriers afloat in the Persian Gulf and Red Sea. Immediately following the USS Princeton's collision with two floating Iraqi mines off the coast of Kuwait, shipyard workers from Long Beach Naval Shipyard, were dispatched to the Port of Dubai, United Arab Emirates to conduct emergency repairs. Leaks were stopped and bulkheads were shored up to the point that the ship could be towed back to Long Beach. The remainder of the battle damage repairs were completed at Long Beach ahead of schedule and at a savings of \$1M.⁹

Marine Corps depot activities significantly increased to meet the needs of forces deployed to SWA. More than 33,000 items directly in support of deploying forces were processed through the two Marine Corps Multi Commodity Maintenance Centers at Albany and Barstow. Examples of surge efforts included the design, fabrication shipment and installation of 26 Armor Protection Kits for the D7G Caterpillar bulldozer; manufacture and installation of appliqué armor kits for M60A1 tanks; manufacture and installation of 160 Light Armored Vehicle (LAV) night sight bracket assemblies and associated cables; and rebuild of 56 AN/PRC 68B radio sets for the Air Force.¹⁰ The radios were worked in three days even though the item had not been worked previously.

⁸Tracks base newsletter, Anniston Army Depot's, 30 May 1991.

⁹Digest base newsletter, USS Princeton (CG59) Begins SRA. Long Beach Naval Shipyard, 9 Aug. 1991.

¹⁰MARCORLOGBASES (Code 803) Point Paper, Operation Desert Shield Success Stories, 22 Jan. 1991.

The two MC3s dispatched teams of Marines and civilian employees to SWA to support retrofit modifications to TOW-II missile guidance systems and to install the M60A1 tank appliqué armor kits and the D7G bulldozer Armor Protection Kits.

Production of the Armor Protection Kits clearly illustrates the flexibility and responsiveness of the DoD organic workforce and facilities. In December 1990, the MC3 at Albany received an urgent request to design and produce 26 Armor Protection Kits for D7G bulldozers which were located in Saudi Arabia. The tractors were to be used during the breaching operations of the upcoming ground assault into Kuwait. The request was made to Albany after it was determined that industry could not produce the kits in less than 18 months. However, two months after receiving the request, the Albany workforce had designed, fabricated, packed and shipped the 26 kits to Saudi Arabia. Marines from the maintenance center accompanied the kits and completed the final installation just hours before the ground assault commenced. Each of the kits weighed over 9,000 pounds and consisted of 1,100 individual items. The ballistic armor was procured over the Christmas holidays, a time when steel mills across the United States were closed. However, the search was successful and all the known ballistic armor meeting the required specifications that was available in the US and Canada at the time was obtained for the project.¹¹

Organic depot activity was similar in the Air Force. The Air Logistics Centers (ALCs) accelerated the depot overhaul lines for C-141, F-111, C-130, B-52 and C-5 aircraft, producing over 70 additional planes and providing the equivalent of nearly 1,000 additional flying days.¹² The ALCs at San Antonio and Oklahoma City accelerated repairs on more than 260 complete engines and more than 550 major engine sections. The engine work was completed 20 to 60 days faster than in peacetime by working longer shifts and accelerating parts deliveries. However, perhaps even more important than the aircraft and engine accomplishments, were the repair of spare parts and assemblies for War Readiness Spares Kits (WRSKs) and combat systems. During the initial deployments, units literally lived out of their WRSK kits. The ALCs also manufactured 2,000 M-1 tank circuit cards when no commercial source could meet the compressed delivery requirements. Air Force depots deployed specialized teams to support units and bases, providing enhanced repair capabilities. Depot Combat Logistics Support Squadrons provided Battle Damage Repair teams who completed repairs on 30 aircraft, including F-15s, F-16s, B-52s, A-10s, and a UH-60.¹³ Likewise, the Aerospace Guidance and Metrology Center deployed a mobile calibration laboratory to Saudi Arabia to support aircraft guidance system repair as well as repairs on other precision guided weapons such as the Patriot missile.

DEPOT MAINTENANCE IMPLICATIONS

A primary lesson to be learned from the Gulf War is that both industry and the DoD organic depots played essential and necessary roles. In fact, they both performed as

¹¹Testimony by Col. R.C. Plunkett before HASC subcommittee on Readiness concerning Depot Maintenance Consolidation, 12 May 1993.

¹²Air Force White Paper, *Air Force Performance in Desert Storm*, April 1991.

¹³Air Force White Paper, *Air Force Performance in Desert Storm*, April 1991.

envisioned and as they had performed in previous wars. Industry provided the materials for war and the technical expertise to help support the complex weapons systems. The depots surged to meet an ever increasing number of demands and competing priorities. However, because they had been tailored to meet the demands of their respective services, they possessed the requisite skills necessary to respond and the flexibility to bridge the gap when industry could not meet requirements. Although fast paced and hectic during both preparation and execution, the demands placed on industry and the depots by the Gulf War were greatly tempered by our existing war reserves and the inherent reliability of the equipment. Regardless, the conflict clearly illustrated the importance of both elements of our industrial base.

FUTURE SCENARIOS

The Gulf War provided an enduring example of the type of conflict in which U.S. armed forces will be engaged as the new world order evolves. During the Cold War era, military planners prepared for a global conflict with massive, long-term engagement of forces. Since the demise of the Warsaw Pact, planners have refocused on different, challenging scenarios concentrated in a single region. These scenarios have U.S. forces in combat primarily to repulse land forces which:

- Are equipped with modern armaments (including chemical, biological, and, sometimes, nuclear weapons)
- Are supported by modern air forces and littoral navies (including submarines)
- Invade or de-stabilize countries in which the U.S. has a national interest or treaty obligation.

Other scenarios which lead to force engagement are occurring regularly as the U.S. asserts world leadership in peacekeeping and humanitarian operations, such as in Bosnia-Herzegovina and Somalia.

The current 'worst case' combat scenario is called 'Concurrent-Sequential'. The world situation envisioned starts with U.S. troops responding in large numbers to a Major Regional Contingency (MRC) to repulse invaders attacking the territory of an ally in which the U.S. has a national interest. The air, land and sea power of the invaders requires a joint task force to counter. This deployment is ongoing when, within weeks, another MRC requires U.S. troops to come to the aid of a different ally, also under attack by a well-equipped aggressor. Both MRCs would be relatively short-lived (several months), intense conflicts which would occur with only brief notice. U.S. involvement would begin with little or no time to increase readiness above peacetime levels. The objective would be to force the withdrawal of the invaders back to their own territory and the stabilization of the area.

As seen during the Desert Shield/Desert Storm surge, depot level contributions during MRCs would include:

- Expedited repair of essential systems and components;
- Modification of specialized equipment for the specific combat environment, and,
- Deployment of field support and battle-damage repair teams to forward areas.

Large-scale industrial mobilization and the rapid repair of large quantities of battle-damaged equipment at the depots is not included in this scenario. After the conclusion of hostilities, depot workloads would remain above 'normal' peacetime levels to restore returning equipment to peacetime readiness and catch up on deferred maintenance of equipment required for combat.

As the Gulf War demonstrated, the current inventory of depots was not substantially challenged by a regional conflict with long lead time, and a smaller inventory with supporting contractors could be planned for greater peacetime efficiency with sufficient flexibility to cover the requirements of future scenarios. Two levels of effort, peacetime single shift and contingency maximum output, should be considered in determining the organic capacity required to support future scenarios and their subsequent reconstitution. Unutilized capacity in a responsive private sector is not so readily identifiable, but exists in modern, competitive facilities. This may be brought to bear on Service requirements directly or through subcontractor support of organic depot requirements using flexible, reasonable cost contracts and expedited delivery schedules for critical items already under contract.

Having observed the relative ease with which most depots met the challenge of the Gulf War, a large amount of excess organic capacity may be unnecessary given the short-fused, relatively brief nature of the future scenarios. It is incumbent, however, on decision makers to remember that one of the certainties of war, possibly the only certainty, is that the fight will not evolve the way it was planned. As discussed earlier, during the Gulf War, some depots which were expected to repair and return major end items during global conflicts found themselves fully engaged in expediting repair of just specific components which were failing much faster than the predicted rate due to the regional environment. Just as it is important to identify and eliminate excess depot capacity and unnecessary redundant capabilities, it remains critical to provide a flexible, assured organic depot maintenance infrastructure, supplemented by a viable, vital contractor base, to back up U.S. forces with the widest range of industrial competence at their moment of greatest need -- in combat.

CHAPTER 3

DEPOT MAINTENANCE CORE

This chapter addresses the issue of depot maintenance CORE. It reviews the evolution of the definition of CORE, describes current Service practices, revalidates the justification for CORE depot maintenance, proposes an algorithm for sizing CORE, and describes how CORE fits into the other segments that make up the depot maintenance industrial base.

LEGAL AND HISTORICAL FACTORS

BASIS IN LAW

The legislative origins of CORE, beginning in 1985, are based in public law (Section 2464, Title 10, U.S.C.) which states " ... it is essential for the national defense that Department of Defense activities maintain a logistics capability (including personnel, equipment, and facilities) to ensure a ready and controlled source of technical competence and resources necessary to ensure effective and timely response to a mobilization, national defense contingency situations, and other emergency requirements." Appendix B provides an overview of significant legislation affecting not only CORE but also all DoD depot maintenance operations. As a result of the legislation, CORE was expressed as a list of functions and the installations or depots at which they were accomplished. At that time there was no specific quantification of exactly how much CORE depot workload was necessary to maintain a CORE capability.

HISTORICAL DEFINITION AND APPLICATION

From the mid 1980s until early 1990 the Joint Logistics Commanders did develop a portrayal of peacetime workload, and a projection of surge/mobilization requirements in a document called the Program Objectives Summary (POS). The POS served as a macro-level master planning document for the depot maintenance community and was used to justify capabilities and capacities necessary to support anticipated wartime requirements. The POS mobilization scenario was based on a protracted all out conventional war in Europe with the Warsaw Pact.

With the "Fall of the Wall", the all out war scenario is no longer a basis for planning and a period of geopolitical and fiscal retrenching began. The Services were asked to recompute their force structure requirements, and, at the same time, to reassess their need for large organic support infrastructures. Several draft Defense Management Report Decisions (DMRDs) were published in late 1989 which sought to guide the Services' depot downsizing. In June, 1990, the Deputy Secretary of Defense issued a Memorandum entitled "Strengthening Depot Maintenance Activities." This Memorandum and subsequent DMRDs forced DoD depot planners to consider economy

and efficiency to a much greater degree than had been the case in the past. The focus changed from mobilization planning to business practices.

In moving into a "business operating" environment, the Services continued to express concern that not all depot maintenance functions performed are necessarily based on least cost, i.e., CORE functions are based on military necessity. It was pointed out that there was a part of the business base that was justified as CORE (Title 10, U.S.C.). As a result, OSD developed the following definition of CORE:

CORE is an integral part of a depot maintenance skill and resource base which shall be maintained within depot activities to meet contingency requirements. It will comprise only a minimum level of mission essential capability either under the control of an assigned or jointly determined DoD Component where economic and strategic considerations warrant.

This definition of CORE was then applied by each Service to its respective resource base to quantify its CORE depot maintenance workload. Although the specific methodologies differed, Services identified by weapon system the amount of organic "CORE workload" needed to retain the necessary CORE skill and resource base. The results of these computations by the Services using their individual methodologies varied widely ranging from about 25% to about 60% of current total peacetime workload. A summary of the DMRD-era approaches and practices used by each Service to determine CORE is at Appendix C.

CONGRESSIONAL INITIATIVE - 60 PERCENT ORGANIC

As discussed in Appendix B, Congress passed legislation in 1991 that had the effect of establishing a new, de facto definition of CORE. Section 314(a) of the National Defense Authorization Act for FY92 and FY93 required that "...not less than 60% of the funds available for each fiscal year for depot level maintenance of Army and Air Force materiel shall be used for performance of such depot level maintenance by employees of the Department of Defense." In 1993, Title 10 of U.S.C. was amended to further expand this restriction to include the Navy, and required that the Military Departments may not contract performance by non-Federal government personnel of more than 40% of the depot level workload.

CURRENT CORE DEFINITION

In August of 1992 OSD published DoDD 4151.18, "Maintenance of Military Materiel". It further revised the previous definition of CORE as follows:

***CORE Maintenance.** An integral part of a depot maintenance skill and resource base that shall be maintained within depot activities to meet contingency requirements. CORE will comprise only a minimum level of mission-essential capability and must be under the control of an*

assigned individual DoD Component or may be a consolidated capability under the control of an assigned or jointly determined DoD Component where economic and strategic considerations warrant.

THE NEED FOR A JOINT-SERVICE CORE CONCEPT

BACKGROUND

In anticipation of the task of examining alternative management structures for administering the DoD depot maintenance system, the Study Group determined that the confusion surrounding "CORE depot capability" needed to be eliminated. As noted above, even though guidance was available in the form of "official" definitions, DoD Instructions and Public Law, each Service still conceptualized and quantified CORE differently to meet its own requirements. Each also reacted quite differently when presented with proposals that would increase or decrease Service control over CORE workload. Additionally, private industry, with a strong parochial interest in the business opportunities associated with non-CORE work, began pressuring the Services for an unambiguous answer to the question "What is CORE?" This confusion, and the impasse it created, was blocking debate on the more substantive management reform issues which needed attention.

To move beyond the impasse, an effort was undertaken by the Study Team to search beneath current CORE strategies for the common denominator(s) shared by all of the Services. It was expected that when this "lowest common denominator" justification for CORE was understood and accepted, the Services could define and manage CORE using the same assumptions and rules, leading for the first time to a joint-Service strategy for both CORE and non-CORE workload distribution.

THE NEED FOR ORGANIC MAINTENANCE DEPOTS

Before proceeding with the subject of CORE, two even more fundamental questions need to be put to rest. In spite of precedent dating back to the last century (in the case of our Shipyards), these questions continue to be asked, mainly by private sector business interests:

- "Why is it necessary to have organic maintenance depots?"
- "Are there functions and activities that organic depots provide, that the private sector can't satisfy?"

The primary purpose for maintaining organic depot maintenance capability is the need to minimize operational risk by means of a ready and controlled source of technical competence and resources. Organic depots provide a collection of response capabilities not normally available from the private sector. These include the ability to:

- Rapidly increase output and change priorities without contractual encumbrances.
- Rapidly dispatch field teams for crash/battle damage repair and in-theater repair.

- Ensure life cycle support when manufacturers go out of business or change product lines.
- Provide a guaranteed source of repair when the private sector has no interest in the work.
- Ensure that the government has reasonable cost alternatives based on "smart buyer" knowledge and/or a second option to a sole source situation.

One absolute in a combat contingency situation is the tremendous uncertainty of industrial support requirements. While both organic maintenance depots and private sector facilities have the capability to deal with these uncertainties, only the organic depots are unconstrained by the requirement to turn a profit. In spite of a gratifying level of teamwork and partnership, Government and industry are obligated under current Federal Acquisition Regulations to maintain an arm's length business relationship. Without legally binding agreements (contracts) and financial incentives, DoD cannot place emergency demands on the private sector and expect immediate results.

Private industry responds to clearly defined and predictable requirements. It is difficult to write (and even harder to figure out how much to pay for) a contract to cover undetermined needs which can materialize at any time and require an unspecified nature and level of effort. Any disruption or constructive change to contractual agreements invites potentially contentious legal review. Even when the principals are in full agreement, contractual terms constrain and complicate DoD's flexibility. Industry's primary concern is profit (as it should be), and contractors have every right to pick and choose the work they wish to perform. Stockholders expect commercial firms to take advantage of changed priorities or redirected effort as opportunities to increase profits.

Organic depots, on the other hand, may not refuse to support emergency contingency needs or demand extra money for delay and disruption. They provide a flexible and rapid response capability, are insulated from market pressures, have deployable capabilities, and are under the direct control of the Military.

SERVICES SEEK TO MINIMIZE RISK AND CONTROL COST

Having established a sound, public policy basis for some level of organic industrial support, initial efforts to find a common CORE strategy centered on the following questions:

Is there an organic depot industrial CORE requirement that exists completely independent of the management process by which a public or private activity is normally selected to perform depot work?

Or, put another way,

Should work be assigned to an organic depot just because it is "CORE", without regard to any other consideration?

The answer to these questions is "no". As discussed below, all workload is actually assigned based on how the Services choose to satisfy two basic responsibilities:

- Avoid the risk that mission essential weapons won't be ready for combat, or, if employed, can't be sustained in combat because of ineffective depot support.
- Control the cost of depot industrial products and services.

Risk avoidance and cost control are perhaps the most fundamental DoD management responsibilities. The organization and maintenance of a standing military are inherent Government functions which carry with them the responsibility to provide operating forces with the quantity and quality of weapon systems, training, and support needed to minimize the risk of defeat in combat. In providing these weapons and supporting them in the field, the Services additionally have an obligation to carefully control the way they spend the taxpayers' money.

RISK AND COST TRADE-OFF DECISIONS

Risk avoidance and cost control drive CORE. In the context of depot industrial support to the operating forces, "risk" has three components. Two of these components have a direct impact. They are: the risk the absence of timely depot capability will compromise operational readiness (creating a "readiness CORE" requirement) and the risk that a lack of adequate depot capability will inhibit committed force support (creating a "sustainability CORE" requirement).

- Readiness CORE includes the depot-level competencies and *capabilities* which exist to ensure that mission essential weapon systems can be kept in a high state of operational readiness during peacetime training exercises. Maintenance which supports readiness is accomplished at organizational, intermediate and depot levels (Figure 3-3). Readiness CORE at the depot level typically involves the capacity to perform scheduled industrial maintenance actions such as overhaul, calibration and component rework as well as unscheduled depot level repair actions. Readiness CORE is essentially equivalent to the depot *capabilities* needed to provide normal peacetime support for mission critical weapon systems and equipment.
- Sustainability CORE describes the depot-level competencies and *capabilities* which exist to ensure that mission essential weapon systems can be supported during contingency operations and quickly repaired if damaged through accident or hostile enemy action. The depot *capabilities* needed to sustain combat are built upon peacetime readiness CORE. Maintenance which supports sustainability is also accomplished at all three maintenance levels (Figure 3-3). Depot-level sustainability CORE competencies and resources typically include those required to perform unscheduled maintenance actions which are beyond the capability or capacity of intermediate maintenance activities (e.g., crash/battle damage repair, emergency high volume repair of mission essential components (surge) and emergency manufacture of critically needed repair parts). Sustainability CORE also includes the capability and capacity to provide emergency on-site depot engineering and maintenance field teams.

The third, indirect, component of "operational risk" involves the risk associated with the absence of technological knowledge and awareness. Modern weapon systems

are extraordinarily complex and the Services cannot afford to be without an organic *capability* to understand, master and support current technology. Much of this organic support is provided by depot in-service engineers and technicians, and includes (but is not limited to):

- Evaluating weapon system failure modes and effects to predict safety hazards, readiness degraders and unanticipated support problems (and support costs).
- Monitoring the effectiveness of in-service logistics programs, using statistical measurements to detect adverse trends so that problems can be corrected before readiness or safety are compromised.
- Closing the loop between the users of current-generation weapon systems and the designers of next-generation systems; "lessons learned" which are captured, compiled, and made available to the R&D laboratories can result in significantly improved reliability and maintainability (and reduced support costs) in the future.
- Reverse engineering problem hardware or software so that fault isolation and repair procedures can be prepared even if the original manufacturer is no longer in business or has lost interest in his product.
- Providing the Services with the skills and experience needed to fully understand the engineering and technical nuances of the marketplace in order to be a "smart buyer" of commercial depot industrial products and services.

When deciding how best to support an end item or Depot Level Repairable, the Services must consider the readiness risk, sustainability risk and technology risk of each proposed depot support decision. This is particularly important if the supported item is a mission essential weapon likely to be required under one of the current combat contingency scenarios.

In the area of capability, experience has shown that private sector firms tend to confine capability to current workloads and have limited flexibility to respond to unanticipated or emergency requirements. Major prime contractors almost always rely on large networks of subcontractors, each of whom, usually, has a very restricted capability. Organic depots, on the other hand, have the capability to do many thousands of different jobs because of the way they are organized and managed. In the area of cost, experience has shown that the recurring cost of products or services provided by a directed "sole source" supplier (either organic or commercial) is typically higher than the cost of the same products or services provided under a competitively awarded contract. In order to meet their mandate to minimize risk and control cost, the Services routinely and constantly make trade-off decisions between organically provided support and commercially provided support, and between directed support and competed support *in order to achieve the lowest possible risk at a reasonable cost.*

This effort is seldom straightforward of course; complicating factors may include:

- the existence of non-recurring costs (e.g., the cost of running a competition to identify the least cost supplier),

- the fact that there is not necessarily a linear relationship between the cost of depot industrial products or services,
- the risk of unresponsiveness, unsatisfactory performance, or disrupted support.

THE RESULT OF TRADE-OFF DECISIONS

Notwithstanding these complications, decisions must be made. Depending on the Service, the geopolitical threat environment and the operational commander's professional judgment, the potential adverse military consequence of poor depot performance in one area may require that the support be provided by a low risk supplier. Another product or support service may be less urgent to the customer and "qualify" for a higher risk source of supply. *Organic CORE requirements arise as the result of risk avoidance and cost control trade-off decisions made by the Services.* Each Service must prioritize the military urgency of all of its hardware (and software), determine the essential competencies and capabilities needed to maintain and sustain that hardware, and then strive to minimize the combat commander's risk by directing workload which sustains the most important (CORE) capabilities to the organic base. Once in the organic facility, depot-level support efforts thus assigned can properly be called "CORE" workload as depicted in Figure 3-1.

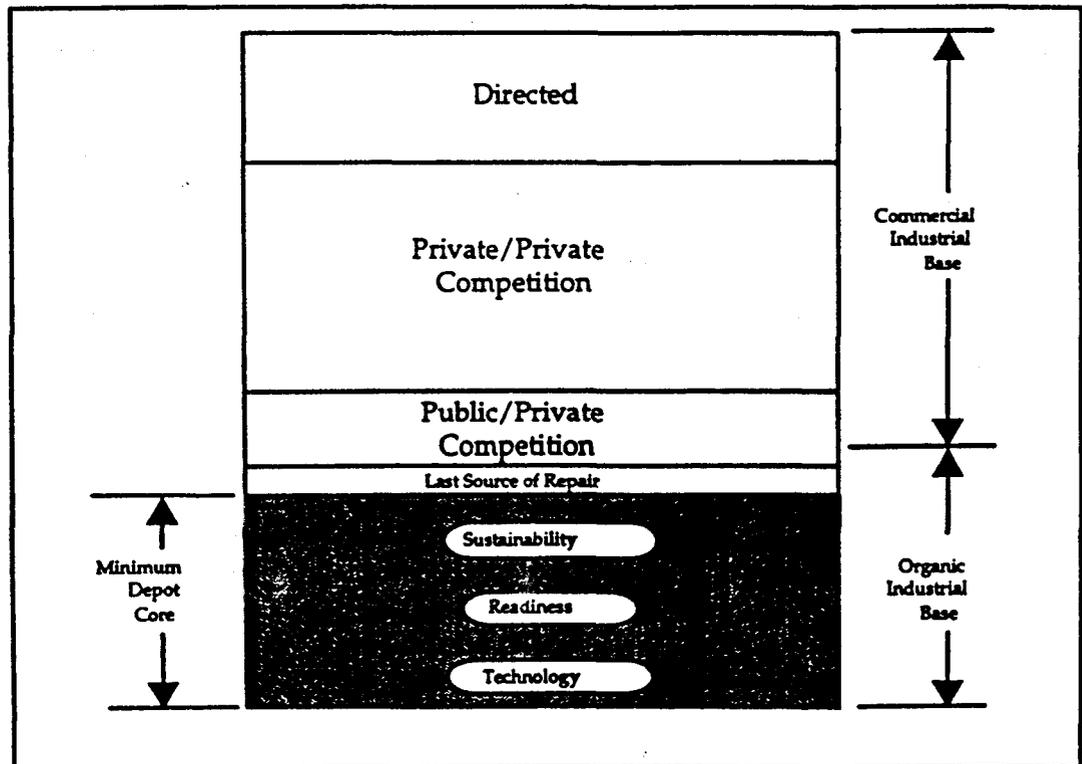


Figure 3-1. CORE Workload Results from Risk and Cost Trade-offs

USING COMPETITION TO CONTROL COST

In addition to making *direct* trade-offs between higher risk and lower risk support solutions (which often have lower and higher costs, respectively...), the Services can also exert a powerful *indirect* influence on depot support costs. All depot industrial support is subject to cost control -- support assigned to a specific facility for the express purpose of minimizing potential operational risk, as well as support assigned without regard (or with reduced regard) to combat risk avoidance. Once the appropriate or acceptable level of risk has been determined, competition among the suppliers in that risk category can be undertaken in an effort to further control cost.

Competition for depot workload is a controversial subject. There are diverse opinions regarding appropriate competition candidates, regarding appropriate competition quantities, and regarding appropriate competitors for military industrial workload. The critical issue is the fact that *competition works to control depot cost*. Therefore, some level of organic depot participation in the competitive process is appropriate and desirable.

Public sector participation in the workload competition process has several forms. One form is depot competition for "above CORE threshold" quantities of the weapon system (or systems) currently supported at the activity as an operational risk-avoidance responsibility. The Services have the discretion to compete this "above CORE threshold" workload to control costs. If competed commercially (private/private), it is likely that the recurring unit price paid for the above CORE support would be lower than the directed organic unit price, particularly if there are large volume variances. On the other hand, if the above CORE work was competed public/private, and if the organic facility won, then it is possible that the recurring unit price of the entire effort (CORE plus non-CORE) would be reduced. Other possible competition scenarios are discussed below. The point is that the organic depots can be a powerful tool for controlling the cost of depot support if they retain enough reserve capacity to be a credible competitor for discretionary (above CORE threshold) workload.

The relationship among the components of organic depot industrial support workload is shown in Figure 3-2. As can be seen, a significant percentage of the industrial support typically provided on an emergency or *ad hoc* basis (crash/battle damage repair teams, engineering investigation and analysis, preparation of technical directives, urgent customer service support, etc.) falls within the definition of "risk reduction"; most of the available workload in these areas is needed to maintain CORE capabilities. On the other hand, most of the stable and predictable workload (wholesale component repairs, scheduled weapon system rework, major modification efforts, etc.) far exceeds the minimum needed to maintain CORE capability in these areas, and is therefore offered to industry through competition or, in some cases, directed to a private sector supplier under a sole source contract. The small area labeled "last source" represents non-CORE support which the organic depots provide because the private sector is unwilling or unable, for a variety of reasons, to do so.

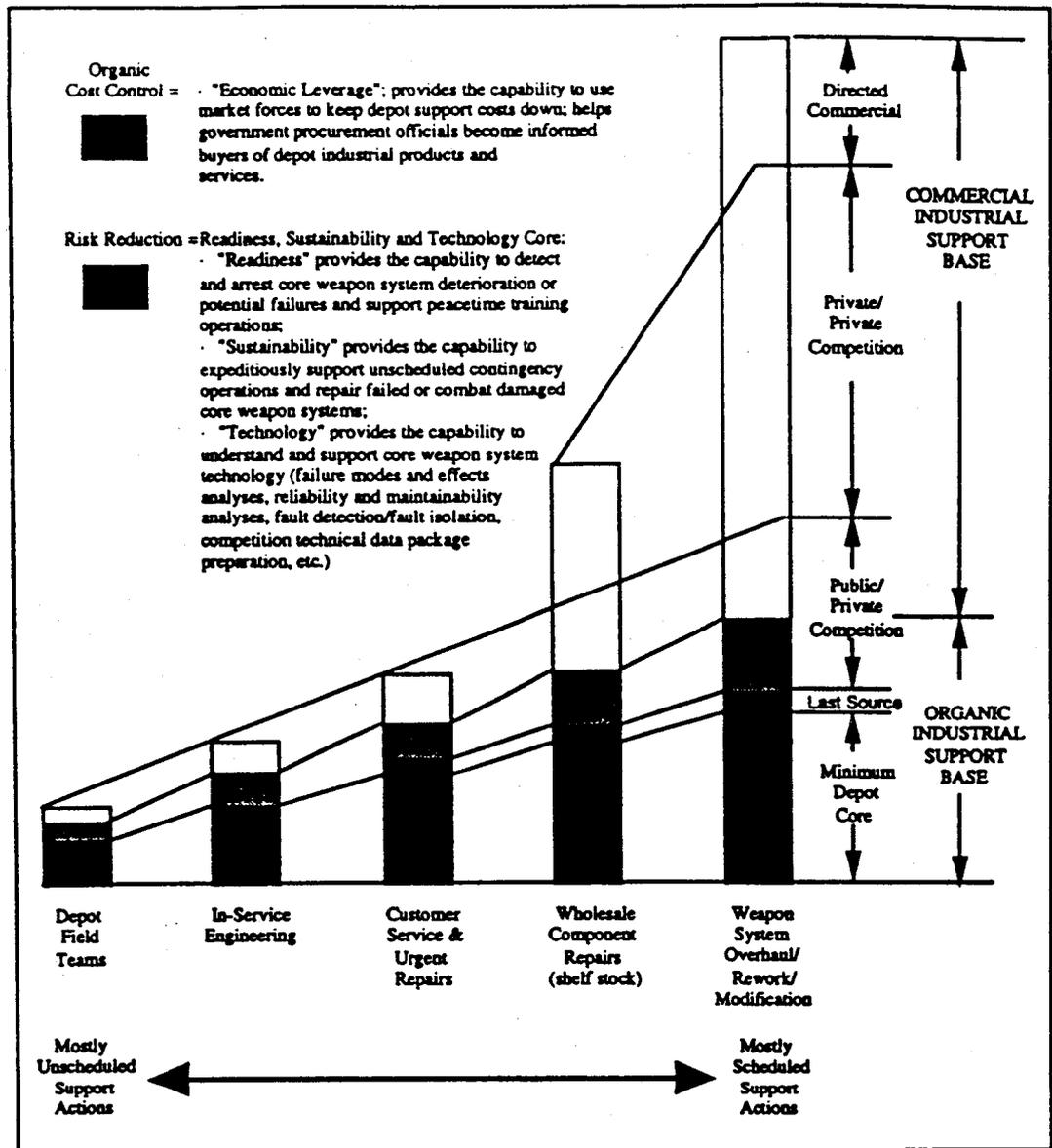


Figure 3-2. Notional Depot Industrial Support Workload Distribution

It must be recognized that this line of logic leads to an organic depot that is sized to have greater capacity than just CORE. "Rightsizing" of the organic depot infrastructure must take into account the requirement for risk reduction (CORE), plus the requirement to do work that private industry is unwilling or unable to do at a reasonable cost (last source) and workload that is won by the depots under public/private competition (cost control). Depots should have as much capacity (some used, some unused at any given point in time) as can be justified at an affordable cost. Certainly any facility that is unnecessary should be closed as soon as possible. However in the remaining facilities, some reserve capacity needs to be protected to permit organic depot competition, and to provide a contingency surge capability, if required. A more comprehensive discussion of cost and capacity theory is presented in Chapter 4.

THE ORGANIC INFRASTRUCTURE ALLOWS THE SERVICES TO MINIMIZE RISKS AND CONTROL COSTS

The organic infrastructure (with its current and reserve capacity) needs to be seen as a powerful resource available to DoD to make it *less risky* for the operational commanders to undertake combat missions, and less expensive, overall, for the Service Chiefs to meet their combat support responsibilities. The Services must ultimately defend the number and size of their depots based upon:

- their overall assessment of the risk that unresponsive, unsatisfactory or disrupted depot industrial support poses to combat success
- the strength of their desire to use the depots as a tool to help control industrial support costs.

CORE, which is targeted directly to the Joint Chiefs' combat contingency scenarios, has two quantifiable components: Operational Readiness CORE (which seeks to ensure that depot support is never a constraint to operational readiness); and Sustainability CORE (which seeks to ensure that operational commanders' ability to restore equipment to service during combat is never constrained by a lack of depot support) as illustrated on Figure 3-3. The Technology CORE requirement illustrated on Figures 3-1 and 3-2 does not lend itself to explicit quantification and, instead, is assumed to be satisfied if the Readiness and Sustainability CORE requirements of front-line weapon systems are satisfied.¹

Service Chiefs must have the authority to direct selected depot workload to a Service depot for the *express purpose* of avoiding the risk of potentially unresponsive support to the operational commanders. An algorithm for doing this based on the process shown in Figure 3-3 is presented below.

It is not possible to arbitrarily determine a "fair" public/private split of the available depot workload. The problem is too dynamic. As funding levels drop, the Services may not be able to afford as much risk avoidance as they would like. That doesn't mean the desire to do so has diminished, only that the resources to satisfy the desire are gone. The same logic applies to work assignment decisions made in an effort to control costs. As threats change, the cost of preparing to respond to the threat will also change. Post cold war trade-offs and competition decisions made by Service and DoD industrial planners may not be clear from a private sector business perspective, yet may represent the best compromise for the taxpayer.

¹Readiness can be as important as sustainability. Navy ships and Marine Corps Maritime Preposition Forces, as examples, require high states of peacetime readiness to support continuous forward deployment.

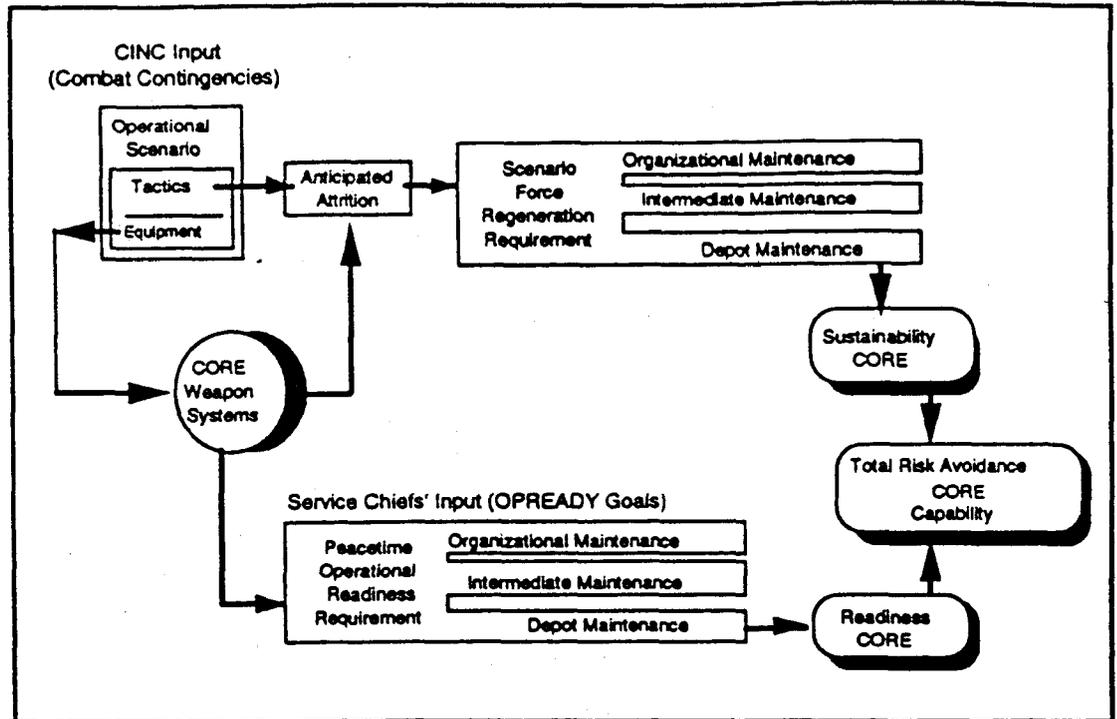


Figure 3-3. Risk Avoidance = Operational Readiness + Combat Sustainability

PROPOSED FRAMEWORK FOR CORE

SIZING DEPOT MAINTENANCE - A PROPOSED ALGORITHM

CORE is an organic base comprised of skilled personnel (with requisite knowledge and ability), facilities, and equipment - all maintained to ensure that a minimum technological capability exists to support critical weapons systems and equipment. Although CORE exists to provide a capability (in reality, of course, many capabilities), it ultimately manifests itself as workload.

In order to quantify CORE and relate it back to the contingency requirement, it is necessary to develop a workload sizing algorithm. The most important aspect of this algorithm is that it is driven by the contingency scenario, rather than any requirement from the maintenance depot. It is not driven by peacetime workload, however, inevitably a comparison will be made.

1. A brief explanation of a conceptual depot maintenance CORE sizing algorithm follows:

- a. Identify the specific types and the quantity of mission essential equipment to be used in the JCS approved contingency scenario(s).²
 - b. Determine a workload experience factor per unit based on known usage for each item of equipment. Make conversions based on applicable failure factors, op tempo adjustments, and scenario driven environmental/attrition factors.
 - c. Compute scenario depot maintenance workload based on scenario readiness and sustainability requirements.
 - d. Determine depot skills required to support scenario requirements expressed in direct labor hours, man-days, or other appropriate measure.
 - e. Adjust for depot surge capacity. This provides the conversion necessary to account for the difference between peacetime and surge production capacity.
 - f. Calculate basic CORE workload requirement.
 - g. Apply an efficiency/economy factor to keep the minimum CORE support effort from being exorbitantly and prohibitively expensive.
 - h. Determine peacetime CORE requirement.
 - i. Non-CORE workload is the difference between current or planned total peacetime workload and peacetime CORE requirements.
2. A hypothetical example of how the algorithm would work follows:
- a. Out of a fleet of 2,000 of a given item, 800 are required for support for the combat contingency scenario.
 - b. The workload experience factor could be based on peacetime or other known usage. This usage is then converted into anticipated scenario requirements through application of failure factors, op tempo, and scenario driven environmental/attrition factors. Labor hourly requirements are calculated individually for the end item and each of its major components. The details would be determined through the individual Service's materiel management process. The anticipated labor hour requirement for this item in the scenario is 37.5 direct labor hours per month or 450 hours on an annualized basis. There is no requirement that usage be uniform throughout the scenario. It was simplified for illustration in this example.
 - c. The total labor hour requirement for 800 items is 360,000 direct labor hours:
 $800 \text{ items} \times 450 \text{ hours} = 360,000 \text{ direct labor hours}$.

²This is a necessary condition for workload to be within core. It is not a sufficient condition. As the KC-10 aircraft illustrates, depot maintenance may be supported by contract where high commonality with non-military equipment or other, similar, risk-mitigating conditions exist.

- d. The breakout of skills based on labor hours for this contingency requirement is: 200,000 direct labor hours for gas turbine engines (GTE), 80,000 for hull mechanical, and 80,000 for electronics. The skills breakout is derived from a determination of skills required for each item in the workload. Actual skills required would be refined to a much greater detail than illustrated here. It may even be necessary to identify specific job series and/or grades.
- e. The workload adjustment for surge capacity used by the Service is 160% (1.6).
- f. The basic CORE calculation is as follows: $200,000/1.6 = 125,000$ for GTE; $80,000/1.6 = 50,000$ for hull; and $80,000/1.6 = 50,000$ for electronics.
- g. No adjustment is necessary for efficiency/economy in this specific case because when this workload is combined with other CORE workload in the above three competencies (GTE, hull, electronics), sufficient workload is available to operate the facility economically in all three skill areas.
- h. The determined peacetime CORE requirements for this item would be: 125,000 for GTE; 50,000 for hull; and 50,000 for electronics.
- i. The existing peacetime workload in this example is 500,000 direct labor hours (200,000 for GTE; 200,000 for hull; and 100,000 for electronics). The non-CORE workload is determined as follows and may be assigned to a source of repair on a basis other than the CORE computation:

Table 3-1. CORE/Non-CORE Workload Example (Direct Labor Hours)

Item:	GTE	Hull	Electronics	Total
Total Peacetime W/L	200,000	200,000	100,000	500,00
Minus CORE W/L	-125,000	-50,000	-50,000	-225,000
Non-CORE W/L	75,000	150,000	50,000	275,000

As noted previously, the capacity determined as the result of the CORE algorithm computation is not the total capacity required. Capacity is also needed to handle "last source" repair requirements, cost control (competed workload), and rationally justified reserve capacity.

It is also recognized that the detailed computation of CORE in peacetime will not perfectly anticipate contingency requirements if and when combat actually begins. There is too much uncertainty to be accurate. It is hoped that, in the aggregate, the pluses and minuses will balance out. Hence, the overall computation of CORE will be a reasonable statement of workload needed to establish and maintain contingency-driven weapon system support capabilities.

OPERATIONAL IMPLEMENTATION OF CORE

The quantification of depot maintenance CORE workload requirements allows identification of the necessary composition of skilled personnel (with requisite knowledge and ability), equipment, and facilities to support the specified scenario. Though the CORE calculation process begins with all mission essential weapon systems and equipment, the amount of support that results does not include all equipment and depot level reparables (DLRs). The amount of CORE is limited to supporting readiness and sustainability of that fraction of the total fleet used in the contingency scenario. The range of items in the CORE is also limited to those that are chosen to support necessary skills and competencies for the required commodities and technologies. The resulting CORE calculation will vary by Service based on differing roles in the approved contingency. Also, the CORE calculation for each area of competency will vary based on the differing characteristics of commodities (e.g., small CORE share relative to peacetime workload for airframes, large share for engines). We continue to stress that CORE provides a *capability* to support, rather than *actual* support for the complete range of mission essential equipment. The focus is primarily on high density equipment and DLRs. Though CORE support may not be least cost, it will be for a reasonable cost and will provide a militarily significant productive output.

Since the CORE workload in support of a skill or competency will be calculated as the sum of *all mission essential items requiring that skill or competency*, the Services have great discretion in deciding which weapon systems are retained in the organic base. It is not necessary that specific contingency weapon systems workload be retained, but rather that a capability relevant to that weapon system be preserved. One decision that might be made is to contract out all of one system and keep all of another, very similar, system in house. *CORE is the capability to support, not the actual maintenance of specific weapon systems.*

NON-CORE DEPOT MAINTENANCE

MANAGING NON-CORE WORKLOAD

Depot industrial workload that is not expressly assigned to reduce Service risk can be managed independently or jointly by the Services. This non-CORE work can be directed to an appropriate private sector company, be made available to commercial companies through private/private competition, or be made available for public/private competition. DoD recognizes the importance of the private sector industrial base and realizes that depot maintenance workload may in some situations contribute to the viability of a commercial industrial base capability. Therefore, policies that support the use of non-CORE depot maintenance workload to support the commercial industrial base are in the best interest of DoD.

We have described CORE depot maintenance as that organic depot capability and capacity necessary to avoid the risks of unresponsive industrial support. Once the CORE base is established, it is necessary to characterize the remaining building blocks that make up the industrial support base. Non-CORE workload includes mission essential

equipment sole sourced to private industry, mission essential equipment above the minimum CORE level, and non-mission essential equipment.

Why is there mission essential equipment that is not in the depot maintenance CORE?

- First, since CORE is minimum capacity and not items of equipment, once CORE capacity is supported, the balance of the workload does not necessarily require organic support.
- Second, there are items for which the forces of the commercial market place assure low risk, cost-effective life cycle support. Items in this category would typically include commercial off-the-shelf products where DoD would not be the predominant customer.
- Third, assignment of selected workloads to private industry that sustain the required commercial skills is necessary to support the long-term viability of an industrial sector.
- Fourth, there are special considerations such as fast changing technology or the item is of such a low density and high cost that establishing organic capability is simply too expensive.

The following paragraphs discuss the non-CORE portion of depot maintenance.

SOLE SOURCE TO THE PRIVATE SECTOR

A significant portion of commercial depot workload is assigned to the private sector on a sole source basis. The justification for these assignments is usually that the contractor is the only feasible source, there is a significant cost advantage, or it is necessary for protecting an industrial base capability. Interim contractor support of new equipment until the design stabilizes and organic capability is developed accounts for the major share of this category. Other reasons include proprietary data, fast changing technology, and low density/high cost to establish organic capability.

PRIVATE-PRIVATE COMPETITION

Private sector competition affords significant opportunities to minimize costs. Fundamental to conducting private sector competition is Government ownership of an adequate technical data package and the existence of multiple reliable sources in the market place. Workload volume and potential savings must warrant a competition. Both workload and funding must be predictable. Mission essential equipment and non-mission essential equipment may be candidates for private sector competition. Private sector competition of mission essential equipment, however, would be for either above CORE work or for items where an acceptable level of risk is assured.

PUBLIC-PRIVATE COMPETITION

Competition between the public and private sector is especially beneficial in two circumstances. First, when there are very limited qualified sources in the private sector (for example, just one), public-private competition may yield significant cost savings. Second, it serves as a tool to periodically discipline cost effectiveness and efficiency in both contractor and organic depots. As with private-private competition, adequate technical data is essential and workload and funding must be stable. Also, items competed would include both mission essential and non-mission essential equipment.

LAST SOURCE OF REPAIR

The life cycle for weapon systems and equipment may span more than 20 years. At some point the private sector may no longer be interested in support of a weapons system. The item may be old, it may no longer fit in the original equipment manufacturers (OEM) business base, the work may be low volume/low value, or lack of interest may prompt the private sector to quote an exorbitant cost. Also, throughout an extended life cycle, OEMs may go out of business or may change product lines. The net result is that the organic depot becomes the last source of repair even though the workload may not be part of CORE.

MODIFICATIONS AND UPGRADES

By definition, modifications and upgrades are not depot maintenance CORE. The Government has traditionally obtained development and manufacture of kits for modifications and upgrades from the private sector. However, installation of kits has been done both by both public and private facilities. Under this proposed CORE concept, kit and upgrade installations should normally be a function of the private sector (preferably awarded through competition). Organic depots should install modification kits and upgrades only when there is not adequate workload to sustain a required CORE capability or when such work can be done concurrently (and most efficiently) with CORE workload.

WORKLOAD DISTRIBUTION

In the process of managing both risks and cost, operational commanders influence the distribution of workload to the various depot maintenance support categories. Figure 3-4 outlines a notional risk trade-off framework. Although this distribution is not always least cost, the workload allocation process allows the operational commanders to acquire the best value consistent with their determination of acceptable risk. In other words, the resulting depot maintenance categories are a continuum of operational risk and cost management. It should be emphasized that the private sector has an opportunity to accomplish all workload "on the table" except CORE depot maintenance. The private sector may not win all public-private competitions, but

the workload will only go to a public depot based on best value. The private sector could have "last source of repair" workload if there was any viable source in the market place. Based on this strategy, private companies will now know what the organic depot maintenance CORE consists of and what workload will either be directed to the commercial base or made available through competition.

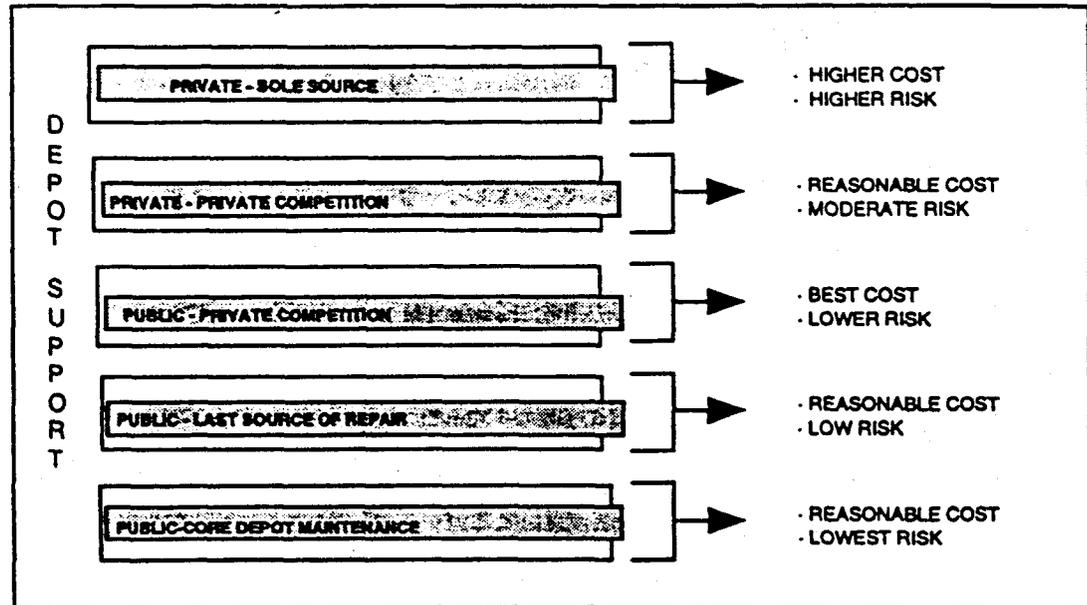


Figure 3-4. Public and Private Workload Distribution

SUMMARY

This chapter of the report began by reviewing the basis for CORE, its current definition, and existing Service practices for quantifying CORE. The most important results were:

- The existing definition of CORE was validated.
- The need for CORE capability was also validated based on an examination of the requirements of operational commanders to avoid the risks of unresponsive industrial support.
- An algorithm was proposed in order to connect the determination of depot maintenance CORE capability and capacity to the required readiness and sustainability of mission essential items used in the contingency scenario.

Additionally, the relationship of CORE workload to non-CORE workload was discussed along with the role of competition in controlling costs in both the public and private sectors.

CHAPTER 4

INDUSTRIAL BASE CONSIDERATIONS

OVERVIEW

Chapter 1 introduced the potential depot maintenance issues that needed to be addressed as a precursor to considering management alternatives. In Chapters 2 and 3, this study has:

- Shown that there has been substantial reduction in depot capacity, consistent with reduction in force structure, budget and key indicators,
- Revalidated the concept of CORE capability and provided an algorithm for Service application,
- Concluded that interservicing remains minimal.

Not yet addressed are key questions such as methods for reducing unnecessary duplication, especially across Service boundaries; the potential for transferring additional workload to the private sector; stability of the industrial base as influenced by depot maintenance; and the appropriate degree and form of depot maintenance centralization. In order to approach these questions, this chapter will:

- First review relevant trends in commercial practice, particularly those regarding centralization
- With this background, review the status of tools and metrics with which to resolve questions such as which workloads should be consolidated and how much capacity should be retained
- Examine the role of competition since this is a principal depot maintenance initiative for affecting savings
- As an extension of the competition discussion, discuss privatization of Government depots
- Then consider the broader question of stability of the private segment of the industrial base.

RELEVANT TRENDS IN COMMERCIAL PRACTICE

ECONOMIES OF SCALE—CENTRALIZATION

Since June of 1990, when the Deputy Secretary of Defense directed the DoD components to undertake a plan of action to strengthen (i.e., increase efficiency and reduce costs of) depot maintenance activities, the Services established the Defense Depot Maintenance Council (DDMC), launched various workload and commodity studies, improved business planning, and took various other streamlining steps. As indicated in Chapter 1, among the hoped-for changes which has not yet occurred is a marked increase in interservicing (i.e., centralization) of depot work. In 1991, the amount of savings generated through interservicing was negligible (approximately \$100,000). In 1993, the amount is projected to be \$23.1M, approximately 3% of joint Service depot maintenance savings from all initiatives.

Traditionally grounded in expectations of economy of scale, centralization has become a cornerstone of efforts to shed excess depot capacity. The fundamental idea is to move workload from one depot to another, both intra- and inter-service, and then close unused facilities. In light of the perceived limited success of interservicing, and very real difficulties getting any Service to agree to close *its* depot and depend on another Service for depot maintenance, the concept of centralization has expanded to encompass control of depot maintenance, not just the physical performance of maintenance.

The Study Team was aware that the last decade has seen a sea change in management practice and thought regarding centralization. Once considered nearly a panacea by industry it is no longer so—in fact, the 1980s saw a marked trend toward decentralization, flatter organizations, and emphasis on small, self-governing teams in order to promote responsiveness to rapidly changing customer needs. Although military requirements and organizations are not strictly comparable to commercial enterprises, it was important to glean what is relevant from this trend as one step in avoiding breaking something that was working while fixing something perceived to be broken.

Two recent RAND Issue Papers review recent industry and Government experience with centralization and consolidation.¹ Although both papers address broader perspectives than depot maintenance, they are relevant to the current study. Brauner and Gebman define four forms of consolidation: activity, material, management, and control. Activity consolidation, perhaps more commonly thought of as mass production, is the traditional generator of economies of scale. Material consolidation attempts to achieve savings by dealing with large batches (of orders, of materials, etc.). Management consolidation assumes that one large management organization is more efficient than several small ones. Control consolidation centralizes key decisions about resources and how processes operate.

¹George Donohue, Mark Lorell, Giles Smith, and Wayne Walker, "DoD Centralization: An Old Solution for a New Era?", April 1993; Marygail K. Brauner and Jean R. Gebman, "Is Consolidation Being Overemphasized for Military Logistics?", March 1993.

CENTRALIZATION DOES NOT ALWAYS INCREASE EFFICIENCY

Particularly important to the present study are lessons regarding activity, management, and control centralization. Although it is probably undisputed that each form of centralization can bring increased efficiency, there are circumstances under which it will not and, certainly, there is an opportunity for unintended perverse results. Some of the important limitations and considerations which have appeared in practice are as described below.

Incentives and Responsiveness.

- As size of hierarchy increases, the sense of identity between the center and working level is disrupted. Information flow back and forth is slowed. Incentives are impaired.
- As the number of layers of management increases, working level understanding of process improvements has increased difficulty reaching the center .
- As functional decision making is centralized, formal and informal horizontal ties to the customer are weakened--the "center" talks to the customer's "center" rather than production level to end-user.
- In an environment of uncertain demands, decentralization of authority, through encouragement of entrepreneurial practice, is better able to respond quickly.

Command and Control Costs. An increase in the number of complementary specialized workers to be coordinated requires an increase in the size of hierarchy. As hierarchy increases, coordination is more difficult and cost of management increases disproportionately.

Transportation Costs (affects primarily activity centralization). With consolidation of activities at one location transportation costs can become large relative to economies of scale.

DISECONOMIES OF SCALE

These considerations are not novel with the RAND issue papers. Much the same points (especially as concerns *diseconomies* rather than economies of scale with centralization) are made by Peters and Waterman in *In Search of Excellence*,² and by Peters and Austin in *A Passion for Excellence*³ as well as by many others.⁴ The two Peters' books are known for two other themes that are relevant to this study. They are:

²Thomas J. Peters and Robert H. Waterman, Jr., *In Search of Excellence: Lessons from America's Best Run Companies*, New York: Warner Books, 1982. In fact, one need look no farther than Peters and Waterman's eight basic principles.

³Tom Peters and Nancy Austin, *A Passion for Excellence: The Leadership Difference*, New York: Warner Books, 1985.

- A shift by "successful" companies to organizational learning, as opposed to control, as the most important cultural value--as a basis for continuous improvement and innovation in order to adapt to a rapidly changing environment. This is a substantive shift in emphasis since the idea of control has been arguably central to management since at least the time of Taylor.⁵ Basically, Peters and his co-authors conclude that an overemphasis on control has proved to be dysfunctional in the face of rapid change because of inherent conservatism and unavoidable myopia of the "rational" analysis underlying centralized decisions. What has worked better is decentralization, accompanied by wide access (including at the shop floor level) to financial, productivity, and other comparative data.
- Intentional internal redundancy, especially as a means to promote more rapid (i.e., parallel) learning and innovation. As in the case of all redundancy, this is a risk mitigation method--guarding against single-point failure.

Taken as a whole, these trends suggest a caution light for centralization and consolidation--whether it be in the form of activity, management, or control. The Study Team had this caution in mind in framing the alternatives presented in Chapter 5. It is evident in the thresholds, only above which a central authority would get involved. In the final analysis, however, the management alternatives differ markedly in the degree to which they centralize management and control. This was intentional to provide a fairly wide range of choices from which to find a balance between the real need for a better (i.e., centralized) cross-service mechanism and the acknowledged dysfunction that centralization also brings.

CAPACITY AND WORKLOAD CONSOLIDATION: NEED FOR NEW CONCEPTS, METHODS, AND METRICS

Even after the effects of BRAC 93 are taken into account, the DoD depot infrastructure is likely to be larger than needed to maintain organic industrial base capabilities. Continued cuts in force structure will assuredly increase pressure on the depots to downsize. Furthermore, if a larger proportion of the available workload is performed by industry in the future (for example, through successful public/private competition), these pressures will be even greater. Thus, even though trends in the commercial world dictate consolidating with caution, the requirement to decide if, where, and when to consolidate workload and reduce capacity has been and will continue to be a central concern for depot management. Unfortunately, depot managers trying to deal with consolidation are ill-served by current concepts, methods, and metrics.

⁴Examples are Benjamin Barber, *Strong Democracy*, Berkely: University of California Press, 1984; Albert O. Hirshman, *Exit, Voice, and Loyalty*, Cambridge, Mass., Harvard University Press, 1970; Robert N. Bella, et. al., *The Good Society*, New York, Alfred A. Knopf, 1991.

⁵Gareth Morgan, *Images of Organization*, Newbury Park: Sage Publications, 1986, p. 283.

THE CONCEPT OF EXCESS CAPACITY

Conventional wisdom translates a difference between workload and capacity directly into excess costs. But is this really the case? Is "excess" depot capacity a significant burden on the defense budget? Or is the cost of excess capacity less of an issue than has been supposed--is it even well understood?

- Generally lost in the excess-capacity-is-expensive perception is an appreciation of the fact that the majority of depot costs are unrelated to capacity, per-se, but reflect the level of support provided to (and paid for) by the depots' customers. The depots do not have an operating budget of their own; almost all of their funds come from customer accounts deposited in the DBOF. Over time, as the requirement for depot products and services drops (as a consequence, for example, of reduced force structure), the resources devoted to that requirement naturally diminish, constraints to throughput will seek a new level, and the capacity of a depot will be reduced. The time, however, required for capacity to drop can be painfully long--perhaps 18-24 months or more.
- As discussed in Chapter 3, depots can be a powerful tool for controlling the costs of depot support *if they retain enough reserve capacity* to be a credible competitor for discretionary (above CORE) workload--yet there is no systematic way of deciding when or where to preserve reserve capacity for this purpose.
- Consolidating all workload of a given type in a single facility introduces the risk of single point failure in the event of catastrophic damage (or interruption from any cause). Explicit risk assessment and management techniques are absent.
- cursory examination would suggest that marginal costs of maintaining reserve capacity might not be a major factor in any event. The investments that created the capacity are sunk, sometimes incurred many years ago. The costs associated with maintaining buildings do not need to be exorbitant (especially if utilities are maintained at levels just sufficient to prevent freezing or other damage) and equipment is fairly easily mothballed. In this light, extra capacity might be a (potentially) inexpensive form of insurance.

The basic problem is that established methods and metrics for dealing with the issue of capacity are ill-suited to providing the kinds of answers that are needed.

HOW CAPACITY IS VIEWED

To begin with, the constraints that limit capacity can be thought of in parallel or serial terms. In the parallel case, workstations are independent; work stoppage at one station does not affect another; and output is the sum of the individual workstation capacities. In the serial case, the least capable (bottleneck) station determines the output of the system.

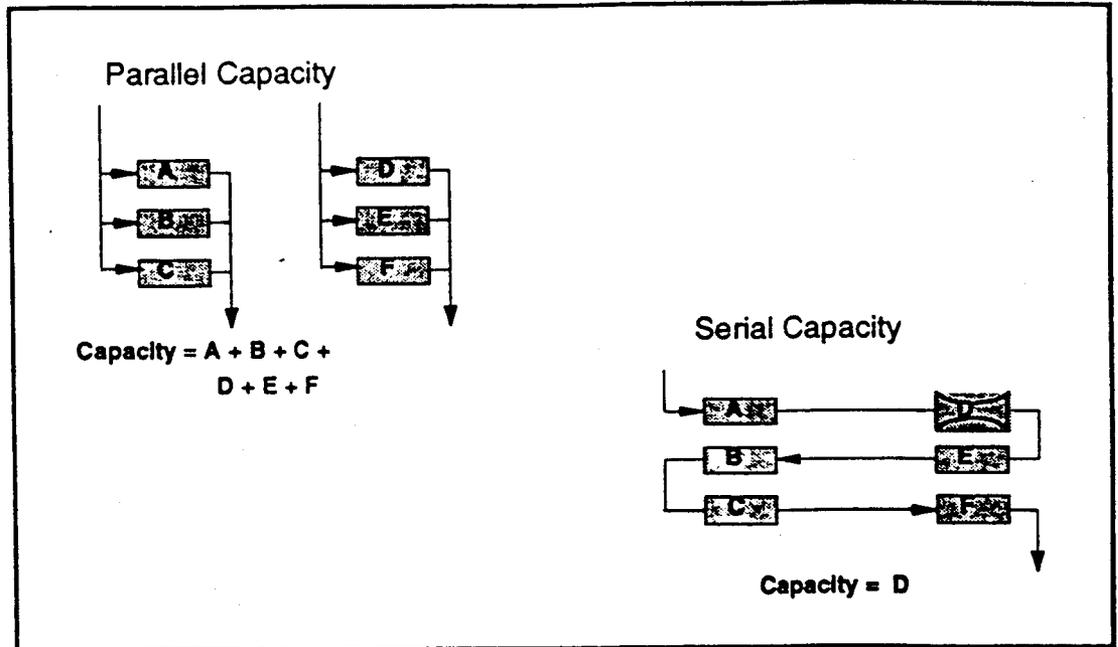


Figure 4-1. Parallel and Serial Capacity

The existing DoD capacity measurement system is essentially a parallel view: it counts work stations and loads them equally. Past policies that stressed 100% (or even "high") utilization of capacity inherently shared the same view.

The Theory of Constraints (TOC),⁶ however, holds that the impediments to throughput are more serial than parallel. Capability and capacity are zero until each significant constraint has been addressed. When this condition is met, and assuming the constraints can be kept under control, product begins to flow through a depot. At this point, there is 100% capability and *some* capacity. If it is desired to increase capacity and throughput, then more resources must be made available to the system. But, again referring to TOC, it is necessary to target those added resources to the most constrained process. It does no good to improve the processes that aren't constraining throughput (at least it does no good from a capacity standpoint – there may be other good reasons for doing this like safety or environmental requirements.).

The distinctions between parallel and serial constraints and between capability and capacity have practical significance. Depot commanders and managers have genuinely believed that: (a) because of constrained resources, they perpetually had insufficient capacity to meet demand (as indicated by chronic customer grumbling about poor depot turn-around time, among other things), and/or (b) that costs were too high because their processes were inefficient or out of control. Management attention historically, therefore, was directed toward improving capacity by removing or improving efficiency of the serial bottlenecks. The problem with the serial view, and what makes

⁶Jacob V. Simons and Richard I. Moore, "Improving Logistics Flow Using the Theory of Constraints," *Journal of the Society of Logistics Engineers*, Fall 1992, pp. 14-18.

the parallel view attractive, is that measures of capacity that take into account the serial nature of work flow are plant configuration and product-mix dependent.⁷

The parallel simplification removes the serial complexity problem (by ignoring it) and provides useful comparison data. For instance, the existing DoD capacity measurement system showed that pre-BRAC 93 capacity was as much as 40% greater than projected workload. Unfortunately, the capacity measurement system produces, at best, an index, not an absolute measure and what it could not do is provide guidance on where to make adjustments.⁸ As an example, analysts involved in the JCS *Depot Maintenance Consolidation Study* did not use capacity and instead resorted to ad-hoc methods for determining workload consolidation candidates.⁹ Similarly, NAVSEA in preparing BRAC 93 recommendations used a process-based analysis to determine which shipyards should be retained.

A problem with both the parallel and serial views is that they compromise depot managers' understanding of the balance between customer demand and product flow (throughput). Capacity is, by definition, static; use of this measure enforces a view of capacity such that it is "just there," independent of customer time-dependent requirements.

Any discussion of capacity needs to consider marginal costs. The basic marginal cost curve is illustrated on Figure 4-2. The idea is that for any fixed investment in plant, per-unit production costs initially decrease with increasing volume as fixed and semi-variable costs (such as maintaining equipment) are spread over a larger base. Beyond some point, however, per-unit costs increase again as overtime is required, machinery is overworked and needs more maintenance, transaction (i.e., coordination) costs increase¹⁰ and inventories have to be increased to keep choke points fully utilized.¹¹ The minimum cost point on the curve is referred to as design capacity--the most efficient manufacturing (or repair) volume. As stated above, cursory examination would suggest that marginal costs of maintaining more capacity than needed might not be a major factor. Is this the case?

⁷Memorandum, Joint Logistics Commanders, to Assistant Secretary of Defense (Production and Logistics) subj: "Capacity Measurement Improvement Study Report," December 5, 1990, with attached study report, "AD-HOC Initiative to Improve Capacity Measurement," November 1990.

⁸Ibid, p. iii. The same problem occurs with life-cycle cost (LCC). Because the numbers generated by a LCC model have dollar signs (\$) in front of them they are sometimes taken as absolute (ratio scale) measures. LCC practitioners recognize that the outputs of their models are relative measures only, good for assessing "more than" and "less than" but nothing more.

⁹Essentially, the process used was to determine which depots could not be closed because of technical considerations (a major engine line, as an example) and then move workload from other depots to these.

¹⁰Transaction costs are often either assumed away or grossly underestimated in conventional econometric analysis yet NAVSEA has found that for rich, complex workloads it is ability to organize the work that determines output, not facilities, equipment, and skills. See also the discussion on relevant trends from commercial industry.

¹¹This latter point was made recently in the context of the theory of constraints. Simons and Moore, Op. Cit.

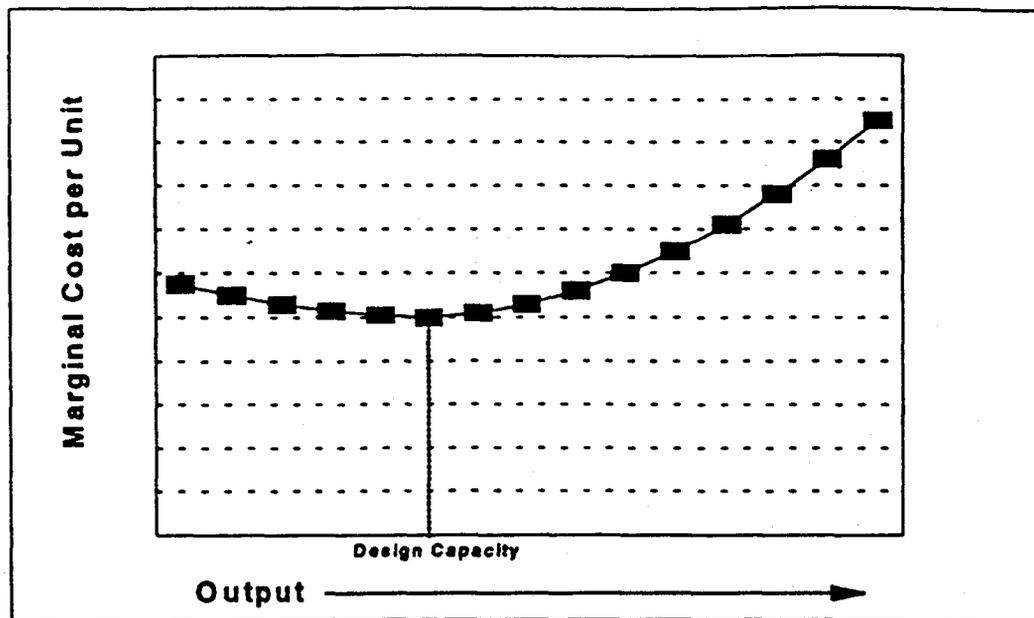


Figure 4-2. Marginal Cost

Figure 4-3 shows the classic two-plant allocation problem—tailored to the situation where both plants (depots) are operating short of design capacity at the point where the marginal cost curves intersect. Both are capable of performing the same repairs on the same equipment and, since there is a fixed amount of work to be done, output of depot A (increasing from left to the right) is at the expense of depot B (increasing to the left), and vice versa. As it turns out, if this is the situation, sharing work between the two depots costs more than doing all the work at either A or B—even though B is more expensive than A. (Figure 4-4).

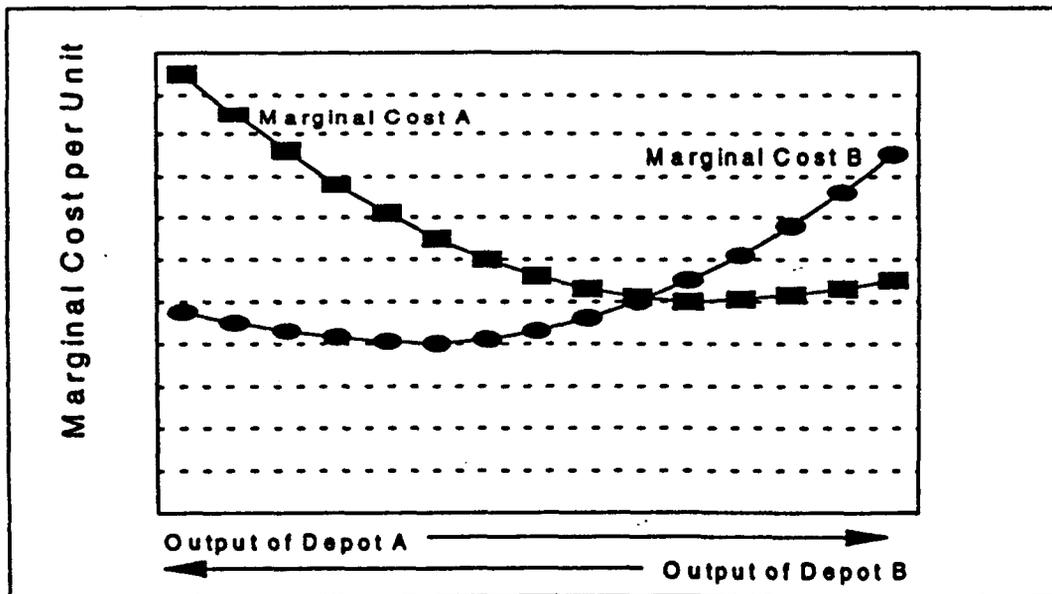


Figure 4-3. Marginal Costs of Two Depots

In the past few years it was probably a safe assumption that some depots were operating short of design capacity and the behavior in Figure 4-4 illustrates why it made sense to close depots. But after the results of BRAC 93 closures, which depots will operate near design capacity, which will be past it or well short of it, and for what commodities or product lines? Are the curves steep or flat? In this series of illustrations, the curves were deliberately exaggerated to illustrate conceptual behavior of a product line. In the real world, the Figure 4-4 total cost curve may well be nearly flat. If it is, then closing A, closing B, or keeping them both open makes little difference. The fact is that depot managers do not know and existing capacity measures are not capable of providing these insights. Lacking a methodological basis, decisions on capacity are bound to be difficult to either reach or defend.

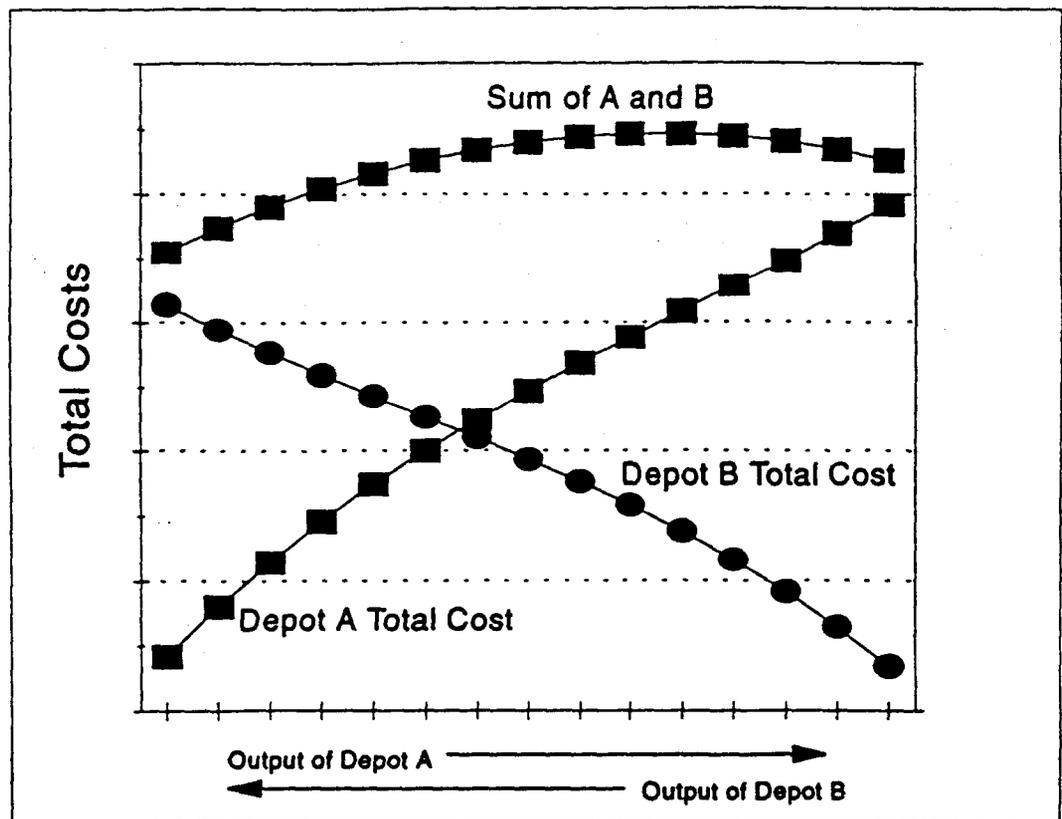


Figure 4-4 Total Costs of Two Depots

IS CAPACITY UTILIZATION THE RIGHT MEASURE OF MERIT?

Beyond the points enumerated above are other important considerations. Competition demands some amount of excess capacity since a competitor without the capacity to do the work is a hollow threat. How much capacity is the right amount to foster competition without carrying an unreasonable burden? There is no analytically-based answer to this question--nor a policy framework within which to approach it.

Second, the concept of measuring capacity and work (with the goal of full utilization of capacity) may well be problematic in any event. Industry has apparently abandoned it in favor of balancing flow with demand¹² -- which, as indicated earlier, has been the depot commanders' intuitive view of the problem. During wartime, depots track items produced versus items required -- flow and demand by another name. Using a different figure of merit to plan for wartime support than is used during a conflict is bound to lead to disconnects.

Third, although aggregate capacity and aggregate capacity utilization as measures of merit have been in place for over 15 years, they have never been satisfactory.¹³

Considering the history of attempts to come up with better capacity measures, all of which have met with frustration, it is hard to escape the conclusion that improvement is simply not available. With the future downsizing yet to come, it is time to seek a new methodology. There are three choices:

- Rely on competition to sort out efficient from inefficient processes, then simply close down the losers of competitions.
- Provide a new analytic basis (probably based on a metaphor other than capacity) for making workload consolidation, retention of redundant capability, and related decisions. (Similar to the approach taken in Chapter 3 of this report for CORE, any such undertaking needs first and foremost to have a coherent foundation.)
- Adopt a mixed strategy that partly relies on competition and partly on analysis.

Since any strategy pushed to an extreme invites unforeseen perverse results, the third choice is probably the prudent course. Competition takes time to sort out efficient from inefficient performers. An analytic approach could be faster if there is available an improved methodology to resolve the current inter-Service confusion, emotion, and arbitrariness relative to consolidation. To effectively address BRAC 95 considerations, the problem deserves urgent attention.

COMPETITION

ROLE OF COMPETITION

The DoD depot maintenance competition program in which all Services currently participate was greatly expanded during the Defense Management Review process. In order to improve the efficiency of the organic depot maintenance facilities, the Deputy Secretary of Defense directed changes to the business practices of the depots. As part of these changes, competition became a principal initiative for affecting savings

¹²Memorandum, Joint Logistics Commanders, "Capacity Measurement Improvement Study Report."

¹³Ibid.

planned for in the Corporate Business Plan. The objectives of competition are to obtain the best value for DoD and accomplish the DoD mission in the most efficient manner possible while assuring the necessary readiness and sustainability of the forces. An important aspect of the strategy is the competition for depot maintenance workloads among maintenance depots and private firms. The expectation is that increasing the amount of depot maintenance workload offered for competition will result in a better value for the taxpayers and the Services' operational units, by producing more efficient, cost effective, and streamlined depot organizations.

Estimated savings from the program, which is managed by the DDMC through the CBP, are \$1.7B through FY97. Table 4-1 reflects the annual savings projections.

Table 4-1. Projected Competition Savings (\$ In Millions)

SERVICE	FY91	FY92	FY93	FY94	FY95	FY96	FY97	TOTAL
ARMY	-1.5	7.2	15.0	23.0	31.0	28.0	36.0	138.7
NAVAIR	64.2	57.8	111.0	134.5	135.6	24.6	28.2	555.9
NAVSEA	0.0	0.0	3.6	3.1	7.4	20.2	35.5	69.8
AIR FORCE	14.1	68.8	110.5	176.6	241.7	162.0	169.6	943.3
MARINE CORPS	0.3	0.4	2.0	4.0	6.0	6.7	6.7	26.1
TOTAL	77.1	134.2	242.1	341.2	421.7	241.5	276.0	1,733.8

SOURCE: DDMC Corporate Business Plan, Fiscal years 1992-1997
*FY91 column reflects savings achieved.

LEGISLATION AFFECTING COMPETITIONS

The competition program had its beginning in 1985 with the DoD Appropriations Act ¹⁴ which directed the Navy to test the feasibility of using competition between public and private shipyards as the basis for awarding a portion of the ship overhaul and repair workload. SAC report no. 100-235, December, 1987 requested that the DoD propose public/private competition beyond Navy activities and the SecDef conduct interservice competitions for at least four depot maintenance competitions. However, the 1989 Authorization Act contained language which prohibited the SecDef from requiring the Secretary of the Army or the Secretary of the Air Force to compete any depot maintenance workloads. The FY90 Appropriations Act stated that the SecDef may acquire depot maintenance through competition. However, the FY90 Authorization Act precluded the Army and Air Force from engaging in the program. The Defense Management Report (DMR) issued in July 1989 by the SecDef to the President, delineated the need to enhance the efficiency and effectiveness of acquisition, logistics, and maintenance related programs.

With the support of the Services, ASD(P&L), and the House Armed Services

¹⁴Public Law 98-473. 98 Stat. 1904, 1907.

Committee, the National Defense Authorization Act for FY91 permitted the Army and Air Force to conduct a pilot program for FY91.¹⁵ Other legislative provisions were as follows:

- Section 352 of the National Defense Authorization Act for FY93 precludes contracting for the performance by non-Federal Government personnel of more than 40% of the depot level maintenance workload for the military department or Defense Agency;
- Section 9095 of the Defense Appropriation Act for FY93 states that notwithstanding any other provision of law, the Secretary of Defense may acquire the modification, depot maintenance and repair of aircraft, vehicles and vessels as well as the production of components and other defense related articles, through competition between Department of Defense depot maintenance activities and private firms; and
- Section 381 of the FY93 Authorization Act states that naval shipyards and Army, Navy, and Air Force aviation depots may compete for production of defense-related articles and the provision of services related to defense programs.

EFFECT OF COMPETITION PROGRAMS ON DEPOT MAINTENANCE

Competition for depot maintenance workloads often alludes to one specific type: those involving Government depots (publicly owned) and commercial companies (privately owned). These are referred to as "public-private" competitions. In these competitions, the company or the depot offering to do the work for the "best value" will receive the contract. In addition the Department also conducts some "public-public" competitions. In these competitions, only the Government owned depots compete against each other.

Inherent in competition is an element of risk--for the obvious reason that competition carries with it possibility of losing. If a competition program is lost, depots lose jobs and have a reduction in the workload base on which to distribute the fixed costs of their operations. This risk has forced the depot staffs to examine their operations from a business perspective.

Streamlining depot processes, reviewing program technical requirements, and realigning organizations in preparation for competition, in theory, assures that no matter who wins the workload competition, a more efficient and cost effective organization performs the work. The practical results so far are in agreement with these expectations. Among the changes that have occurred are the following:

- Work specifications are being simplified--saving not only the labor that used to go into their preparation but also providing greater opportunity for innovative methods. For instance, Navy specifications for public shipyard work used to be

¹⁵Public Law 101-510 Sec. 922. 04 Stat. 1485,1627.

very detailed, providing precise directions on how to perform tasks. By contrast, specifications for work to be competed emphasized what the desired result was rather than providing a detailed "how-to." Under public-private competition both the public and private bidders bid to the same result-oriented specifications.

- Direct workers in the public sector have become involved in standard setting, increasing the realism of standards and, in the process, identifying better work methods.
- The pressures of competition are motivating both public and private competitors to seek improved processes through innovation.
- The bid costs associated with a program are receiving more thorough scrutiny for realism and in general, greater cost-consciousness is eliminating the "nice-to-have" services that added little or no combat value. As at least partial confirmation, in NAVSEA, where the most number of public-private competitions have been held, the final costs on competitively awarded contracts have consistently averaged less than original budget estimates.
- Competition has forced both the public and private sector to control overhead costs.

CONCERNS OF INDUSTRY

As the Department expanded the public-private competition program to make more Government depot work available to bids from industry, several industry associations raised concerns about differences in public and private sector industrial activities that might complicate the goal of achieving fair competitions. The need quickly materialized for standardized procedures and guidelines to insure that bids included comparable bids. A Cost Comparability Handbook was developed to facilitate the determination of the true cost to the Government of proposed maintenance actions regardless of the source of repair. Several industry associations have reviewed the handbook and proposed changes. The Department is carefully considering the industry recommendations and is currently updating the handbook to reflect some of the suggested changes.

In an attempt to level the playing field, a Defense Contract Audit Agency (DCAA) audit of Government proposals is required prior to award, and the Government proposals are subject to Service, DoD, and GAO audit during and upon completion of work.

Industry has also expressed concern that cost overruns in Government facilities are paid for by DoD. The Government may be responsible for paying certain types of overruns by either public or private facilities which are due to scope of work increases not contained in the original work statements. Current policy stated in the Cost Comparability Handbook does not allow public agencies to finance competitive workload with non-competition work, nor can a bidder knowingly include either a gain or a loss, bid on the margin, or offer management discounts. In instances when losses do occur, the individual depot faces the same risk as private concerns of becoming less competitive or

of closing, since they must also spread losses via rate increases to other customers. Concerns addressed by industry will be addressed in future revisions to the Cost Comparability Handbook.

PUBLIC-PRIVATE COMPETITION RESULTS

There have been enough public-private competitive awards now to begin to show who is winning competitions.

In the 1991 pilot program described above, there were five competitions in the Air Force, seven in the Army, and two in the Marine Corps. The average value of the contracts was \$5M. Award results are summarized in Table 4-2.

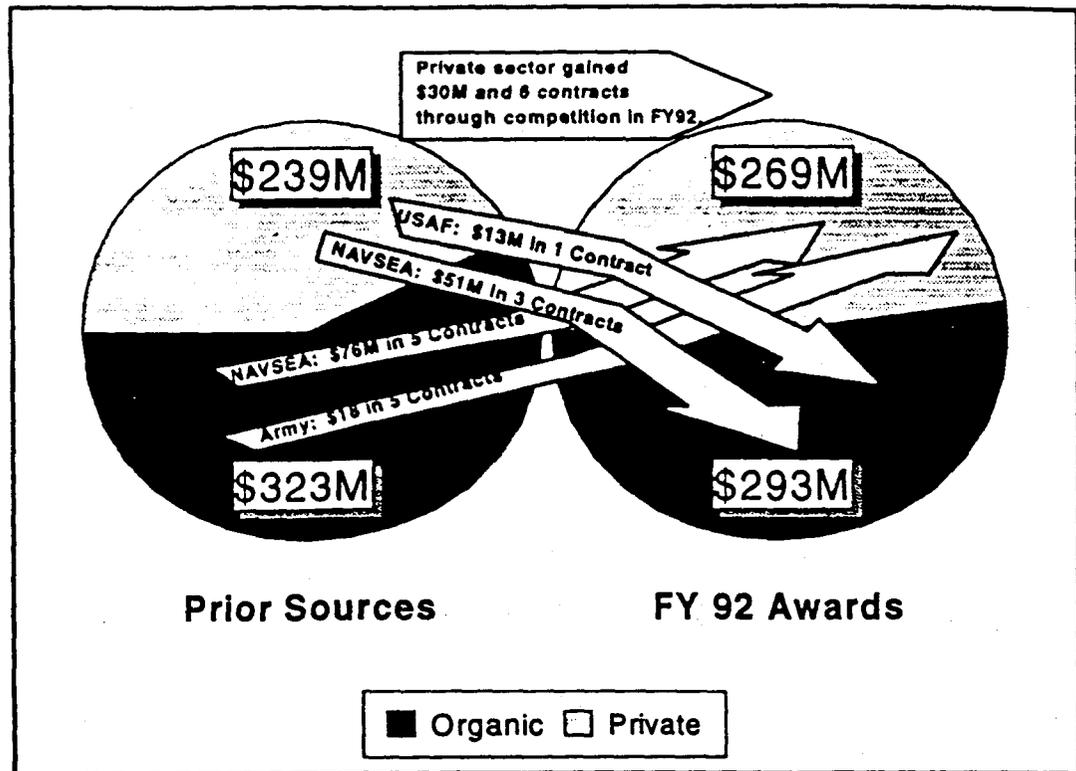
In the Army and Air Force competitions, there were two workloads that changed from contract to organic and two that changed from organic to contract. The net change measured in dollars was small, approximately \$5M.

Table 4-2 FY91 Pilot Program Results

Service	Number of Contracts	Awards
Army	7	Private: 2 Public: 5
Air Force	5	Private: 3 Public: 2
Marine Corps	2	Private: 1 Public: 1 (Toole Army Depot)

Figure 4-5 summarizes the overall 1992 results for all four Services. A total of \$562M in workload was awarded competitively by the Services--with \$269M going to the private sector and \$293 to the public. Prior to the 1992 competitions, \$269M of this workload had been performed by the private sector and \$323M by the public sector. As indicated on Figure 4-5, the competitions resulted in a net increase of \$30M in workload and 6 contracts for the private sector. Although there was a net public-to-private flow, results at the Service level showed more variability.

- The Army competed and awarded 9 programs, all previously organic. The private sector won 5 contracts worth \$18M.
- NAVSEA competitively awarded 31 contracts. Of the 14 previously organic programs, 5 went to the private sector. Of the 17 previously private sector programs, 3 were awarded to organic shipyards. As a result of all the NAVSEA awards, there was a net increase of 2 contracts and \$25M in the private sector.
- The Marine Corps competed 4 organic programs, all awarded to organic depots.
- The Air Force competed and awarded 8 FY92 programs, 4 previously organic and 4 previously on contract. All of the previously organic programs remained organic while 3 of the previously private sector programs remained private and 1 returned to an organic depot.



SOURCE: Service inputs.

Figure 4-5. FY 1992 Depot Maintenance Competition Results

PUBLIC-PUBLIC COMPETITIONS

This section under work. Will talk to implications from results of public-public competition, e.g., SAAD program. Also should address current Congressional requirement to compete workload shifts in excess of \$3M.

INTERNATIONAL ASPECTS

There are at least two important international aspects. First, the U.S. is not the only country using private-public competition. Representatives from the United Kingdom, Australia and Israel have indicated that their countries are also looking to public-private competition to allocate maintenance workloads between Government and private facilities.¹⁶ In fact, the British Ministry of Defense has developed a guide to competition.¹⁷ Obviously, DoD depot maintenance managers need to pay attention to the results in these three countries and benefit from their lessons learned.

Second, when setting policy for competitions, the acceptability and role of foreign competitors must be a consideration. There is a "quid-pro-quo" relationship that

¹⁶ODUSD(L) Maintenance Policy Directorate, June, 1993.

¹⁷[UK] Ministry of Defence, *The Guide to Competition in Defence Services*, 1992 Edition.

exists in U.S. military matters involving foreign countries. It is expected that "fair and open" competitions include foreign companies (or even Government depots), especially where reciprocity is seen as due. For example, if the United Kingdom allows U.S. companies and depots to compete for their E-3 aircraft workload, the United Kingdom would expect reciprocal treatment by making some U.S. military workloads available to British companies and depots. There is, however, concern over the implications involved in having foreign firms enter competitions. Specifically, there is Congressional concern that workloads may migrate from U.S. firms and depots to those of foreign countries. Even if military readiness and responsiveness requirements could permit specific workload migration, careful consideration must be given to factors such as U.S. employment goals and costs to the taxpayers. Additionally, the relative vulnerability of firms outside the U.S. to political unrest is also a factor that should be weighed in providing best value to the Government.

LONG TERM CONSIDERATIONS

Although expanded depot maintenance competition thus far appears to be achieving the desired benefits and efficiency results, there are long-term implications that may be poorly understood and could be counterproductive. At least six are apparent.

No matter how much good-faith effort is placed into creating a level playing field between private industry and the Government, there are inherent, natural differences between the two sectors. In some sense the differences cancel out: Government depots, not making a profit, do not pay income tax; private industry has greater freedom in staffing and sources of materials. But, since there is no real way to understand how all of the differences balance, continuing perception of *imbalance* (and, hence, of unfairness) is probably guaranteed.¹⁸

In addition to perceived unfairness, depot maintenance now has a confused relationship with industry. Under public-private competition, industry is both a supplier and a competitor. DoD has long recognized the constraints that an arms-length relationship with its suppliers imposes. What are the implications of an adversary relationship? As an example, rights in data have always been a concern, will industry now be more reluctant to share technology and design information?

Conducting large scale public-public competition on a continuing basis would strongly suggest the existence of significant excess organic capacity and duplication of industrial plant equipment. Public-public competition may also create adversaries out of depots that for other reasons need to cooperate. As a minimum, and in fact by design, there will now be communication barriers internal to the depot maintenance community that did not previously exist.¹⁹

¹⁸Such a perception was apparent at the OSD/Industry Depot Maintenance Roundtable held in conjunction with this study.

¹⁹As an example, the Air Force creates an arms-length relationship between its government "buyers" and Government "sellers." General Ronald W. Yates, Commander Air Force Material Command, Presentation to Air Force Association Symposium, 15 July 1993.

Although texts on competition once talked in terms of a self regulating, orderly marketplace, more recent thinking has recognized that the marketplace is a chaotic phenomenon where small initial changes can quickly self-reinforce in a positive feedback loop.²⁰ A depot, for example, that sets its DBOF prices based on expectation of some amount of competitive "wins" and then loses has created an overhead recovery problem that will have to be fixed by raising the next year's labor rates. Naturally, this will make a depot less competitive, making it more difficult to win, and continue the cycle. Rather than competition helping to determine who are the efficient and inefficient producers, it may well magnify small (even trivial) initial efficiency differences into large ones.

Although defense industry in general is declining, some sectors, such as shipyards, are in precipitous decline. Continued, aggressive use of competition in sectors like this may lead to predatory pricing, cannibalization of workload as losers are forced into bankruptcy, and an eventual monopoly with obvious implications for depot maintenance cost and risk.

Given the existence of specialized commercial maintenance providers, prime systems developers and original equipment manufacturers often do not compete well for depot maintenance workloads. Therefore, if one of the goals of an expanded depot maintenance competition program is to support primes and OEMs, it is likely that without specific focus to the program it will not satisfy that goal.

These and other considerations not enumerated should be factored into the development of a long-term DoD policy on depot maintenance competition. The bottom line is that depot maintenance competition, though of evident benefit, is not a panacea. DoD needs to fully assess all of the potential long-term implications of competition, tailor a program that facilitates its use in ways that make sense for different market sectors, and promulgate policy that results in successful implementation of that program.

PRIVATIZATION

Some industry advocates have expressed the opinion that all depot maintenance workload should be performed by private industry. There are two potential approaches to privatization: closing depots and contracting for the workload or converting existing depots into Government-Owned, Contractor-Operated (GOCO) facilities. The primary issue in considering privatization as an alternative to maintaining DoD organic depots is not whether depot maintenance should be performed by contract or organic sources. Rather, it is whether the private sector can guarantee that depot maintenance will be provided when and where it is required in peacetime, in the periods leading up to armed conflict, in war, and in the periods of reconstitution. To avoid the guarantee issue introduces an element of unknown risk.²¹ This question was previously dealt with in Chapter 3, where the need for an organic CORE capability was revalidated and, by

²⁰M. Mitchell Waldrop, *Complexity: The Emerging Science At the Edge of Order and Chaos*, New York: Simon and Schuster, 1992, pp. 48-50, 118-120, 325-327.

²¹Air Force white paper, *Organic Depot Maintenance Commercialization*, 1 March 1993.

implication, a complete contracting-out solution rejected. In this section, we consider Government Owned, Contractor Operations (GOCOs).

Of the privatization options, Government-Owned, Contractor-Operated (GOCO) depots would provide to DoD the least risk of non responsive support: higher risk would be associated with closing the depots and contracting for the workload, either piecemeal or in its entirety. In a GOCO depot, Government control would be retained and the onboard workforce with its associated skills would presumably remain in place. With the existing facilities and mission equipment in place, a GOCO depot should have the flexibility to surge during contingencies and to expand or downsize, based on workload fluctuations.

Operation of GOCO facilities is not a new concept in DoD; for the most part, they have been associated with production facilities, such as for tanks, aircraft, and ammunition. Tank, aircraft, and similar production facilities traditionally operate under multi-year production contracts and are facilitated with the industrial plant equipment required to produce a specific "line" of products. The products' acquisition strategies and funding levels are generally relatively stable, and modifications to the production contracts are primarily engineering change proposals associated with end items. The GOCO depot, by contrast, would have to accommodate the dynamic nature of world events and the changing priorities of the respective Services.

Ammunition plant fluctuations in quantities and delivery schedules are more representative of what would be expected from a depot operation. Funding levels are not stable and fluctuations in workload are common. Unscheduled program changes occur almost daily--dependent on the changing needs of the Services. Ammunition GOCO plants have been successful in using annual negotiated costs and fixed fee contracts to accommodate fluctuations in schedules and quantities. Hence, with the existing depot infrastructure in place, GOCO maintenance depots would appear to offer a viable privatization alternative. Among the questions that need further analysis, however, are the following:

- Will a GOCO facility need commercial work to smooth out fluctuations in DoD depot maintenance demand? If a GOCO facility performs both commercial and DoD work, how will competing priorities be handled, what are the cost implications, what is the potential for delay and disruption claims?
- Would a GOCO contractor be at a competitive advantage compared to other contractors since the Government invests in upgrading or maintaining facilities?

Organic depots have demonstrated in Desert Shield/Desert Storm and other contingencies that they are responsive to the Services requirements. Although the magnitude of workload to be satisfied is rapidly decreasing, the organic depots have also demonstrated a capability to restructure to accommodate this change. Given that the current solution works, and given that privatization via the GOCO option is also viable, are there compelling reasons to change to GOCO plants? There do not appear to be such reasons at this time. Operating existing depots as GOCO facilities does not, in and of

itself, resolve the excess capacity issue--for either Government or industry.²² Neither is there persuasive evidence that either Government or industry is generally the less expensive source of repair. The fact of the matter, however, is that this matter deserves further study--to answer the questions posed above and to better characterize the tradeoffs involved. The Team recommends such a follow-on study.

THE PRIVATE SEGMENT OF THE INDUSTRIAL BASE

Previous portions of this report have largely focused on the public (i.e., DoD depot maintenance) sector of the industrial base. Where the private sector was discussed it was in the context of the risk and cost tradeoffs between organic and commercial sources of depot maintenance, in the context of private-public competition, or while examining trends in commercial practice. The CORE discussion, specifically, showed that it is necessary to protect organic CORE competencies to control three categories of risk: technology awareness, readiness, and sustainability. But the organic depot maintenance sector does not live in a vacuum. Weapon systems are designed in the public sector, their components are manufactured there, and repair parts are sourced from the private sector. Lack of these *private* competencies now or in the future certainly could impact ability to fight a future war.²³ Just as depot maintenance workload can protect organic CORE, it also has some ability to preserve capabilities in the public sector. It makes sense therefore to understand:

- Depot maintenance's critical needs that are satisfied by the private sector.
- DoD's critical requirements, over and above depot maintenance, that are satisfied by the private sector.
- Private sector sources that are or may be at risk.
- Potential capability of depot maintenance to assure sources of supply--by appropriately targeting workload or by other methods.
- The tradeoffs if an organic CORE competency and an industrial competency vital to defense have competing "claims" on workload to preserve skills and capability.

The Study Team saw these issues as important in the long term rather than short term. Further, understanding the issues listed above is inherently part of the broader topic of Technology and Industrial Base Sector Capability Assessment. The Undersecretary of Defense (Acquisition) has recently directed an integrated assessment of the U.S. technology and industrial base. The purpose of that assessment is to:

²²OSD/Industry Depot Maintenance Roundtable, Op. Cit. It would, however, apparently assist industry in maintaining a skill base.

²³This point was emphasized by industry participants in the OSD/Industry Roundtable Op. Cit.

...respond to the statutory requirements delineated in Chapter 148 of Title 10 U.S.C. This requires the identification and evaluation of essential domestic industrial and technological capabilities and development of a plan to ensure the adequacy and economic viability of the capabilities in these sectors critical to attaining our national security objectives.²⁴

The initial assessment, which is due to be completed by the end of September, 1993, will be structured in terms of the eight categories shown in Table 4-3. Annual updates are required.

Table 4-3. Industrial Analysis Sector Categories

Shipbuilding	Combat Vehicles
Space	Missiles
Electronics/Communications	Aircraft
Ammunition	Combat Support

The sector categories are closely aligned with the broad commodity categories used in depot maintenance planning and the results of the assessment could go a long way toward addressing the issues listed above. Because of this commonality of interest--and because the topic of national industrial policy is much broader than depot maintenance--the Study Team concluded that the most prudent course is to engage with the industrial base capability assessment rather than duplicating it. No attempt was made in this study to undertake such analysis. There is already some working-level engagement with the capability assessment by the depot maintenance community but the amount of engagement may not be adequate. Reexamination of the level of involvement is in order.

SUMMARY

This chapter

- Reviewed relevant trends in commercial practice, particularly regarding centralization and then concluded that, taken as a whole, these trends suggest a caution light for centralization and consolidation. What is needed is a balanced approach that provides a better (i.e., centralized) cross-service mechanism while avoiding dysfunction from over-centralization.
- Concluded that depot management is not well served by the methods currently available to determine how workloads should be consolidated and how much capacity should be retained. Development of a new metric, potentially based on a metaphor other than capacity, should be undertaken--and it should be undertaken soon to support BRAC 95 recommendations.

²⁴Memorandum, David J. Berteau, Assistant Secretary of Defense (Production and Logistics), subj.: Technology and Industrial Base Sector Capability Assessment, June 28, 1993.

- Examined the role of competition, showing that it is achieving the anticipated benefits, and that awards are relatively balanced between private and public sources. The competition program should be continued. But DoD also needs to fully assess the potential long-term implications of competition, tailor a program that facilitates its use in ways that make sense for different market sectors, and promulgate policy that results in successful implementation of that program.
- Discussed privatization of organic depots as Government Owned, Contractor Operated (GOCO) Plants -- concluding that there is no currently apparent reason to change to GOCO operation.
- Considered the broader question of stability of the private segment of the industrial base and proposed engaging with the ongoing industrial base capability assessment rather than duplicating it.

CHAPTER 5

ISSUES AND ALTERNATIVES

REDEFINING THE ISSUES

Chapter 1 presented seven perceived issues. Chapters 2, 3 and 4 highlighted and summarized factors bearing on those issues. It is now possible to refine the perceived issues in light of this new information.

MANAGEMENT STRUCTURE SHORTFALLS

Perceived Issue 1: Has the current depot management structure in the Services resulted in substantial competition, interservicing, reduction of excess capacity, or reduction of unnecessary duplication of capability?

Competition has grown significantly under the current depot maintenance management structure. Beginning with Naval Shipyards and extending to Naval Aviation Depots, public-private competitions resulted in significant efficiency improvements in both Government and private sector operations. The Navy outlined substantial benefits that have resulted from the competition and, as a result, DoD has been successful in extending public-private competition into the Army and Air Force. Following an initial pilot competition program in FY91, public-private competitions were expanded with Congressional approval for both FY92 and FY93. Current estimates are that significant savings will accrue as DoD makes improvements in selecting competition workloads and reduces one-time start-up costs. Competition has been identified as a cornerstone of the actions being taken under the CBP to and is expected to provide \$1.7B of total CBP depot maintenance savings. Public-public competition is also contributing to increased efficiencies in depot maintenance operations. Programs such as the Sacramento Army Depot workload competitions are resulting in substantial benefits to DoD, including leaner depot maintenance operations and innovative maintenance practices and business processes.

The current management structure has also responded well to the requirement to reduce excess capacity. Past actions, as well as planning and programming in place, are resulting in reductions depot personnel levels of some 30% from FY87 level by the end FY94; additionally, over 30% of the major maintenance depots existing in FY87 have been closed or recommended for closure. It is probably unarguable, however, that excess capacity will still exist after closures are completed: all five Air Force Air Logistics Centers still remain (although one, SM-ALC, was recommended for closure by the Air Force but not included in the final SecDef recommendation list) and one Army depot recommended by SecDef for closure (Letterkenny) was not included by the Commission in the BRAC 93 final recommendations to the President. Further, until the eight original depots were identified by DoD for closure in the BRAC 93 process, inability to substantially reduce excess capacity was a legitimate issue.

Unnecessary duplication of capability and limited interservicing remains an issue. Although closing or realigning the depots that have so far been identified will reduce intra-Service duplication, these closings do not fully address the needs to eliminate cross-Service duplication of capability. Nevertheless, the Services have implemented some interservice agreements, examples being Navy repair of Air Force J79 engines and Air Force repair of Navy F110 engines and C-130 aircraft. However, the absolute amount of interservicing remains relatively low. Of total CBP savings, less than 3% is expected to come from interservicing. The existing management structure, methods, and processes are ineffective at controlling inter-Service redundancy.

With regard to the unnecessary duplication of capability and excess capacity, the BRAC 93 Commission was critical of DoD efforts to provide an integrated input supported by cross-Service analysis. The Chairman of the Commission indicated that the Services were not forced to cut overlap among depot maintenance operations. *"There was no knowledgeable, strong, experienced leadership in the Pentagon. There's nobody there to restrain the military leadership from doing what they think is best for their own service... There was no cross-service analysis. They'll never get together until they're forced to."*¹ This perception clearly establishes a significant challenge for whatever depot maintenance management structure is ultimately put in place.

Perceived Issue 2: What degree of additional workload and/or management centralization is needed to enhance the effectiveness and efficiency of DoD depot maintenance? What form should it take?

The Military Departments and Defense Agencies have made important progress toward downsizing their individual depot maintenance programs thus far but this has been accomplished largely through intra-Service adjustments. If, after BRAC 93 closures, there is still excess capacity, the best opportunities for continued capacity adjustment appear to be cross-Service (i.e., by combining workload across Services and then closing unneeded facilities). Because of its nature as an advisory board and its current limited charter, the DDMC, as currently constituted, is not positioned to direct cross-Service programmatic changes and workload siting. Stronger, central control is needed.

Taken as a whole, however, recent experience in the commercial world suggests a yellow light for centralization and consolidation. The Study Team had this caution in mind in framing the alternatives discussed in this chapter. It is evident, as an example, in establishing thresholds, only above which a central authority would get involved. In the final analysis, however, the management alternatives differ markedly in the degree to which they centralize management and control. This was intentional to provide a fairly wide range of choices from which to find a balance between the real need for a better (i.e., centralized) cross-service mechanism and the acknowledged dysfunction that centralization also can bring.

¹Courter James. BRAC Commission Chairman, The Washington Post, July 3, 1993.

DEPOT MAINTENANCE RESPONSIVENESS TO DOD REALITIES

Perceived Issue 3: Is depot maintenance responsive to DoD realities, e.g., force structure and budget reductions?

Depot manpower, depot budget, and the number of depots have decreased at roughly the same rate as supported inventory, total military personnel levels, and activity levels (i.e., approximately 30% reduction since 1987). However, depot closures did not "catch-up" until BRAC 93 and the budget for depot capital investment is actually increasing in the out years rather than declining along with other indicators. The capital budget reversal is an issue that deserves attention; the FY94 situation is being addressed by DoD with an integrated strategy to control and limit capital expenditures. Subsequent year programs should be considered in the context of an integrated DoD depot maintenance capital investment program.

Perceived Issue 4: Is the current depot maintenance management structure unable (or unwilling) to downsize and reduce capacity. Does DoD still, after BRAC 93, have significantly more depot capacity than the Department will need in the future? Does unnecessary duplication exist throughout the individual Service depots -- especially when viewed across Service boundaries?

Through BRAC 88, BRAC 91, BRAC 93 and the CBP 12 maintenance depots have been either closed or identified for closure. The process has been arguably untimely (7 of the 12 depots were not recommended for closure until BRAC 93). Future downsizing (i.e. closing of depots) will still be required and will require cross-Service workloading since there is limited opportunity for a Service to unilaterally further reduce capacity without affecting mission support. Unfortunately, cross-Service cooperation has been limited under the current, narrowly focused, Service/DDMC management structure. Future reductions in force structure may generate more excess capacity. An improved cross-Service management structure -- one that has clear decision authority -- is needed. In addition, because existing capacity measures are not capable of providing the kinds of insights that would simplify cross-Service workload siting and similar actions, development of new metrics (probably based on a metaphor other than capacity) is also needed.

MEETING CBP SAVINGS TARGETS

Perceived Issue 5: Is it likely that the Services will not be able to meet the CBP \$6.4B FY91-FY97 savings target without taking actions that will severely affect readiness and the ability to go to war?

This issue, asserted in the JCS study, should be read in context of that study's concern with cross-Service redundancy and excess capacity. The JCS study was making the point that achieving significant savings without affecting readiness requires reduction in fixed overhead by eliminating unnecessary cross-Service duplication/capacity and closing installations. (Such actions were estimated to produce savings in a broad range of \$2B to \$9B over 10-year period). Although the BRAC 93 depot closings will reduce unnecessary capacity, they do not, by themselves, eliminate unneeded cross-Service

redundancy. Only cross-Service workload siting can do that. As stated above, an improved cross-Service management structure is needed to implement meaningful cross-Service cooperation and, hence, achieve significant cross-Service savings.

With regard to specific CBP planned savings, it may be necessary to recast savings projections in view of significant ongoing and future workload reductions. The workloads upon which savings were predicated were projected based on the FY91 President's budget and the planning done to support that budget. It is possible that to coincide with valid force structure projections (that even now are still being developed) savings computations will need to be altered. There is no reason to believe, however, that such recasting of the savings will result in Service actions that would directly impact readiness or limit war fighting capabilities.

ORGANIC CAPABILITY REQUIREMENTS - CORE

Perceived Issue 6: Is organic depot capability perhaps not needed? Should all requirements (or at least more than at present) be satisfied by commercial sources? Is CORE poorly defined? Are existing definitions invalid? Is current CORE capacity too large?

Chapter 3 provided as extensive and integrated a review of CORE as has been undertaken in recent years. This review demonstrated that an organic capability is needed to control risk and cost. In place of the existing Service-unique definitions and sizing methods, the CORE review also proposed a joint Service CORE concept and standard algorithm for Service application. It is the opinion of the Study Team that the revised definition and algorithm will result in a significantly smaller CORE. Pending implementation of the new definition and algorithm, this is no longer an issue.

PRIVATE SECTOR INDUSTRIAL BASE CONCERNS

Perceived Issue 7: Is the stability of the defense industrial base being increasingly threatened because Government-run Service maintenance depots are taking workload out of industry? Alternatively, should depot maintenance be used to protect the health of the U.S. Industrial Base?

Addressing the first part of this issue first, since the mid-1980's the amount of depot maintenance work performed by private industry has stayed within a few percentage points of 35%. In FY92, the fraction of depot workload performed by industry was \$4.7B, or 34% of the total. Of this, \$269M was won in competition with the public sector. The projection for FY93 is that over 32% of depot maintenance workload will be done by contract sources. Although various public-private workload assignment options have been and are being considered, there is no DoD-wide trend of workload moving either into or out of the private sector through competition.

Whether or not depot maintenance should be used to protect the health of the U.S. industrial base, it actually has limited leverage to do so. Total DoD expenditures in the industrial base in FY97 will probably be in the range of about \$80B to \$90B. The

depot maintenance expenditures in the same year are currently projected to be about \$13B (then year dollars). Since typically it could be estimated that about \$9B of this amount will be in the private sector (as contract maintenance or purchased material and services) or committed to CORE, something on the order of \$4B may be available to address industrial base considerations. Annual sales in the industrial sector are many times this size (in 1991, for instance, aerospace sales were \$124.1B, motor vehicle sales \$268.7B, and electronic sales \$139B).²

Since depot maintenance dollars are small compared to the industrial base, the issue is how to target the limited available leverage in a way that helps maintain vital industrial sources. This is a problem larger than depot maintenance because it must be addressed in concert with the acquisition community and other affected constituencies. In accomplishing such targeting, should that ultimately prove to be the desire of DoD, it is apparent that an improved cross-Service management structure would aid considerably in developing a coordinated approach.

ACTIONABLE ISSUES:

In summary, there are four actionable issues that emerge from the above synthesis:

- The capital budget reversal (increasing when other indicators are decreasing) may be an issue that deserves attention. In fact, the underlying issue is long-term integrated management of depot maintenance capital investments.
- There is presently no coordinated approach for employing limited depot maintenance leverage to maintain vital industrial sources. Effective employment will require cross-service coordination in both the depot maintenance and acquisition communities.
- Unnecessary duplication of capability and limited interservicing remain problems. An improved cross-Service management structure is needed to implement meaningful cross-Service cooperation and achieve significant savings.
- The requirement to continue to downsize the overall organic depot maintenance infrastructure, in terms of capacity, remains, i.e., the need to eliminate excess capacity still exists. Given the recent relative success in intra-Service downsizing, near-term future requirements for capacity adjustment, e.g., BRAC 95, demand an integrated (cross-Service) management perspective. Further, cross-Service workload management would be much enhanced by a new analytic basis (potentially founded on a metaphor other than capacity) for workload consolidation, retention of intentional redundancy, and related decisions.

The first issue, capital budgeting, is within the capability of the current DDMC and Services' depot maintenance management structure to resolve. The FY94 situation is being addressed by DoD with a special program to control and limit costs. Integrated capital budgeting should be a consideration in the ultimate selection of a management

²Source: World Almanac.

alternative for depot maintenance. The second issue, industrial base considerations, as discussed in Chapter 4, is outside the scope of this study and needs to be addressed in the context of Chapter 148, Title 10 U.S.C. industrial base assessments. The balance of this chapter is concerned with framing and evaluating depot maintenance management alternatives of adequate scope to address both the third and fourth issues (unnecessary duplication of capability, excess capacity, and integrated management) as well as other significant criteria. We first discuss the management alternatives generated by the Study Team, then describe the criteria and process used to evaluate the alternatives, and follow with the evaluation results.

MANAGEMENT ALTERNATIVES

ASSUMPTIONS AND APPROACH

In developing the depot maintenance management alternatives, a number of key supporting assumptions were made. The assumptions, which also influenced the development of evaluation criteria, are characterized generally in the areas of force structure and activity levels, budget, sources and constraints on economy of scale and scope, and ability to obtain revisions in public laws. The assumptions included:

Force Structure and Activity Levels. The notional force, discussed earlier in Chapter 2, is the assumed baseline.

Budget. Budget available for depot maintenance is assumed to continue to decline relative to changes in force structure and activity levels (but at a currently undetermined ratio).

Economy of Scope and Scale. Consistent with experience of industry and recent management theory, economies of scope and scale do not continue to accrue in proportion to centralization but are limited, particularly by difficulties associated with lateral communication as levels of bureaucracy are added. Neither a completely flat organization nor a highly centralized structure is an ideal solution.

Revisions to Public Laws. The Department of Defense will seek appropriate changes in existing law if the desired alternative requires such changes for its implementation.³

The approach used to evaluate the alternatives included development of alternative descriptions, evaluation criteria, an evaluation instrument and a methodology for analyzing the results. Key organizations were tasked to evaluate the various alternatives both quantitatively and qualitatively using the evaluation instrument. The remainder of this chapter addresses the evaluation process and results.

³See Appendix E.

CRITERIA FOR EVALUATING ALTERNATIVES

Concurrent with developing the initial definitions of the management alternatives, the criteria for evaluating the alternatives were developed and refined. The final criteria, which formed the basis for the evaluation instrument, are a composite of recommendations by the Service and organizational representatives to the Study Team. The criteria used was defined into five broad areas as shown in Table 5-1.

Table 5-1. Criteria Areas and Second-Level Sub-Criteria

CRITERIA EVALUATION AREA	AMPLIFICATION OF CRITERIA EVALUATION AREA
Military Responsiveness -- Contingency Response	<ul style="list-style-type: none"> • Provides combat customer linkage • Supports contingency op tempo (sustainability) • Promotes inter-Service coordination of industrial support (i.e., depot maintenance) requirements • Integrates workload priorities and cross-Servicing of assets • Retains individual Service responsibility for CORE
Military Responsiveness -- Peacetime Readiness	<ul style="list-style-type: none"> • Supports readiness -- responsive to Service readiness requirements • Promotes integrated management <ul style="list-style-type: none"> - DoD-OSD-Services-Depots - Interface across levels of maintenance (e.g., organizational and intermediate) - Throughout life cycle • Retains closeness to customer • Provides for effective depot maintenance program advocacy
Efficiency	<ul style="list-style-type: none"> • Customer costs • Infrastructure costs • Economy of scale • Economy of scope -- synergy • Promotes competition • Costs of needed contingency capacity • Standardizes business practices
Authority And Responsibility For ...	<ul style="list-style-type: none"> • Interservicing • Consolidation • Depot maintenance management overhead • Capacity (downsizing, new capabilities, needed contingency capacity, and work force flexibility) • Contributing to health of commercial industrial base
Implementation	<ul style="list-style-type: none"> • Acceptability to Services, OSD/ICS, Congress, and other internal and external constituencies • Costs (one-time costs - monetary or demands on internal resources, such as system disruption; potential savings) • Title 10 considerations
BRAC Interface	<ul style="list-style-type: none"> • BRAC-friendliness -- uniform decision approach • Timeliness for 1995 submittal

Table 5-1 also shows the second-level sub-criteria in each of the broad criteria areas. Because it was believed that ever-increasing levels of detail would detract from

rather than assist in evaluating alternatives (the proverbial losing sight of the forest for the trees problem), no attempt was made to develop a third or fourth level. The criteria as shown in the table are in descending order of value. Military Responsiveness is the most important factor, equal to all other criteria combined. Efficiency and Clear Authority and Responsibility for key management goals are next after Military Responsiveness. The final two criteria areas, Implementation and BRAC Interface are slightly less important than the previous two criteria areas and are considered equal to each other. Implementation was, however, used as a sensitivity analysis variable as described later in this chapter. The relative weights used for baseline evaluation analysis were:

- Military Responsiveness -- Contingency Response 25 %
- Military Responsiveness -- Peacetime Readiness 25 %
- Efficiency 15 %
- Authority And Responsibility For ... 15 %
- BRAC Interface 10 %
- Implementation 10 %.

To evaluate the alternatives against the criteria, the five-point scale shown in Figure 5-1 was adopted. This scale ranges from adequate to superior. As is discussed in the section on the alternatives, each of the alternatives was deliberately constructed in such a way as to make it as creditable a contender as possible and, in any case, at least adequate to meet the requirements of the criteria area. If an alternative was not able to be framed in a way that made it at least adequate, then it did not make the list.

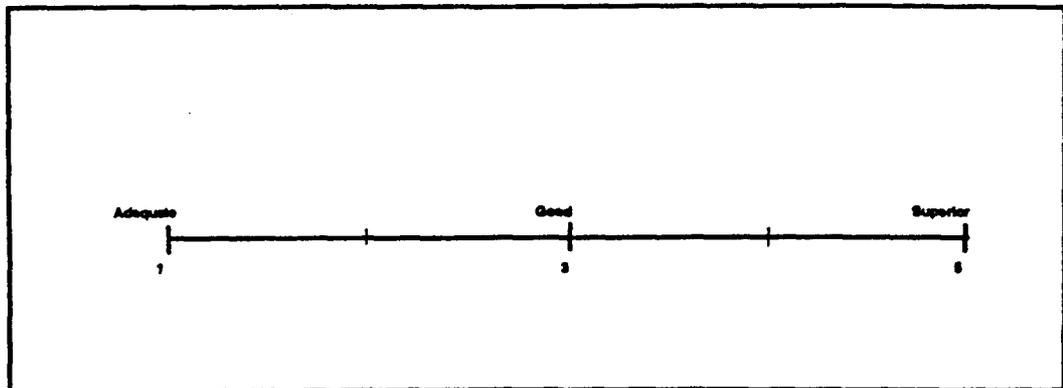


Figure 5-1. Criteria Evaluation Scale

THE MANAGEMENT ALTERNATIVES

Seven initial management alternatives were generated for study, several of which were variants with minor differences. After continuing analysis and review by the team, the number of alternatives to be formally evaluated was reduced to the four shown in Table 5-2. Appendix F provides a detailed description of each alternative, diagrams depicting how they are organized, their functionality, and the reasons that would motivate choosing each alternative. Each of the alternatives differs in terms of relationships to Service headquarters, combatant commands, material commands, system managers, item managers, and others from the standpoint of functions assumed and not assumed. Since

the differences are key to how the alternatives work Appendix F also contains a table outlining these relationships. In general, each of these alternatives is staffed, as may be necessary, by absorbing existing positions in the Services (and assuming the related functions). A quick overview of each alternative is presented below.

Table 5-2. Management Alternatives

Title	Leadership
Empowered Defense Depot Maintenance Council (DDMC)	Deputy Undersecretary of Defense (Logistics) chairs; Services, JCS and DLA participate; decision support concept implemented; Board of Directors available to address issues that DDMC cannot resolve
Executive Service Management with the Empowered Defense Depot Maintenance Council	<p>Executives for broad, functionally-related system and platform lines are three-star flag officers.</p> <p>Board of advisors comprising senior logistics personnel of each Service provides oversight</p> <p>Deputy Undersecretary of Defense (Logistics) chairs DDMC which provides integrated management</p>
Joint Depot Maintenance Command (JDMC)	<p>Commander in Chief of Depot Maintenance (CINCDM) is a four-star combatant commander, reports to SecDef through the Chairman of the Joint Chiefs of Staff.</p> <p>Functional component commander for ship and submarine systems is a Navy officer. Functional component commander for ground combat systems rotates between Army and Marine Corps. For Aviation and Space Systems, component command rotates among Air Force, Army, and Navy.</p>
Defense Depot Maintenance Agency (DMA)	<p>Agency Director is a three-star flag officer or SES equivalent</p> <p>Each broad, functionally-related platform/system line (e.g., land, sea, aeronautical) is responsibility of two-star (or SES equivalent) System Executive.</p>

Empowered Defense Depot Maintenance Council

Unlike the current Defense Depot Maintenance Council (DDMC), the empowered DDMC will have well defined decision making authority in specific areas of responsibility. The empowered DDMC addresses the need to provide integrated management of a number of key elements within the DoD depot maintenance program. Through broadening the charter of the DDMC to go beyond effective implementation of the Defense Management Report, the DDMC is granted the perspective necessary to deal across the entire spectrum of depot maintenance operations. Institutionalizing the

decision making authority in the DDMC provides a viable way to make the necessary decisions that provide control of the integrated program. The DDMC provides centralized management (for a limited number of program and decision variables) and decentralized program execution (through an already established infrastructure that is fully integrated with the Service's combat and weapon systems management concepts).

The empowered DDMC provides oversight of the entire breadth of the Department's depot maintenance operations, develops coherent DoD-wide policies, makes decisions in key areas, and, in general, exercises the authority of the Secretary of Defense to provide effective, integrated depot maintenance management. A decision support process would be developed to provide consistent decision support information, highlight necessary decisions, and elevate decisions to appropriate levels. The empowered DDMC will function as the decision maker and management integrator in DoD depot maintenance operations areas such as:

- Industrial support policy for depot maintenance
- Consolidated planning
- Coordinated resourcing
- Standardized business practices
- Integrated capacity management to include downsizing

The Components retain operational control of actual depot maintenance operations, organic and contract, and are responsible for implementation of approved business plans.

The chair of the DDMC will be the incumbent in the newly established position of the DUSD(L). The membership of the DDMC will include the DUSD(L), and a designated representative from the Army, Navy, Air Force, Marine Corps, JCS and DLA. The members will vote on issues and programs raised to the DDMC level; the chair will promulgate decisions through the appropriate means, e.g., decision memoranda and policy statements. The members (less JCS and DLA as agreed to subsequent to alternative development) will each have one equal vote and a simple majority rule will decide all issues. Those decisions requiring additional authority or those issues that cannot be resolved will be elevated to the Board of Directors (comprised of, for example the USD(A) and the Service Under Secretaries), the USD(A) or to the Secretary or Deputy Secretary of Defense, as may be appropriate. The empowered DDMC will be supported by a management support activity (MSA) attached to OSD.

Executive Service Depot Maintenance Management with an Empowered DDMC

Under this concept an Executive Service (Agent) from among the Military Services would be established for major categories of DoD weapon systems and equipment depot maintenance. For example, the USN would be the Executive Service for all ships and water craft, the USAF for all fixed wing aviation, the USMC for amphibious equipment, and the MAR program and the USA for all ground equipment. The Executive Service would assume control over all of the DBOF depot maintenance business area operations and resources at the facilities assigned to that category. Overlaying the Executive Service structure would be the Empowered DDMC described

above. The DDMC would provide the integrated management to bring the Executive Services together and to ensure that resources and operations are effectively managed across from a DoD-wide perspective.

The Military Services maintain control over their own facilities, mission and depot maintenance requirements, weapon systems management and inventory control points. The Executive Service would pursue consolidations of similar workloads to eliminate unnecessary redundant capability and excess capacity. Consolidation studies would be managed by the Executive Service, while the Service owning the depot facilities would perform analysis on depot closures and realignments. The Executive Service would, however, be responsible for making depot closure recommendations.

The Executive Service will make Source of Repair decisions for the assigned category of depot maintenance, control capital investments and divestitures within the category depots, establish performance measures, promulgate guidance and policy for operations and budgeting, and establish the necessary infrastructure that ensures customer support for peace time operations and contingency needs. To aid in accomplishing these objectives, the Executive Service will have decision authority for all DBOF depot maintenance business area resources (personnel, equipment and facilities) at depot assigned. The DDMC will retain decision making authority above set thresholds in key management interest areas.

Joint Depot Maintenance Command

The Joint Depot Maintenance Command (JDMC) is a joint command somewhat analogous to United States Transportation Command (TRANSCOM). While it would not "own" the personnel or physical plants of depots, it would control their capability assignments, priorities, capital investments (including MILCON), source of repair decisions and depot maintenance business area resourcing in DBOF budgets. Under the CINCDM would be a Deputy for Joint Requirements Integration and staff who would provide broad policy and advise the CINC on capability assignments, priorities, investments, and budgets. As a CINC, CINCDM would have a military peer relationship with combatant CINCs. His service component commanders would provide communication loops to and from service authorities.

Within the JDMC, component commanders from each Service would be responsible for managing the depots and depot maintenance of their Service. The commanders would be assigned to, for example, five groups:

- Ground Warfare Systems Depot Command
- Maritime Air Warfare Systems Depot Command
- Sea Warfare Systems Depot Command
- Air Warfare Systems Depot Command
- Amphibious Warfare Systems Depot Command

The Service depots would then be organized under these commands. Although the JDMC would allow each Service to retain organic depots, work would be assigned to all depots based on joint decisions and the CINC's priorities, not simply by sending equipment to the depot's of the equipment owning Service. The JDMC would make

integrated source of repair and workload assignments for each system and component based on a multitude of management and military necessity considerations. Thresholds would be established, below which the Services (component commanders) would have decision-making authority. The Deputy for Joint Requirements Integration would integrate depot maintenance requirements and planning to accomplish these requirements.

Defense Depot Maintenance Agency

The Director of the Defense Depot Maintenance Agency (DMA) reports to the Under Secretary of Defense (Acquisition and Technology) as a peer to the Defense Logistics Agency and will assume ownership of all existing depots. The director will be responsible for developing broad goals, policy, and direction. He or she will directly make mission system, major technology group, and major subsystem workload assignments among depots by centrally controlling assignments above certain thresholds. He or she will establish standard business rules for making assignments below the thresholds. The director (in conjunction with program executive officers and program managers) will make source of repair decisions. He or she will recommend to the DUSD(L) and USD(Acquisition and Technology) depots for reorganization and/or closure.

The agency will be organized along broad functionally-related combat platform and system lines (e.g., aeronautical, sea, ground, communications). Each broad platform and system line will be the responsibility of a System Executive (SE), nominally an O-8 or SES equivalent. Additionally, there will be an Executive Officer for Business Processes and Methods. Where more than one service has a vested interest in a platform/system line, the SE assignments will rotate among the affected services.

EVALUATION OF THE ALTERNATIVES

This section contains four principal subsections. The first subsection provides and summarizes the evaluation scoring results, outlining the overall scores assigned by OSD, JCS, and the Services (hereafter referred to as organizations) to each of the four depot maintenance management alternatives. The next subsection describes and provides the results of sensitivity analysis of the evaluations. Two sensitivity scenarios are used to test the stability of evaluation results with regard to evaluation weights. A third subsection presents the preference assessment of each organization with regard to which alternative was most desirable and least desirable, from a complete alternative perspective. The final subsection, composite results, compares evaluation scoring, sensitivity analysis, and preference assessments.

BASELINE EVALUATION SCORING RESULTS

Figure 5-2 shows the overall baseline evaluation score for each of the four depot maintenance management alternatives. In this figure, 30 constitutes a perfect score (i.e., each organization would have awarded the alternative a score of 5 for each of the six criteria evaluation areas) and 6 is the lowest possible score (i.e., each organization would have awarded the alternative a score of 1 for each of the six criteria evaluation areas).

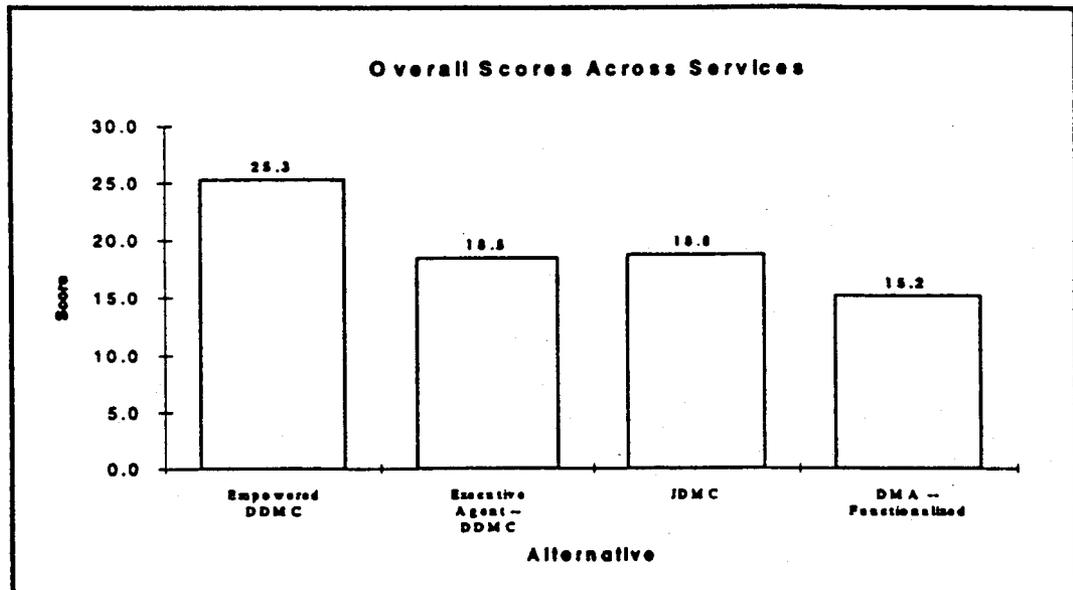


Figure 5-2. Scores by Alternative

Outlined below are some key observations regarding the baseline evaluations. They are presented in terms of each management alternative.

Empowered DDMC

- The empowered DDMC received a score of 25.3, which made it the highest overall scored alternative across the organizations.
- It also was the highest scored alternative by OSD, Air Force, Army, Navy, and Marine Corps, and was scored second highest by JCS.

Executive Agent -- DDMC

- Executive Agent -- DDMC received a score of 18.5, which virtually tied it with the JDMC as the second highest overall scored alternative across the organizations.
- It was the lowest scored alternative by the Navy and Marine Corps and the second lowest scored alternative by JCS, although it was scored second highest by OSD, Air Force and Army.

JDMC

- JDMC received a score of 18.8, which made it the second highest overall scored alternative across the organizations, but in a virtual tie with the Executive Agent - DDMC alternative.
- JDMC was the highest scored alternative by the JCS but the lowest scored alternative by OSD.

DMA -- Functionalized

- DMA -- Functionalized received a score of 15.2, which made it the lowest overall scored alternative across the organizations.
- It was also the lowest scored alternative by the JCS, Air Force, and Army.

SENSITIVITY ANALYSIS RESULTS

In order to test the stability of evaluation results with regard to evaluation weights, two sensitivity scenarios were developed -- a higher weight for the implementation criterion and weights of zero for both military responsiveness criteria. The original, baseline, weights used to quantify the relative importance of the criteria were :

Sensitivity Scenario #1 was developed in recognition of the potential importance of implementation to the ultimate success and acceptance of any depot maintenance management alternative. In this scenario, the relative weight for implementation was increased, placing implementation on a par with each of the military responsiveness areas. Other criteria were re-weighted based on this increase.

Sensitivity Scenario #2 was developed to isolate military responsiveness from the management components of the criteria evaluation areas, and thus focus solely on a management component of the four depot maintenance management alternatives. In this scenario, the relative weights for the two military responsiveness criteria evaluation areas were set to zero and the remaining criteria re-weighted to reflect this change. As described below, for each management alternative, the top-level results were not particularly sensitive to a change in the criterion weights. The relative weights for the two sensitivity scenarios are shown below.

	Scenario #1	Scenario #2
• Military Responsiveness -- Contingency Response	22%	0%
• Military Responsiveness -- Peacetime Readiness	22%	0%
• Efficiency	13%	30%
• Authority And Responsibility For ...	13%	30%
• BRAC Interface	9%	20%
• Implementation	22%	20%

Empowered DDMC

- Empowered DDMC received the highest overall score across organizations under both sensitivity scenarios.
- Sensitivity analysis did not produce any changes in the relative rank of Empowered DDMC, either across organizations or for any individual organization, except for the JCS evaluation under Scenario #2 where its rank dropped from second to third place.
- Empowered DDMC consistently received overall scores around 25 out of a possible 30. The other alternatives consistently received scores in the range of 14 to 18. This demonstrates that the high ranking of the Empowered DDMC alternative is not affected by the choice of criteria relative weights.

Executive Agent -- DDMC

- Empowered DDMC received the highest overall score across organizations under both sensitivity scenarios.
- Sensitivity analysis produced change in the relative rank of Executive Agent -- DDMC for only one organization -- Navy.

JDMC

- JDMC, which was ranked second under the baseline and Scenario #1, but dropped in rank to fourth place under Scenario #2.
- This drop in rank reflects the sensitivity of JDMC in this evaluation to the relative weight of the military responsiveness criteria.

DMA -- Functionalized

- DMA -- Functionalized received the lowest overall score across organizations under the baseline and Scenario #1, but rose in rank to third under Scenario #2.
- This rise in rank reflects the sensitivity of DMA -- Functionalized in this evaluation to the relative weight of the military responsiveness criteria.

PREFERENCE ASSESSMENT RESULTS

As part of the evaluation, each organization was asked to provide a preference assessment of each alternative, as viewed in its entirety. This assessment was made by indicating their most desirable and least desirable depot maintenance management alternatives - an overall preference irrespective of individual criteria analysis. The

quantitative results are shown in Figure 5-3. In summary, they show the preferences outlined below.

- The Empowered DDMC was judged most desirable by OSD, Air Force, Army, Navy, and Marine Corps
- The JDMC was judged most desirable by the JCS
- The Executive Agent -- DDMC was judged least desirable by the Navy and the Marine Corps
- The DMA -- Functionalized was judged least desirable by the JCS, the Air Force, and the Army.
- The JDMC was judged least desirable by the OSD.

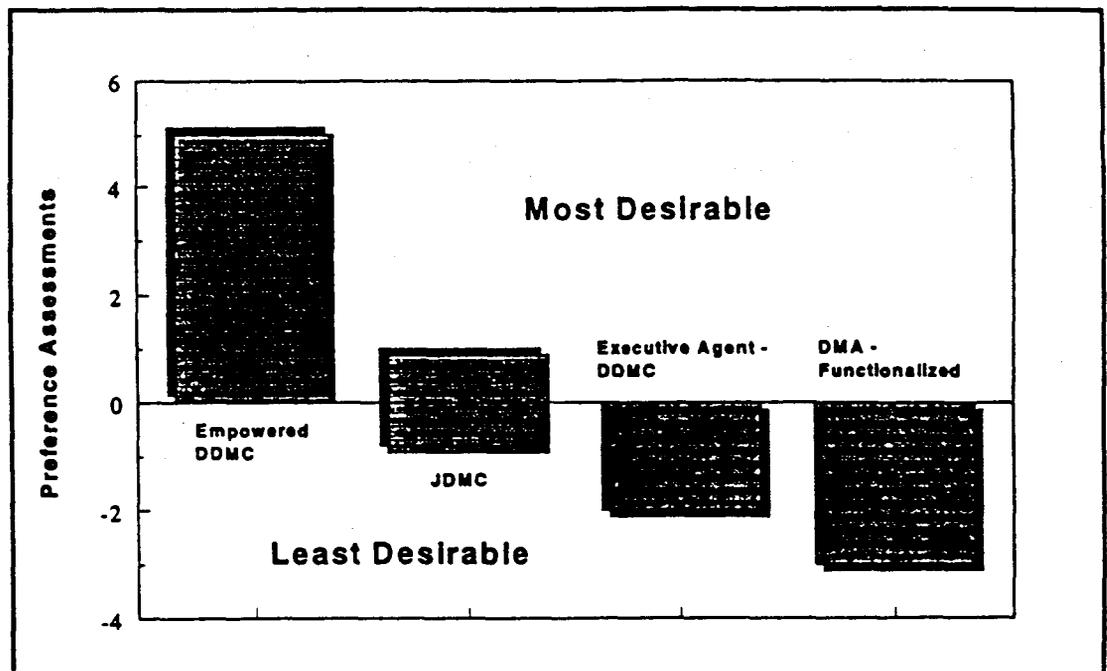


Figure 5-3. Preference Assessment Results

COMPOSITE RESULTS

Figure 5-4, below, shows the rankings of each depot maintenance management alternative as determined under the baseline, two sensitivity scenarios, and preference assessments. As shown in the figure:

- The Empowered DDMC alternative ranked first under the baseline scoring, both sensitivity analyses, and the preference assessment. Only JCS failed to rank Empowered DDMC first, ranking it second under the baseline and sensitivity scenario 1 and third under sensitivity scenario 2.

- The Executive Agent -- DDMC alternative was ranked third under the baseline scoring, Scenario #1 and the preference assessment but ranked second under Scenario #2.
- The JDMC alternative was ranked second under the baseline scoring, Scenario #1 and the preference assessment but ranked fourth under Scenario #2.
- The DMA -- Functionalized alternative was ranked fourth under the baseline scoring, Scenario #1 and the preference assessment but ranked third under Scenario #2.

ALTERNATIVE	ORGANIZATION	ALTERNATIVE RANKING BASED ON			
		BASILINE SCORING	WEIGHT IMPLEMENTATION SCENARIO	MANAGEMENT FOCUS SCENARIO	PREFERENCE ASSESSMENT
Empowered DDMC	OSD	1	1	1	1
	JCS	2	2	3	N/A
	Air Force	1	1	1	1
	Army	1	1	1	1
	Navy	1	1	1	1
	Marine Corps	1	1	1	1
	Overall	1	1	1	1
Executive Agent -- DDMC	OSD	2	2	2	N/A
	JCS	3	3	3	N/A
	Air Force	2	2	2	N/A
	Army	2	2	2	N/A
	Navy	4	4	2	4
	Marine Corps	4	4	4	4
	Overall	3	3	2	3
JDMC	OSD	4	4	4	4
	JCS	1	1	1	1
	Air Force	3	3	4	N/A
	Army	3	3	4	N/A
	Navy	2	2	2	N/A
	Marine Corps	2	2	2	N/A
	Overall	2	2	4	2
DMA -- Functionalized	OSD	3	3	3	N/A
	JCS	4	4	2	4
	Air Force	4	4	3	4
	Army	4	4	3	4
	Navy	3	3	2	N/A
	Marine Corps	3	3	3	N/A
	Overall	4	4	3	4

Figure 5-4. Composite Findings

• N/A indicates that the alternative was not ranked either most or least desirable by the organization.

Each evaluating organization provided descriptive comments and rationale relevant to their assessments of the management alternatives. The results of the evaluations clearly indicate a strong broad-based support for the Empowered DDMC alternative. Organizations selecting the Empowered DDMC based their decision and evaluations upon characteristics such as are outlined below.

- Strikes a proper and effective balance between decentralized operations and centralized management. Provides an integrated perspective of DoD-wide operations and a decision support process to make the necessary decisions that affect the entire depot maintenance community.
- Provides Service Secretaries with maximum control over depot maintenance resources, maintenance requirements, program managers, item managers, and inventory control points
- Maintains a logistics capability to ensure a ready and controlled source of technical competence and resources necessary to respond to mobilization, contingency and other emergencies
- Maintains the interface between war fighters and the depot maintenance communities and assures responsiveness to the war fighting community
- Utilizes existing elements already in place to implement the alternative, i.e., organizational structures, communications links, and operating procedures
- Facilitates rapid and effective implementation - least disruptive and most economical
- Promotes competition and flexibility.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

This study had several objectives. The principal purpose was to implement the Secretary of Defense's direction to aggressively pursue reductions in excess depot capacity by assessing the merits of establishing an Executive Agent, Joint Command, or Defense Agency for depot maintenance activities and examining possible further consolidation of depot activities and competitive bidding.

Chapter 1 provided the basic background for the study by developing the historical justification for depot maintenance, describing the post-cold war shift in focus to depot maintenance efficiency, and summarizing the current posture. To satisfy the Secretary's direction, it was first necessary to identify and come to grips with the major issues facing depot maintenance management. Seven potential issues are identified in Chapter 1.

BACKGROUND RESEARCH

In order to study the issues, the Study Team compared overall depot sizing to force structure and other key indicators, re-examined the concept and quantification of CORE, examined recent changes in the use of competition, captured depot-related lessons from Desert Shield/Desert Storm, researched relevant trends in commercial practice, and took a hard look at the relationship between organic depots and the industrial sector. Among the most important results were the following:

- Inability to reduce excess depot capacity is unsubstantiated. Actions underway will result in a depot maintenance personnel end strength some 30% below FY87 levels by the end FY94. Over 30% of the major maintenance depots existing in FY87 have been closed or recommended for closure. Overall, depot personnel, budget, and the number of depots have decreased at roughly the same rate as supported inventory, total military personnel levels, and activity levels. It is probably unarguable, however, that excess capacity will still exist after closures are completed: one Air Force Air Logistics Center was initially recommended for closure but remains open as does one Army depot recommended for closure. Future force structure reductions are also in the offering and may create additional excess capacity. The budget for depot capital investment is increasing in the out years rather than declining along with other indicators.
- Unnecessary duplication of capability and limited interservicing remain issues. Although closing or realigning the depots that have so far been identified will reduce intra-Service duplication, it does little for cross-Service duplication. Of

total Corporate Business Plan savings, less than 3% is expected to come from interservicing. The existing management structure, methods, and processes are not effective at controlling inter-Service redundancy. With regard to the unnecessary duplication of capability and excess capacity, the BRAC 93 Commission was critical of DoD efforts to provide an integrated input supported by cross-Service analysis.

- Future downsizing (i.e. closing and realignment of depots) will be required and will require cross-Service workload assignment since there is limited remaining opportunity for the Services to unilaterally reduce capacity without affecting mission support. Unfortunately, cross-Service cooperation has proved difficult under the current, narrowly focused, Service/DDMC management structure. An improved cross-Service management structure -- one that has clear decision authority -- is needed.
- The concept of organic CORE depot maintenance capability was revalidated. Further, the Study Team proposed a new, multi-Service, framework including a common sizing algorithm for Service application.
- Competition is achieving the anticipated benefits. Public-private competition awards are relatively well balanced between private and public sources. The competition program, which has proved to be a powerful motivating force, should obviously be continued.
- Whether or not depot maintenance should be used to protect the health of the U.S. industrial base, it has limited leverage to do so. Depot maintenance expenditures in FY97 are projected to be about \$13B (then year \$). Since approximately \$9B will already be spent in the private sector or committed to CORE, something on the order of \$4B may be available to address industrial base considerations. This figure is under 1% of total aerospace, motor vehicle, and electronics sales. Because discretionary depot maintenance dollars are small compared to the industrial base, any use of depot maintenance workload to assure its health will require careful targeting.
- Successful commercial firms have concluded that an overemphasis on centralized control is dysfunctional because of inherent conservatism and unavoidable myopia of the "rational" analysis underlying centralized decisions. Additionally, intentional internal redundancy as a risk mitigation method has merit. Taken as a whole, these trends suggest a yellow light for centralization and consolidation.

There were four actionable issues that emerged from preliminary study. First, the capital budget reversal (increasing when other indicators are decreasing), or at least integrated management of capital investment for depot maintenance, is an issue that deserves attention. Second, there is presently no coordinated approach for employing limited depot maintenance leverage to maintain vital industrial sources. Effective employment will require cross-Service coordination in both the depot maintenance and acquisition communities. Third, unnecessary duplication of capability, excess capacity, and limited interservicing remain problems. They are made more difficult because of limited cross-Service control of depot maintenance business decisions and because

existing capacity measures are not capable of providing the insights that would facilitate resolution. Fourth (and partly derived from the third), some additional management centralization is needed to enhance the effectiveness and efficiency of depot maintenance. Indeed, a common thread throughout the study has been the need for a new management structure to provide cross-Service coordination of capability, capacity, and related issues.

The first actionable issue, capital budgeting, is within the capability of the current DDMC and Services' depot maintenance management structure to resolve. Indeed, DoD is taking steps to provide integrated management of the FY94 depot maintenance capital investment program and views the revised management structure as the long-term integrated manager for this area of resources. The second, as discussed in Chapter 4, is outside the scope of this study and needs to be addressed in the context of Chapter 148, Title 10 U.S.C. industrial base assessments. The third issue was partly addressed through the management alternatives presented in this study—*all of the alternatives were intended to make cross-Service control simpler*. The concept of a new analytic basis for making workload consolidation, capability, and related decisions, however, needs additional research beyond what was possible in this study. Framing and evaluating alternative management structures were major tasks for the study and are addressed below.

ALTERNATIVE MANAGEMENT STRUCTURES

The Study Team approached the subject of alternative management structures by establishing criteria for evaluating alternatives and developing an evaluation methodology. It then generated a set of alternatives, all of which were at least satisfactory in the context of the evaluation criteria. The alternatives were:

- An Empowered Defense Depot Maintenance Council
- Executive Service Management coupled with an Empowered Defense Depot Maintenance Council
- A Joint Depot Maintenance Command
- A Defense Depot Maintenance Agency

The Services, JCS, and OSD then evaluated the alternatives. There was strong support for an Empowered DDMC.

RECOMMENDATIONS

The Study Team recommends that DoD implement the Empowered DDMC. This alternative is embraced by the Services and has the necessary clout to provide oversight of the Department's depot maintenance operations, develop coherent DoD-wide policies, make decisions in key areas, and, in general, exercise the authority of the Secretary of Defense to provide effective, integrated depot maintenance management. The pacing requirement for implementation is BRAC 95. DoD recommendations are due to the Commission by January 1995, less than 18 months away. Because it will take time

for the Empowered DDMC to achieve full functionality, implementation now is needed to develop an integrated input supported by cross-Service analysis.

Additionally, the Study Team makes the following recommendations:

- Promulgate as formal policy the CORE definition and sizing algorithm developed in Chapter 3. The justification for organic CORE depot maintenance has been revalidated and its relationship to the other segments that make up the depot maintenance industrial base is understood.
- Develop a new analytic basis (probably based on a metaphor other than capacity) for making workload consolidation, retention of redundant capability, and related decisions. Similar to the approach taken in Chapter 3 of this report, any such undertaking needs first and foremost to have a coherent foundation. Development should begin soon to have any likelihood of affecting BRAC 95 recommendations.
- Continue the competition program (private-private, public-public, and public-private). Evidence so far is that it is producing beneficial results - costs can be reduced, efficiency improved and innovative maintenance approaches developed. Although level-playing-field considerations will continue to deserve attention in public-private competition, the empirical results thus far indicate the process is essentially fair: there has not been a decisive shift of workload from the public sector to private or in the reverse direction.
- Do not at this time convert depot operations to Government owned, contractor operated (GOCO) plants. Although GOCO depots appear viable the Department needs a better understanding of the actual viability and the advantage to be gained by making the change. Recommend further study of this concept.
- Engage with the ongoing Undersecretary of Defense (Acquisition)-sponsored integrated assessment of the U.S. technology and industrial base to determine how and if depot maintenance workload should be used to preserve capabilities in the public sector.

APPENDIX A

TERMS OF REFERENCE



PRODUCTION AND
LOGISTICS

ASSISTANT SECRETARY OF DEFENSE

May 21, 1993

TERMS OF REFERENCE
FOR
DEPOT MAINTENANCE INFRASTRUCTURE REVIEW
AND
STUDY OF OPTIONS FOR INTEGRATED MANAGEMENT
DOD DEPOT MAINTENANCE ACTIVITIES

I. BACKGROUND

On April 15, 1993, the Secretary of Defense directed that the office of the Assistant Secretary of Defense (P&L) examine alternatives for management and operation of the Department's depot-level maintenance activities. In doing so, the Secretary stated:

"OSD, assisted by the Service Secretaries and the Joint Staff, will assess the merits of establishing an Executive Agent, Joint Command, or Defense Agency for depot maintenance activities. The study will also examine possible further consolidation of depot activities and competitive bidding. The Department should aggressively pursue reductions in excess depot capacity."

In addition the Secretary has directed a review of the Department of Defense infrastructure, of which maintenance depots are a part. Terms of Reference (TOR) describing this review in three phases, or tasks, and a TOR for "Task 2" were issued by the Office of the Director, Program Analysis and Evaluation (PA&E) in April 1993.

II. PURPOSE

This TOR is to direct the review and develop recommend solutions for issues related to depot maintenance. The review will follow the same basic structure as approved by the USD(A) for Task 2 of the Infrastructure Review. That structure is as follows:

A. Prepare a statistical and an institutional overview of the functional areas under depot maintenance. The description will contain the following basic elements:

1. A description of the weapon system acquisition process and how and when decisions are made regarding depot maintenance requirements; the criteria currently used (basis for decision, i.e., law, policy, economics, other); and, the role of workload competition.

2. An outline of the functions performed, organizations (including the private sector), relationship to other acquisition, logistics, and maintenance functions, command and control of functions in peacetime and wartime, workload and logistics planning and operational execution.
3. Financial data -- distribution of costs and sales; organic/contract split; budget and funding projections.
4. Size and composition of the depot maintenance facility infrastructure (how measured) including number, location, and mission of activities; including description of private sector depot maintenance base, size and demographics of workforce, description of related supporting structure, and accomplishments to date in downsizing infrastructure (including downsizing planned in FY92-97 Corporate Business Plan and BRAC 93).
5. The role of the maintenance depots in supporting Operation Desert Storm and how well they performed.
6. Workload estimates by depot and types of workload.

B. Describe exogenous drivers of depot maintenance program and cost.

1. Most significant requirements of law, including environmental limitations, FAR, international agreements, etc.;
2. External constituencies;
3. Technology;
4. Workload (e.g., force structure, operating tempo, and equipment driven relationships);
5. DBOF.

C. Fundamental policy drivers.

1. Changes in strategy and role;
2. Economics;
3. DoD regulations, DBOF rules, BRAC procedures.

D. Decision Criteria and Issues. The purpose of defining issues and decision criteria is to ensure that options for consideration are placed in the context of a problem to be solved. In the case of depot maintenance, the problem, or causative issue for which the SecDef options were generated, was the issue of the existence of excess capacity, how best to eliminate it, and how to manage the remaining capacity. An external factor playing in the equation is the claim by others that more DoD organic work should be directed to the private sector.

1. Issues will be identified and prioritized. An initial starting point for framing issues would be these questions:
 - How could DoD best evaluate the capabilities and use of public and private sector depot maintenance activities in providing recommendations for BRAC 95?
 - What should be the role of the public and private sector maintenance depots?
 - What should be the basis for determining the size of the depot maintenance structure and the public/private sector share?
 - Is there a "core" requirement that can be quantified as organic DoD (except by law)?
 - What are the various management structures that could be put into place to administer and manage the DoD depot maintenance system and what are the pros and cons of each?
2. The issues cited in Secretary Aspin's April 15, 1993, memo will be specifically addressed, including: (a) an assessment of the merits of establishing an Executive Agent, Joint Command, or Defense Agency for depot maintenance activities and assessment of other management options, including an "empowered" Defense Depot Maintenance Council and privatization of depot maintenance facilities; (b) development of recommendations for the preferred option; and, (c) an examination and development of an appropriate framework for possible further consolidation of depot activities and competitive bidding.

3. To the extent possible, views of DoD and non-DoD
will be obtained and considered in develop-
ment and analysis of the study recommendations.

The Depot Maintenance Study Group will identify issues, analyze management options and issue a study report with recommendations by July 15, 1993, as required by the Secretary of Defense memorandum of April 15, 1993. The Logistics Infrastructure Task 2 Panel will not establish a separate set of options or recommendations, but will incorporate the results of this effort. To the extent that other logistics issues may depend upon the recommendations of the Depot Maintenance study group, those dependencies will be reported via the Infrastructure Task 2 Logistics Panel.


David J. Berteau
Principal Deputy

APPENDIX C

**CORE APPROACHES
AND
QUANTIFICATION**

CORE APPROACHES AND QUANTIFICATION

All Services rely on approved scenarios that serve as the foundation for CORE determinations. The driver behind this is the joint planning process accomplished by the JCS that is reflected in Service plans for contingencies and mobilization. All Services have a common step of identifying the equipment or weapon systems that should be considered as part of the CORE determination. Each of the Services performs the calculations to quantify CORE in a different manner. Although CORE is conceived of in terms of resources, all Services express it in terms of workload (man-hours).

ARMY

Approach: The Army identifies those units that deploy during contingencies or mobilization to support approved operational scenarios. In turn, those units have established "mission essential" equipment allowances documented in The Army Equipment Distribution System (Equipment Readiness Code or ERC "A" and "P"). In this way the linkage is established between the scenario and quantities of equipment to be supported by the depot structure.

Quantification: The Army uses the percent of each line item (ERC A and P) of the total inventory and applies it to the workload program requirement for that line item for a given year. The CORE quantity for each line item is totaled and a percent of the total Army workload is calculated. This is the percent of CORE workload. Thus, CORE is expressed as a percent of the peacetime workload requirement.

MARINE CORPS

Approach: The Marine Corps begins with the identification of mission essential items (MCBul 3000 and some other items on a case by case basis). Then the quantity of these items in the three active Fleet Marine Force (FMF) organizations is determined. This establishes the linkage between the scenario and quantities of equipment to be supported.

Quantification: The Marine Corps applies its CORE percentage against its peacetime workload. The CORE percentage is computed by dividing the acquisition objective (that which is required by the FMF plus 50 days (funded) of prepositioned war reserve) into the applicable active FMF equipment quantity. The percentage is then applied to the individual weapon system/item peacetime workload.

NAVY

Approach: The Navy first identifies the ships, aircraft and weapon systems (by type and quantity) which will be required to successfully complete combat contingency missions assigned by the Joint Chiefs. Next, the Navy catalogs the depot-level engineering and maintenance functions which must be performed to support these mission essential ships, aircraft and weapons. The capabilities needed to perform these functions are "CORE" capabilities. CORE capabilities are established (if they don't already exist) and maintained by assigning a minimum level of relevant work to the organic shipyards and depots.

Quantification: The Navy defines CORE workload as the minimum depot work needed to maintain CORE competencies. CORE workload is quantified by first applying acceleration factors to the peacetime level of effort for each CORE competency to account for increased combat employment and anticipated battle damage. The result of this calculation is then *derated* by a factor which accounts for the fact that, normally, less than 100% of the total inventory of a class of ships, aircraft or weapons will be committed to combat.

AIR FORCE

Approach: For the Air Force, the CORE methodology is based on assumptions which are derived from approved operational scenarios. In particular, flying hours to support approved operational scenarios are the initial step for quantifying CORE. All weapons systems related to the peacetime and wartime flying hour programs are included. Any workload for items/systems not directly affected by flying hour programs are individually established based on expected surge requirements.

Quantification: The Air Force shows a CORE percent calculated for each category of work. The ratio of peace to war flying hours is key in this computation because this ratio is applied to the peacetime depot maintenance requirements, i.e., workload. This is done for each category of work in conjunction with a wartime depot capability (resources) computation. Wartime workload requirements are then matched against the wartime resource capability for each category of workload (airframes, missiles, engines, etc.) to determine a percent CORE.

APPENDIX B

**DEPOT MAINTENANCE
LEGISLATIVE INFORMATION**

LEGISLATION THAT SIGNIFICANTLY EFFECTS DoD DEPOT MAINTENANCE

TITLE 10 U.S.C., CHAPTER 146

Each year DoD is subjected to legislative guidance contained in annual appropriation and authorization acts. The most enduring of this congressional guidance is codified as permanent law in Title 10 U.S. Code.

Title 10 U.S.C. Chapter 146, Contracting For Performance of Civilian Commercial Or Industrial Type Functions, is the basic law that prescribes the legal parameters for DoD acquisition activities including depot maintenance operations. The Chapter's nine sections, 2461 through 2469 address the following topics:

- Commercial or industrial type functions - required studies and reports before conversion to contractor performance
- Contracting for certain supplies and services required when cost is lower
- Reports on savings or costs from increased use of DoD civilian personnel
- CORE Logistics Functions
- Prohibition on contracts for performance of fire fighting or security-guard functions
- Limitations on the performance of depot-level maintenance of material
- Cost comparisons; requirements with respect to retirement costs and consultation with employees
- Military installations; authority of base commanders over contracting for commercial activities
- Contracts to perform workloads previously performed by depot-level activities of the Department of Defense; requirement of competition.

The discussion below deals only with those sections of Title 10 that have the most significance to depot maintenance.

CORE Logistics Functions

Title 10 U.S.C., Chapter 146, Section 2464 Sub-section (a)(1), requires DoD to maintain a logistics capability (including personnel, equipment, and facilities) to ensure a ready and controlled source of technical competence and resources necessary to ensure effective and timely response to a mobilization, national defense contingency situations and other emergency requirements. Sub-section (a)(2) specifies that the Secretary of Defense shall identify those logistics activities that are necessary to maintain the logistics capability described above. Sub-section (b)(1) precludes non-government personnel from contracting for performance of logistics activity identified by the Secretary under Subsection (a) above. Sub-section (b)(2) grants the Secretary of Defense waiver authority from Sub-section (b)(1) above and then requires that OMB Circular A-76 provisions be followed in case of such waiver. (OMB Circular A-76 establishes procedures for determining whether commercial activities should be performed under contract with commercial sources or in-house using Government facilities and personnel.)

Sub-sections (b)(3) and (4) specify the provisions as to when the waiver under (b)(2) can take place and then elaborate on those provisions.

In summary, whenever a waiver is granted to non-government personnel to contract for performance of a logistic activity identified by the Secretary of Defense then the provisions of OMB Circular A-76 apply. If the analysis done to comply with A-76 indicates increased competition and increased private sector participation is necessary in order to perform DoD logistics functions in a more expeditious manner, then an exclusion from the OMB Circular A-76 provisions may be considered as a desirable recommendation.

Legislatively Defined Limits

Title 10, U.S.C., Section 2466 Sub-section (a)(1), prescribes the percentage limitation for the performance of depot-level maintenance. Except in the case of the Army, the Secretary of Defense may not contract for the performance by non-Federal Government personnel of more than 40% of depot-level maintenance workload for the military department or the Defense Agency. In the Army's case Sub-section (a)(2), the Secretary of the Army shall provide for the performance of Army aviation depot-level maintenance workload by employees of the Department of Defense of not less than (A) 50% for FY93, (B) 55% for FY94, and (C) 60% for FY95. Furthermore, sub-section (b) prohibits the management of DoD depot-level civilian employees on the basis of any end-strength constraint or limitation. Instead, these employees shall be managed solely on the basis of available workload and funds available for depot-level maintenance. Within the depot maintenance community this section is commonly referred to as the 60/40 split.

Sub-section (c) grants the Secretaries of the Military Departments authority to waive the limitation requirements if warranted by national security interests. If the Secretaries exercise such waiver authority, they are required to notify Congress of the reasons. Sub-section (d) exempts the Sacramento Army Depot from the requirements of this section.

Reporting requirements are specified in sub-section (e)(1); the Secretary of the Army and the Secretary of the Air Force shall jointly submit to the Congress a report describing the progress to achieve and maintain the percentage limitations by January 15, 1992 and 1993 for the then ended applicable fiscal years. Sub-section (e)(2) requires that the Secretary of each Military Department and the Secretary of Defense, with respect to the Defense Agencies, jointly submit by January 15, 1994, a report as described in sub-section (e)(1).

The percentage limitation on the amount of contracting permitted, as specified in section 2466 above, presents a potential ceiling with respect to the proposed new methodology of sizing depot maintenance CORE.

Threshold For Moving Workloads

Title 10 U.S.C., Chapter 146, Section 2469 is the last section of the chapter. However, it is of major importance because it prescribes constraints and procedures placed on the

Secretary of Defense or the Secretary of a military department. In essence, performance of depot-level maintenance workload with a threshold of \$3,000,000 that is currently being performed by a DoD depot-level activity cannot be changed, unless the Secretary uses competitive procedures.

ACQUISITION LAW ADVISORY PANEL REPORT

In section 800 of Public Law Number 101-510 (the National Defense Authorization Act for FY91), Congress directed the Department of Defense to establish the "DoD Advisory Panel on Streamlining and Codifying Acquisition Laws." Accordingly the Under Secretary of Defense for Acquisition selected a Panel of experts in acquisition law and procurement policy to review all laws affecting DoD procurement with the intent of streamlining the acquisition processes. Under the leadership of the Commandant of the Defense Systems Management College, this panel concluded its work in January 1993 and prepared a report for transmission by the Secretary of Defense to the Congress. The report is commonly referred to as the 800 report - named after the section of the law that authorized it. The report contains recommendations that impact on the management of depot work loading processes.

With regard to the three sections of title 10, U.S.C. Chapter 146 on CORE Logistic Functions, the panel proposed a new section designated as 24XY. This recommendation is extremely important and should be adopted except for minimal word changes (see strikeouts and bolding (additions)) and the inclusion of the competitive efficiency and effectiveness rules contained in Title 10, U.S.C., Chapter 146, Section 2461 (a)(3). The modified recommendation is as follows:

"10 U.S.C. SECTION 24XY CORE LOGISTICS FUNCTIONS

a. POLICY - It is essential for the national defense that Department of Defense activities maintain a CORE logistics capability (including personnel, equipment and facilities) sufficient to ensure a ready and controlled source of technical competence and resources necessary for an effective and timely response to national defense contingency situations and other emergency requirements.

b. Accordingly, the Secretary of Defense or secretary of a military department shall identify those logistics activities that are necessary to maintain the logistics capabilities described in subsection (a).

(1) Notwithstanding any other provision of law, the Secretary of Defense or secretary of a military department shall have the modification, depot maintenance, and repair of defense-related material performed by Government or military personnel at activities identified in subsection (b) as the secretary determines necessary to maintain the CORE logistics capabilities described in subsection (a).

(2) The Secretary of Defense or the secretary of a military department may use competition among those Government-owned facilities to determine which entity can most efficiently perform the CORE logistics

requirements capabilities described at subsection (a) above, considering both cost and performance factors.

- c. In excess of the CORE logistics requirements capabilities described in subsection (b), above, the Secretary of Defense or secretary of a military department may acquire the additional modification, depot maintenance and repair of defense-related material and components, and the production of defense-related supplies, needed for the Department of Defense through (i) competition among maintenance activities owned by the United States, (ii) competition between such activities and private firms, or (iii) competition among private firms.*
- d. In competitions under this section, whether between DoD activities, between DoD activities and private firms, or between private firms, bids from these entities shall accurately disclose all costs properly and consistently derived from accounting systems and practices that comply with laws, policies and standards applicable to those entities. In competition between DoD activities and private firms, the Government calculation for the cost of performance of such function by Department of Defense civilian employees shall be based on an estimate of the most efficient and cost effective organization for performance of such function by Department of Defense civilian employees.*
- e. The procedures or requirements of OMB Circular A-76 do not apply to determinations made or competitions entered into pursuant to this section."*

The final panel recommendation in this area is the repeal of both Section 2466, and Section 2469. Section 2466 sets forth guidance regarding DoD contracting for depot level maintenance. In short, it prohibits each Military Department from contracting out more than 40% of its depot level maintenance and is considered as an aggregate type limitation. Section 2469 requires competitions before changing the performance of depot-level maintenance workloads, valued at \$3M or more, among DoD depot activities or between such depot activities and private contractors. Section 2469 is considered a limitation applicable at the individual depot level. The repeal of these sections is an excellent recommendation.

APPENDIX D

**SUMMARY: CURRENT MAJOR WEAPON SYSTEMS
ACTIVATION PLANS**

SUMMARY: MAJOR WEAPON SYSTEM ACTIVATION PLANS

Program Name	Service	Milestone III Date	DEPOT SUPP STRAT	DEPOT ACT DATE
ABRAMS MIA2	ARMY	10/91	ICS PLANNED 95-97	TBD
LONGBOW HELLFIRE	ARMY	10/97	TBD	TBD
APACHE LONGBOW	ARMY	5/95	ICS-ORGANIC	12/2000
JAVELIN	ARMY	4/96	ICS-ORGANIC	4/98
ATACMS	ARMY	9/90	ICS-ORGANIC	9/90
JSTARS GSM	ARMY	7/93 (IIIA)	ICS-ORGANIC	3rd Qtr 98
ADDS EPLARS/JTDS	ARMY	5/90	ICS-ORGANIC	10/95
SINGARS	ARMY	12/90	SPLIT: ARMY-CLS	3/94
FAAD C2I	ARMY	12/90	ICS-ORGANIC-CLS	11/92
AVENGER	ARMY	4/90	ICS-ORGANIC-CLS	9/94
MCS	ARMY	2/94	CLS FOR CHS *	
CSSCS	ARMY	2/94	CLS FOR CHS *	
AFATDS	ARMY	12/94	CLS FOR CHS *	
ASAS	ARMY		CLS FOR CHS *	
* All use common hardware				
AOE-6	NAVY	6/92	DEPOT	1 QTR 94
EMSP	NAVY	1/89	ICS-ORGANIC	1 QTR 98
MK-48 ADCAP	NAVY	1/89	ICS-ORGANIC	7/88
STD MISSILE(BLOCKIII)	NAVY	1/95	CLS	N/A
MK-50	NAVY	3/89	ORGANIC-CLS	7/91
MHC-51	NAVY	1/90		
NESSP	NAVY	3/93	ICS-ORGANIC	2/94
UHF F/O	NAVY	5/90	NO DEPOT	NO DEPOT
T45TS	NAVY	9/94	CLS	11/96
ICS - INTERIM CONTRACTOR SUPPORT				
CLS - CONTRACTOR LOGISTICS SUPPORT FOR DEPOT WORKLOAD				
ORGANIC - SERVICE PERFORMS DEPOT WORK				

SUMMARY: MAJOR WEAPON SYSTEM ACTIVATION PLANS

As Of: 7/09/93

Page 2 of 2

Program Name	Service	Milesone III Date	ICS/DEPOT OR CLS	DEPOT ACT DATE
C-17	AF	6/95	ICS THRU 95 (?)	TBD
ACM	AF	2/91 DUAL SOURCE	ICS-ORGANIC	4TH QTR 96
JSTARS	AF	3/96	ICS-ORGANIC-CLS	2D QTR 97
MILSTAR	AF	1/93	ICS-ORGANIC-CLS	3/93
AWACS RISP	AF		ICS-ORGANIC	1998
AMRAAM	AF	4/92	ICS-ORGANIC	2/96
B1	AF	N/A	ICS-ORGANIC-CLS	4TH QTR 94
B2	AF	N/A	ICS - TBD	1/2000 (Start)
SR-UAV	DOD	2/93 (IIIA)	ICS-ORGANIC	TBD

APPENDIX E

**Legal Perspective
on
Depot Maintenance Management Alternatives**

Legal Perspective on Depot Maintenance Management Alternatives

This appendix provides an overview of potential legislative issues that may need to be considered in adopting one of the five management alternatives developed by the Study Team. It is not intended to be a comprehensive review, but more to provide insight into the considerations that may have bearing on the implementation of an alternative depot maintenance management structure. The primary focus involves potential limitations on the authority of the Secretary of Defense to reorganize DoD in light of the Goldwater-Nichols DoD reorganization Act of 1986, set forth at 10 U.S.C. Section 111 et seq. ("Goldwater-Nichols") and issues under the Defense Base Realignment and Closure Act of 1990 ("BRAC"), Pub. L. No. 101-510 Section 2901 et seq. Any or all of the alternatives may require supporting legislation in order to implement.

Goldwater-Nichols, which reorganized and strengthened certain elements of DoD, was the culmination of a series of studies and hearings by Congress and the Packard Commission. One of the central purposes of Goldwater-Nichols was to "clarify the roles, responsibilities, and authority of senior civilian officials and senior military officers of (DoD)." S. Rep. No. 99-280, 99th Cong., 2d Sess. 2 (1986). Goldwater-Nichols enumerated the powers and duties of the Secretary of Defense as well as the powers and duties of the Service Secretaries. In addition, Goldwater-Nichols specifically modified the authority of the Secretary of Defense to reorganize DoD.

Prior to the enactment of Goldwater-Nichols, the Secretary of Defense had the ability to "(t)ransfer, reassign, consolidate, or abolish any DoD function, power, or duty, including those vested by law in DoD or in a DoD officer, official, or agency." S. Rep. No. 99-280, 99th Cong., 2d Sess. 13 (1986), reprinted in 1986 U.S.C.C.A.N. 2181 (citing old section of statute). In Goldwater-Nichols, Congress curbed this broad grant of legislative authority by repealing that portion of the statute that enabled the Secretary of Defense to change functions, powers, and duties specified in law and requiring Congressional approval of such changes in its normal legislative process, except in time of hostilities or imminent threat of hostilities when the President is authorized to transfer, reassign, or consolidate functions, that the Congress has expressly created a function, power, or duty and has specifically assigned it to an entity created by the Congress, the Secretary of Defense's authority to reassign, transfer, or consolidate is limited. See 10 U.S.C. Section 125.

Many of the management alternatives considered appear to change or eliminate Service Secretary functions and responsibilities set forth in statute. Therefore, a detailed review and analysis by the DoD General Counsel would be in order to determine whether legislation would be required to support implementation of a specific alternative selected.

In addition to Goldwater-Nichols issues, the five proposals may raise issues under BRAC which may need legal review. To the extent that any of the proposals require realignment of the organizations and closure of activities as defined in the statute, BRAC procedures would have to be followed and appropriated funds could not otherwise be used for such efforts. Whether closure or realignment is involved may need to be determined by counsel.

APPENDIX F

DEFENSE DEPOT MAINTENANCE MANAGEMENT ALTERNATIVES

This Appendix provides a complete description of the Four Depot Maintenance Management Alternatives. In addition, this Appendix includes a Table starting on page F-28 that compares the alternatives with regard to functions performed. The alternatives start on the pages indicated below:

- **Empowered Defense Depot Maintenance Council, page F-2**
- **Executive Service Depot Maintenance Management
with and empowered DDMC, page F-7**
- **Joint Depot Maintenance Command, page F-15**
- **Defense Depot Maintenance Agency, page F-23**

CONCEPT PAPER FOR AN EXECUTIVE SERVICE DEPOT MAINTENANCE MANAGEMENT WITH AN EMPOWERED DDMC

A. Overview

1. The current Defense Depot Maintenance Council (DDMC) and related depot maintenance management structure has limited cross-service control of depot maintenance business decisions. Its principal focus has been on managing to implement the efficiencies and attain the savings called for by the Defense Management Review. The result has been great difficulty making substantial changes in depot capacity and business processes. Needed are:

- Broader-based, more fundamental downsizing decisions to include cross-service resizing of depot capacity to match changing force structure,
- A standard, DoD-wide structure for managing and operating depot-level maintenance, and
- Common maintenance procedures, cost systems, and information systems.

2. Proposed in this paper is an empowered DDMC that provides oversight of the entire breadth of the Department's depot maintenance operations, develops coherent DoD-wide policies, makes decisions in a limited number of key areas, and, in general, exercises the authority of the Secretary of Defense to provide effective, integrated depot maintenance management. A decision support process would be developed to provide consistent decision support information, highlight necessary decisions, and elevate decisions to appropriate levels. The Components retain operational control of actual depot maintenance operations, organic and contract, and are responsible for implementation of approved business plans.

The chair of the DDMC will be the incumbent in the newly established position of the DUSD(L). The membership of the DDMC will include the DUSD(L), and a designated representative from the Army, Navy, Air Force, Marine Corps, JCS and DLA. Figure 1 provides a notional organizational approach. The members will vote on issues and programs raised to the DDMC level; the chair will promulgate decisions through the appropriate means, e.g., decision memoranda and policy statements. All seven members will each have one equal vote and a simple majority rule will decide all issues. Those decisions requiring additional authority or those issues that cannot be resolved will be elevated to the Board of Directors (described below), the USD(A) or to the Secretary or Deputy Secretary of Defense, as may be appropriate.

Unlike the current DDMC, the empowered DDMC will have well-defined decision making authority in specific areas of responsibility. However, as with the current DDMC structure, the Components will retain responsibility for and control of the resources for program execution. The empowered DDMC will function as the decision maker and management integrator in DoD depot maintenance operations areas such as the following:

- a. Industrial support policy for depot level maintenance
- b. Consolidated planning

- c. Coordinated resourcing
- d. Standardized business practices
- e. Significant business decisions
- f. Integrated capacity management to include downsizing decisions
(e.g., BRAC 95)

The empowered DDMC will be supported by a maintenance management support activity (MMSA) attached to OSD. The MMSA will be responsive to routine management tasks attendant to their described support role as well as to specific taskings from the DDMC.

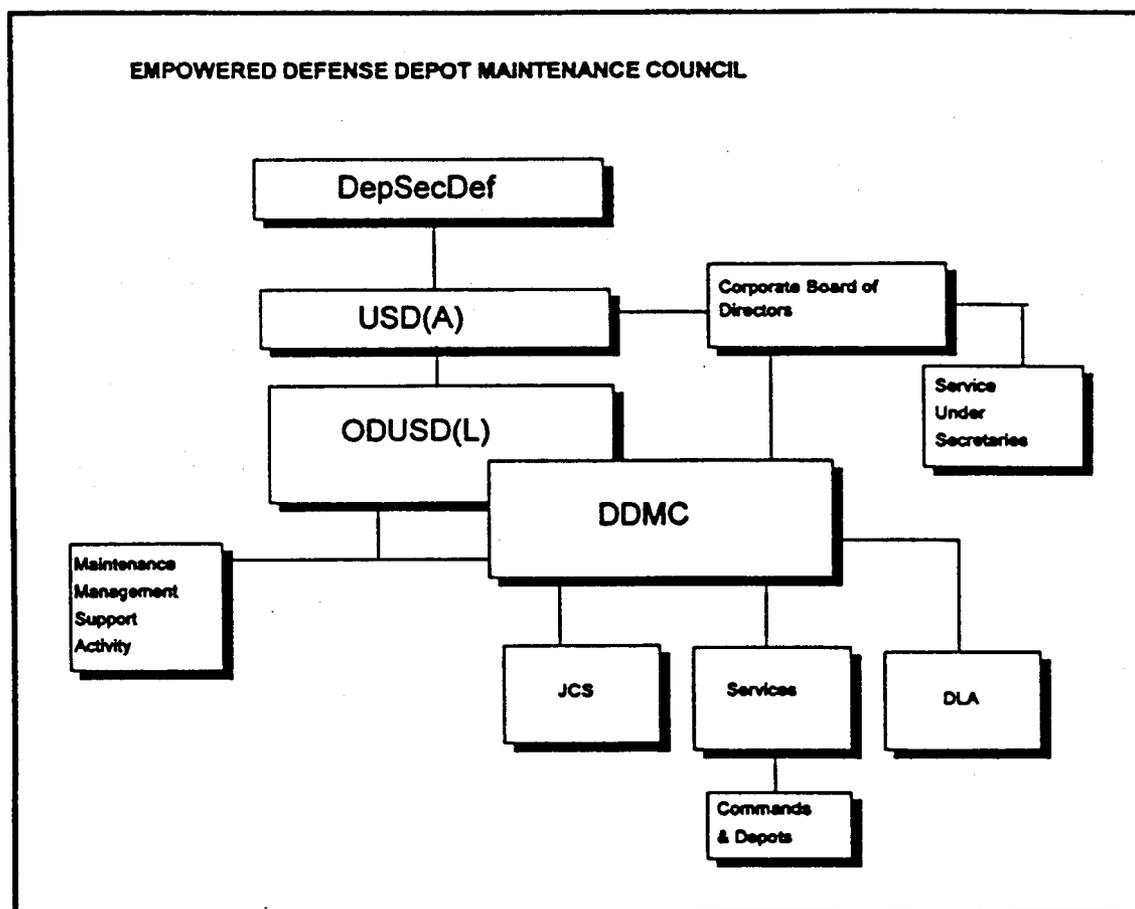


Figure 1. Relationship to Other Offices, Commands, and Agencies

3. It is important to understand the relationship of the empowered DDMC management concept to Service headquarters, combatant commands, materiel commands, system managers, item managers, and others from the standpoint of functions assumed and not assumed. The relationships would be as shown in the following table:

Functional Relationships

Function/Area	Empowered DDMC Responsibility	Comment
Overall policy on depot maintenance process	Supports development of internal policies; approves implementation of such policies. Recommends where policy affects external commands and agencies	Broad policy promulgated by Deputy Undersecretary of Defense Logistics
Determining requirements for depot maintenance	Supports	Responsibility of Services
CORE	Develops overall guidelines; reviews results of guideline application.	In coordination with Services
Depot posture/business planning and maintenance workload assignments	Promulgates guidelines; decides above set thresholds	
Source of repair decisions	Provides general guidelines; establishes criteria; decides above set thresholds	In coordination with Services
Downsizing	Develops broad goals and provides guidelines; develops uniform criteria; integrates as necessary and determines final posture	In coordination with affected Services
Depot maintenance business practices and performance measures	Develops requirements; approves and reviews implementation	Serves to standardize where appropriate; reviews results from an integrated perspective
Depot maintenance information systems (cost, workload control, resource allocation, industrial engineering)	Provides general guidelines; Focuses on any needed standardization	Works to establish comparability and uniformity
Depot maintenance methods and procedures	Facilitates sharing of information	
Procurement	Oversight; guidelines for competition programs	Services are responsible for public-public, public-private, and private-private depot maintenance procurement
DBOF budget	Reviews from an integrated perspective; uses limited number of controls to balance overall program	Services develop budgets; DDMC advocates after their review and approval
Contingency response forces (e.g., battle damage repair teams and in-theater depot(s))	Ensures DoD has established appropriate capabilities	Service or jointly developed and supported capabilities
Human resource management	Broad policy; advocates appropriate policy within DoD and with external constituencies	Supported by headquarters commands, materiel commands, etc.
Ownership of Maintenance Production Facilities and Resources	Coordination of facility use and capital improvements above set thresholds	Services retain ownership of facilities and responsibility to plan for and advocate resources

B. Why Do It, How Does It Work?

4. The motivations for moving to an empowered DDMC structure are centered on the complexity of developing and implementing alternative management structures in a timely and effective manner. The fundamental issue appears to be providing integrated management for a limited number of recurring policy and resource decisions. These decisions become increasingly more important during the transition to a smaller depot infrastructure. Depot maintenance as a process is, however, an integral part of a larger logistics infrastructure and is intricately interwoven into the fabric of support for DoD weapon systems and equipment. Each Component has tailored its depot maintenance support structure to meet its unique maintenance needs as well as to operate effectively within the Component logistics structure and overall organization. Depot maintenance is, therefore, not so easily segregated to establish centralized agencies, commands, or other combined organizations.

The empowered DDMC addresses the need to provide integrated management of a number of key elements within the DoD depot maintenance program. Through broadening the charter of the DDMC to go beyond effective implementation of the Defense Management Report, the DDMC is granted the perspective necessary to deal across the entire spectrum of depot maintenance operations. Institutionalizing the decision making authority in the DDMC provides a viable way to make the necessary decisions that provide control of the integrated program. The DDMC provides centralized management (for a limited number of program and decision variables) and decentralized program execution (through an already established infrastructure that is fully integrated with the Service's combat and weapon systems management concepts).

5. The necessary decision-making authority to effectively manage DoD depot maintenance resides in the SecDef chain. To strengthen the DDMC, a decision support process that includes a limited number of controls is required. The DDMC focus will be on a limited number of key decisions that require an integrated perspective and provide effective overall control of DoD depot maintenance operations. The DDMC will elevate the decision level when appropriate to ensure effective implementation of decisions. To enhance the effectiveness of the empowered DDMC, a "Board of Directors" will be established. The Board, which would be comprised of (for example) the USD(A) and the Service Undersecretaries, would come into play should the DDMC not be able to resolve a particular issue or reach a decision.

Decision implementation is through Service chains of command and management structures. The DUSD (L) chairs the DDMC. The composition of the empowered DDMC is described above in paragraph 2. When issues cannot be resolved by the DDMC, they will determine the appropriate course of action, e.g., submit the issue to the Board of directors or to the USD(A) or DepSecDef.

Decision parameters will be established for a limited number of key elements, e.g.,

- Workloading
- Budgeting
- Capital investment and dis-investment
- Technology introduction
- Business strategies and support systems

6. The DDMC is supported by a maintenance management support activity (MMSA). There is a permanent head of the MMSA who shall be an SES-level director. The joint

community provides membership for the permanent MMSA, which serves as a monitoring, planning and information staff. The empowered DDMC and its support structure will provide an opportunity to streamline the current interservice support structure and eventually would subsume much of that structure's operations. The Director of the MMSA will,

- Develop the decision support concept, e.g., identify control elements and information needed to support DDMC operations
- Facilitate and oversee consolidated planning; develop integrated plan;
- Monitor plan implementation
- Develop DDMC operating procedures and agendas

The DDMC is an ad hoc group with scheduled periodic meetings. DDMC meetings will address recurring topics (e.g., as in decision parameters described above) in a methodical manner. Other topics may be introduced thru agenda development by the Components, by OSD or by the MMSA. "Triggers" are established to raise decisions to DDMC level, e.g.:

- Workloads - inter-depot (into or out of a single depot) or change of source workloads exceeding on a cumulative fiscal year basis 100 DLYs annually
- Budgeting - deviations from Corporate Business Plan of xx percent
- Capital investments - total by depot and specific projects exceeding \$100K in value
- Technology introduction - Introduction of any new technology; adaptation or expansion of existing technologies
- Business strategies and support systems - competition programs (i.e., specific competitions for pending year); changes in maintenance concepts such as those affecting where levels at which maintenance is performed; contract to organic mix; support plans for new acquisition weapon systems and equipment

The Board of Directors meets only as required to address specific issues.

The DDMC is also notified of changes in operating procedures, organizational changes through submissions to the secretariat or to the supporting MMSA. Special meetings of the DDMC will be held to address specific topics when required such as BRAC, CIM, and special studies. An integrated Corporate Business Plan is developed annually with Service inputs and DDMC approval.

CONCEPT PAPER FOR AN EMPOWERED DEFENSE DEPOT MAINTENANCE COUNCIL WITH EXECUTIVE SERVICE MANAGEMENT

A. Overview

1. The current Defense Depot Maintenance Council and related depot maintenance management structure has limited cross-service control of depot maintenance business decisions. Its principal focus has been on managing to implement the efficiencies and attain the savings called for by the Defense Management Review. The result has been great difficulty making substantial changes in depot capacity and business processes. Needed are:

- Broader-based, more fundamental downsizing decisions to include cross
- service resizing of depot capacity to match changing force structure,
- A standard, DoD-wide structure for managing and operating depot-level maintenance, and
- Common maintenance procedures, cost systems, and information systems.

2. Proposed in this concept paper is an empowered DDMC that provides oversight of the entire breadth of the Department's depot maintenance operations, develops coherent DoD wide policies, makes decisions in a limited number of key areas, and, in general, exercises the authority of the Secretary of Defense to provide effective, integrated depot maintenance management. Included in this proposal is the establishment of an Executive Service (ES) by category depot maintenance structure throughout the Services. As a notional example, USN could be ES for all ships and watercraft, USAF for all fixed wing aviation, USMC for amphibious equipment and the Maritime Prepositioning Force (MPF) program, and USA for all ground equipment.

Because there is no truly clean partitioning of workloads at the depots, which other than for ships, are all multi-commodity facilities, the initial assignment of Executive Service would have to be determined by the empowered DDMC. This could be accomplished by the notional breakout above or some other such as--technology, skills, etc. During the initial phase, depots could be assigned to an Executive Service based on largest percent of workload falling in any one category. It would be the responsibility of the empowered DDMC to make future decisions which would better align the depot structure.

A decision support process would be developed to provide consistent decision support information, highlight necessary decisions, and elevate decisions to appropriate levels. The chair of the DDMC will be the incumbent in the newly established position of the DUSD(L). The membership of the DDMC will be structured to properly align with this newly created position. Figure 1 provides a notional organizational approach. While members will vote on issues and programs raised to the DDMC level, the chair will have final decision-making authority. Those decisions requiring additional authority or those that cannot be resolved will be elevated to the Board of Directors, the USD(A) or to the Secretary or Deputy Secretary of Defense, as may be appropriate. The ES will assume control over all Depot Maintenance Business Areas of the

Defense Business Operations Fund (previously DMIF) operations/resources at the Depots assigned to that category. Only plans, policies, and decisions relative to DMIF activities will be covered by the ES maintenance Systems. The staff of the ES would be made of existing organizations, authorizations, and structures within the Logistics Command given the Executive assignment.

Unlike the current DDMC, the empowered DDMC will have well defined decision making authority in specific areas of responsibility. However, as with the current DDMC structure, the ES will retain responsibility for and control of the resources for program execution. The empowered DDMC will function as the decision maker and management integrator in DoD depot maintenance operations areas such as the following:

- a. Industrial support policy for depot level maintenance
- b. Consolidated planning
- c. Coordinated resourcing
- d. Standardized business practices
- e. Significant business decisions
- f. Integrated capacity management to include downsizing decisions
(e.g., BRAC 95)

The empowered DDMC will be supported by a maintenance management support activity (MMSA) attached to OSD. The MMSA will be responsive to routine management tasks attendant to their described support role as well as to specific taskings from the DDMC or the DDMC Secretariat. The MMSA staffing authorizations will come from the current Joint Depot Maintenance Analysis Group (JDMAG) which this option does away with.

The mission of the ES assignment would be to conduct the most efficient, customer-responsive, depot maintenance operation possible. Under this concept the Services would maintain control over their own mission and depot maintenance requirements determination, weapon systems management and inventory control points.

Consolidation under this concept will be done in such a manner that it provides the operational units the best value (cost, quality, and schedule). Because current force structure and budgetary projects reflect continued reductions the ES must be given the authority to aggressively pursue consolidations of similar workloads to eliminate unnecessary redundancies and increase efficiency. Consolidation studies will be managed by the ES while the Service owning the depots will perform all analysis on depot closures and realignments. The ES will be responsible for making depot closure recommendations. Any such decisions on closure of depot activities and /or bases hosting the depots will be made by the DDMC with DUSD(L) approval.

The ES will assure all customers are provided ready affordable support. The Joint Depot Maintenance Center Director (described below) will make all Source of Repair decisions for the assigned category of Depot Maintenance, control all capital investments/divestitures within category depots, establish uniform measures of performance for DMIF operations, set broad reaching guidance, direction, and policy for operations and budgeting processes, and establish an infrastructure that guarantees support of customer needs both in periods of peace and contingency operations. To aid in accomplishing this objective the ES will have decision authority for use of all DMIF resources (manpower, equipment, and facilities) at depots assigned.

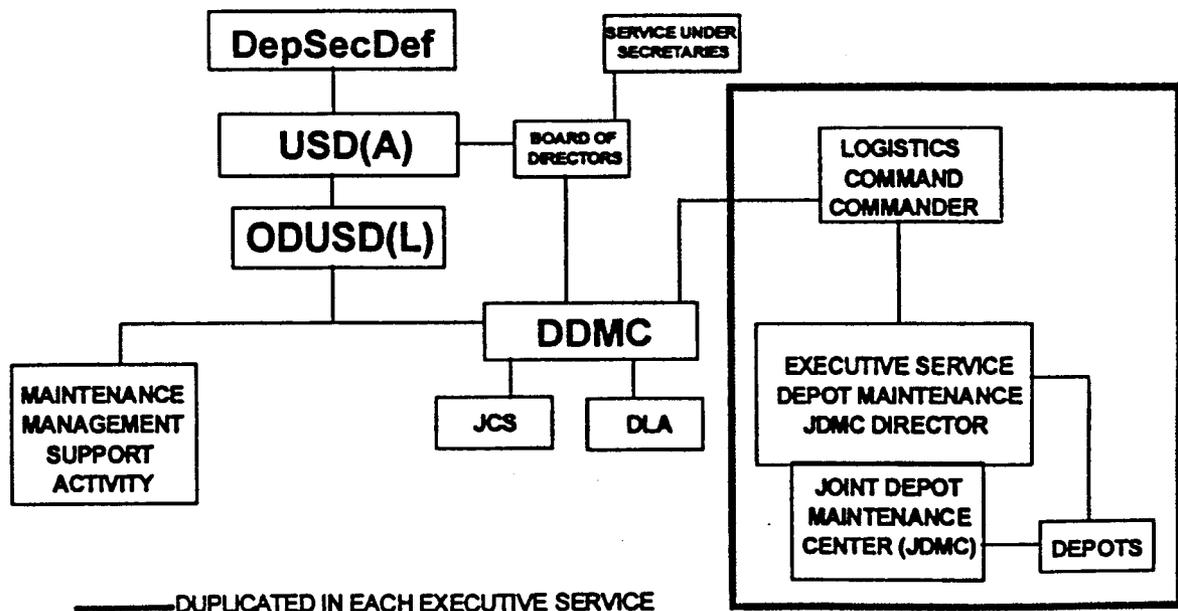
Day-to day operations between depots under an ES and the weapon system manager will be direct between the manager and responsible workloader/business planner at the assigned Source of Repair (SOR). These operations will include such things as workload negotiations, changes in requirements, funding increases/reductions, and technical data changes.

A three-star (notional rank) Joint Depot Maintenance Center Director will act as the single source of management information and is responsible for corporate depot maintenance business plans and decisions. The Director and Deputy positions will be rotating positions with no one Service holding both positions at the same time. The recommended tour of assignment would normally not exceed three years.

The Director will report through the Commander of the Service Logistics Organization given ES responsibilities. The Director position will rotate among the Services having workload within the category (e.g., Navy, Army, Marine Corps, and Air Force for aviation; Army, Air Force, and Marine Corps. for ground equipment). The ES headquarters will be co-located with the ES Logistics Commander and supported by a multi-Service staff (Joint Depot Maintenance Center) to be manned by a proportional number (to workload in direct labor actual hours) of military and civilians from each supported Service. The mix of military and civilian personnel will be determined by the supported Service.

Services will retain control over depot activities by selecting their own depot Commanders. However, the depot Commanders will report to the Director on matters pertaining to DMIF operations. The DMIF staffs at depots managed by the Director will have joint staffs in all management positions.

Empowered Defense Depot Maintenance Council With Executive Service Management



B. Relationship to Other Offices, Commands, and Agencies

3. It is important to understand the relationship of the empowered DDMC management concept to service headquarters, combatant commands, material commands, system managers, item managers, and others from the standpoint of functions assumed and not assumed. The relationships would be as shown in the following table:

FUNCTION/AREA	Empowered DDMC /Executive Service Responsibility	Comment
Overall policy on depot maintenance process	DDMC Supports development of internal policies; approves ES implementation of such policies. Recommends where policy affects external commands and agencies	Broad policy promulgated by Deputy Undersecretary of Defense Logistics
Determining requirements for depot maintenance	Supports	Responsibility of services
CORE	DDMC develops overall guidelines; reviews results of guideline application. ES has responsibility for development of core numbers.	DDMC coordinates with Services whereas ES coordinates with assigned depot maintenance functions
Depot posture/business planning and maintenance workload assignments	DDMC promulgates guidelines; decides above set thresholds and the ES has responsibility for processes and decision making	In coordination with Program Executive Officers and Program Managers
Source of repair decisions	DDMC provides general guidelines; establishes criteria; decides above set thresholds. ES has decision authority	DDMC coordinates with Services and the ES coordinates with Program Executive Officers and Program Managers
Downsizing	DDMC develops broad goals and provides guidelines; develops uniform criteria; integrates as necessary and determines final posture on a DoD level. ES is responsible for implementation and plans development within depots assigned.	In coordination with affected commands and agencies subject to interservice review process
Depot maintenance business practices and performance measures	DDMC develops requirements; approves and reviews implementation and ES develops and implements	DDMC serves to standardize where appropriate; reviews results from an integrated perspective and ES will standardize and gather data within assigned depots
Depot maintenance information systems (cost, workload control, resource allocation, industrial engineering)	DDMC provides general guidelines; Focuses on any needed standardization and ES recommends standard functional requirements	Works to establish comparability and uniformity
Depot maintenance methods and procedures	DDMC facilitates sharing of information and ES establishes policies within assigned depot structure and implements	ES is responsible for the efficiency of operations

Procurement	DDMC provides oversight; guidelines for competition programs and the ES manages the competition program within Service. ES acts as a seller rather than a buyer	Services are responsible for public-public, public-private, and private-private depot maintenance procurement. System managers are responsible for public-public, public-private, and private-private depot maintenance procurement
DMIF budget	DDMC reviews from an integrated perspective; uses limited number of controls to balance overall program. ES has responsibility for guidance and development	Services develop budgets within DoD guidelines and assure consistency among all assigned depots; DDMC advocates after their review and approval
Contingency response forces (e.g., battle damage repair teams and in-theater depot(s))	DDMC ensures DoD has established appropriate capabilities and ES plans for and trains for in peacetime, deploys in wartime.	Service or jointly developed and supported capabilities
Human resource management	DDMC develops broad policy; advocates appropriate policy within DoD and with external constituencies and ES has responsibility for all DMIF	Supported by headquarters commands, material commands, etc.. Levels driven by Source of Repair assignments and customer funding.
Ownership of Maintenance Production Facilities and Resources	DDMC is responsible for coordination of facility use and provision of resources above set thresholds. ES has responsibility and ownership within assigned depots	Services retain ownership of facilities and responsibility to plan for and advocate resources. The ES has responsibility for all budgeting, approval, and validation of need.

C. Why Do It, How Does it Work?

4. The motivations for moving to an empowered DDMC/ES structure are centered on the complexity of developing and implementing alternative management structures in a timely and effective manner. The fundamental issue appears to be providing integrated management for a limited number of recurring policy and resource decisions. These decisions become increasingly more important during the transition to a smaller depot infrastructure. Depot maintenance as a process is, however, an integral part of a larger logistics infrastructure and is intricately interwoven into the fabric of support for DoD weapon systems and equipment. Each Service has tailored its depot maintenance support structure to meet its unique maintenance needs as well as to operate effectively within the Services logistics structure and overall Service organization. Depot maintenance is, therefore, not so easily segregated to establish centralized agencies or commands.

The empowered DDMC/ES structure addresses the need to provide integrated management of a number of key elements within the DoD depot maintenance program. Through broadening the charter of the DDMC to go beyond effective implementation of the Defense Management Report, the DDMC is granted the perspective necessary to deal across the entire spectrum of depot maintenance operations. Institutionalizing the decision making at the ODUSD(L) level provides a rational way to make the necessary decisions that provide control of the integrated program. The DDMC/ES concept provides centralized management (for a limited number of program and decision variables) and decentralized program execution (through the ES

for a commodity grouping and already established infrastructure that is fully integrated with the Service's combat and weapon systems management concepts).

Paramount to the acceptance of this process is the fact that it integrates not only the decision processes but the service maintenance staffs. It establishes no new organizations nor creates any requirement for manpower (overhead). As an example the current JDMAG authorizations can be utilized to establish the Maintenance Management Support Activity (MMSA) described below.

5. The necessary decision-making authority to effectively manage DoD depot maintenance resides in the SecDef chain. To strengthen the DDMC a decision support process that includes a limited number of controls is required. The DDMC focus will be on a limited number of key decisions that require an integrated perspective and provide effective overall control of DoD depot maintenance operations. The DDMC will elevate the decision level when appropriate to ensure effective implementation of decisions. To enhance the effectiveness of the empowered DDMC, a "Board of Directors" will be established. The Board, which would be comprised of (for example) the USD(A) and the Service Undersecretaries, would come into play should the DDMC not be able to resolve a particular issue or reach a decision.

Decision implementation is through Service chains of command and management structures. The DUSD (L) chairs the DDMC and is the decision-maker. The composition of the empowered DDMC includes the Service Logistics Commanders/DLA Commander who Commander serve as voting members and advisors. When a conclusive vote cannot be made, the Chair of the DDMC exercises his decision-making prerogative; such prerogative may also be exercised when the Chair does not concur with the results of a vote. The option to raise an issue to the Board of Directors level will be a DDMC decision.

Decision parameters will be established for a limited number of key elements, e.g.,

- Workloading
- Budgeting
- Capital investment and dis-investment
- Technology introduction
- Business strategies and support systems

6. The DDMC is supported by a maintenance management support activity (MMSA). There is a permanent head of the MMSA who shall be an SES-level director. The joint community provides membership for the permanent MMSA, which serves as monitoring, planning, and information staff. The empowered DDMC and its support structure will provide an opportunity to streamline current interservice support structures and eventually would subsume much of that structure's operations. The Director of the MMSA will:

- Develop the decision support concept, e.g., identify control elements and information needed to support DDMC operations
- Facilitate and oversee consolidated planning; develop integrated plan;
- Monitor plan implementation
- Develop DDMC operating procedures and agendas

The DDMC is an ad hoc group with scheduled monthly meetings. The Executive Support Group also meets monthly, prior to the scheduled DDMC meeting. Monthly DDMC meetings will address recurring topics (e.g., as in decision parameters described above) in methodical manner. Other topics may be introduced through agenda development by the Components, by OSD, or by the MMSA. "Triggers" are established to raise decisions to DDMC level, e.g.:

- Workloads - inter-depot (into or out of a single depot) or change of source workloads exceeding on a cumulative fiscal year basis 100 DLYs annually
- Budgeting - deviations from Corporate Business Plan of xx percent
- Capital investments - total by depot and specific projects exceeding \$100K in value
- Technology introduction - Introduction of any new technology; adaptation or expansion of existing technologies regardless of funding source
- Business strategies and support systems - competition programs (i.e., specific competitions for pending year); changes in maintenance concepts such as those affecting where levels at which maintenance is performed; contract to organic mix; support plans for new acquisition weapon systems and equipment

The Board of Directors meets only as may be required to address specific issues.

Similar procedures would be developed for use by the ES in its posture planning processes. Issues or decisions not resolved at the ES level will be elevated through the normal DDMC operating procedures described above.

The DDMC is also notified of changes in operating procedures, organizational changes through submissions to the secretariat or JDMC inputs to the supporting MMSA. Special meetings of the DDMC will be held to address specific topics when required such as BRAC, CIM, and special studies. An integrated Corporate Business Plan is developed annually with Service inputs and DDMC approval.

The reasons for selection of the ES concept are that it recognizes the synergism of combining similar technologies, improving business practices and the need to downsize our organic industrial complexes. However, paramount to any efforts made in this area is the requirement to preserve or enhance the Services ability to rapidly satisfy changes in maintenance priorities for primary weapon systems and their components. This must be done while assuring no degradation in peacetime, contingency, deployment and reconstitution support to our military customers. A key element in any management structure's success will be the ability of the of the system owner and operational commanders to participate and influence the decision making process.

The ES Management concept provides a structure that can achieve both mission support and economic objectives. This is possible because there is very little disturbance of the existing maintenance, item management, and operational structure that currently exist. It provides a single focal point for customer involvement through the integrated structure of a single headquarters and maintenance center point of contact. Because it is a joint service structure with inputs from all customers in the decision making process joint service acceptance of key decisions will be much more likely to receive acceptance. By making the management structure joint in nature at both the headquarters and center level the crossfeed of lessons learned, technology, and maintenance

knowledge will allow the organization to promote standardization of processes, eliminate barriers to interservicing ,and gain customer support.

The organizational structure under this concept promotes direct communications rather than adding layers of management in that it uses existing service management structures, and posture/business planning processes. Total oversight of the DoD depot maintenance program is still provided by the DDMC and OASD. Oversight of workload categories are provided by the ES. By developing a joint staff concept there is a reduction in duplicate staffs between the Services.

CONCEPT PAPER FOR AN JOINT DEPOT MAINTENANCE COMMAND (JDMC, DMCOM)

A. Overview

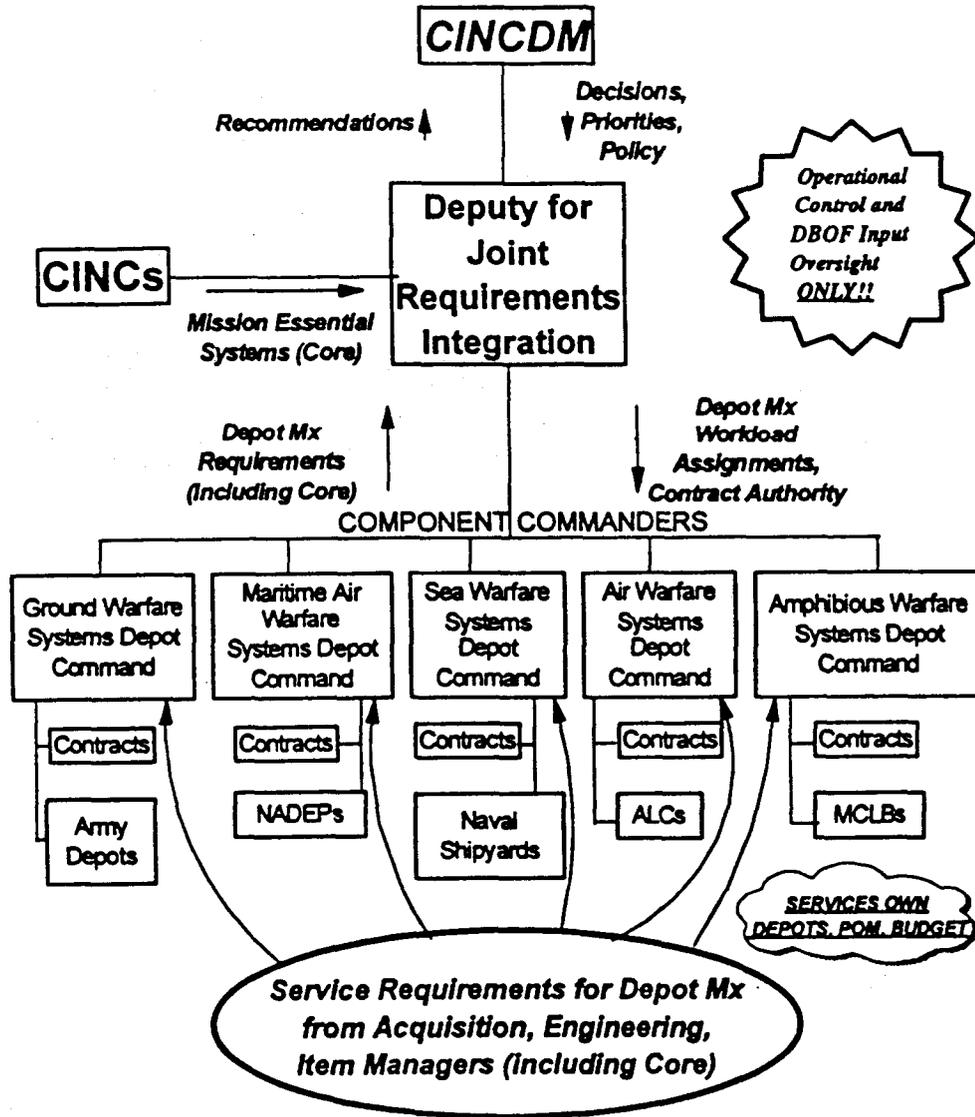
1. JDMC would be a joint command with the functional mission of efficient, effective Defense depot maintenance. While it would not 'own' the personnel or physical plants of the depots, it would control their capability assignments, priorities, capital investments, MILCON, and income from DBOF/DMIF budgets.

2. As shown in Figure 1-1, JDMC would be commanded by the Commander-in-Chief of Depot Maintenance (CINCDM). CINCDM would be a four-star combatant commander empowered by a SECDEF-recommended Presidential modification of the Unified Command Plan under Title 10 Chapter 6, and would report to the Chairman of the Joint Chiefs of Staff. The creation of DMCOM would not require formal Congressional approval. The billet of CINCDM would be rotated among the Services.

3. CINCDM would be supported directly by his Deputy for Joint Requirements Integration and a joint staff of systems maintenance experts and analysts. This staff would provide expert technical knowledge, and review Service depot maintenance requirements for integrated solutions which would optimize efficient spending on depot maintenance. DMCOM's infrastructure would be created by absorbing the commanders from each Service who are responsible for managing the depots and depot maintenance of their Service (Most of DESCOM and parts of NAVSEA, NAVAIR, CGMCLB, and AFMC). The commanders would be assigned as component commanders for five groups of warfare systems as shown in Figure 1-1. Other systems not immediately described by the title of the component commanders would be delegated by CINCDM or assigned during the implementation planning for DMCOM. CINCDM would become the Reporting Senior for his warfare system component commanders who would bring with them the staffs and subordinate commanders who provide depot leadership and manage the incorporation of depot maintenance into the plans of procurement, engineering, and item management decisionmakers for their Service. (Item and system managers would not come with the depot maintenance management staffs but would remain with the Services.) The Service depot maintenance management staffs would be combined into joint offices where possible, and reorganized in a standard configuration to provide each warfare system component commander an equal level of interface with JDMC. Warfare system component commanders would be flag/general officers senior to depot commanders.

4. After consolidation and elimination of redundant billets, and creation of the CINC's personal staff billets, the JDMC staff would probably be smaller than the combined billets of the current Service depot maintenance management staffs.

Figure 1.1. Joint Depot Maintenance Command (JDMC)



5. JDMC could be located anywhere all of the flag/general officer requirements could be accommodated. A metropolitan Washington, DC location would be preferred, although not necessary. Wherever located, CINCDM would not be dual-hatted with any other Service function to avoid the appearance and reality of parent Service pressure on his joint perspective on depot maintenance.

6. Although a DMCOM would allow each Service to retain organic depots, work would be assigned to all depots based on joint decisions and CINCDM's priorities, not simply by sending equipment to depots of the owning Service.

7. With a JDMC, the Services would continue to have Program Objective Memorandum (POM) and budgeting responsibilities for depot maintenance. DMCOM would be the sole source for providing depot maintenance, both organic and contract, and would receive Service requirements for depot maintenance through its component commanders.

8. Using recommendations for most efficient joint utilization of depot funds, CINCDM would make integrated Source of Repair (SOR) and workload assignments for each system and component. A fundamental decision will be whether to conduct organic depot maintenance or contract for the work. Criteria for this decision will include cost effectiveness, desired redundancy, skills maintenance, consolidation of technology, and retention of surge capacity. As the coordinator of all contract maintenance, DMCOM will review existing and potential contracts to consolidate workloads under contracts which provide economies of scale and the least cost to the buyer. Administration of depot maintenance contracts will be assigned to appropriate warfare system component commanders. To make an accurate assessment of the most efficient, capable sources of depot maintenance, standardized reporting of costs by all depots would be required by the JDMC. After balancing all considerations, CINCDM will provide direct his component commanders to respond to Service requirements with an organic capability or a contract and the cost of the work. The Services will then be able to direct their workloads and DBOF/DMIF expenditures to the designated facilities.

9. After an initial review of all capabilities and requirements, CINCDM may elect to set a threshold for workloads below which component commanders may deal directly with a Service without joint requirements integration if no capital investment is required.

10. Component commanders would provide depot maintenance requirements to DMCOM for their Service, and manage their warfare systems' depot maintenance through their assigned depots and contracts. While planned depot maintenance requirements would be integrated with those of other Services by the Deputy for Joint Requirements Integration, to provide flexible response in contingencies, component commanders would have the authority to provide immediate response by their depots to emergent requirements which meet certain criteria such as:

- a. Require quick response (less than 60 days);
- b. Are less than 10 thousand direct labor hours (KDLH), and/or;
- c. Are of short duration (less than 90 days).

11. CINCDM would review and approve all plans for capital investments and MILCON within depot facilities. Some threshold may prove necessary to avoid inhibiting beneficial discretionary spending while still preventing unplanned duplication of capabilities or investment in facilities targeted for eventual disposal.

12. By directing inputs from DBOF/DMIF accounts to each depot, DMCOM would:

- a. ensure depots meet cost goals and accept workloads per SOR criteria;
- b. control depot capability growth and downsizing, and;
- c. phase out facilities which should be closed due to inefficiency or unnecessary redundancy.

13. Warfighting CINCs would advise DMCOM of mission essential systems while the Services would provide requirements for core capabilities. CINCDM would then integrate depot capabilities to meet these requirements in the most efficient manner.

14. DMCOM would participate in the engineering, development and procurement planning for new systems, and assume responsibility for meeting Service requirements with an organic capability or contractor depot maintenance for the system.

15. To stabilize the depot maintenance effort and allow effective planning, CINCDM would assume responsibility for broad policy and goal-setting for all depots. DMCOM would coordinate a business plan for depot maintenance at least annually to advise expected performance, standards and metrics for depot commanders.

B. Functional Relationships. Functional relationships of JDMC with other commands are shown in Table 1-1.

Table 1-1. JDMC Functional Relationships

Function/Area	JDMC Responsibility	Comment
Overall policy on depot maintenance process	Recommends and implements where policy affects external commands and agencies; responsible for internal policy	Broad policy promulgated by Deputy Undersecretary of Defense Logistics
Maintenance production function	Controls with Service ownership	Services staff and maintain facilities
Determining requirements for depot maintenance	Supports	Responsibility of services
Core	Provides integrated capabilities	Integrates combatant commander essential systems and Service essential skills needs
Depot posture/business planning and maintenance workload assignments	Decides	
Mobilization planning and determination	Performs in coordination with combatant commands and Service managers	
Source of repair decisions	Decides	In coordination with Program Executive Officers and Program Managers
Downsizing	Determines through workload assignments	Services present closure recommendations

Depot maintenance business practices and performance measures	Develops and implements	
Depot maintenance information systems (cost, workload control, resource allocation, industrial engineering)	Controls standard functional requirements for and develops. Defines maintenance interface to CIM	
Depot maintenance methods and procedures	Develops and implements	
Procurement/contracting	Is a seller of depot maintenance, not a buyer. Through business planning process, and in conjunction with Service system and item managers, decides if workload will be performed in-house or commercially.	Service system and item managers retain responsibility for buying depot maintenance, whether from organic or contract sources
Depot Maintenance Industrial Fund (DMIF) segment of Defense Business Operating Fund (DBOF)	Controls inputs to depots from DBOF/DMIF	Oversight for Service depot operating, MILCON and capital budgets
Contingency response forces (e.g., battle damage repair teams and in-theater depot(s))	Plans for and trains for in peacetime, deploys in wartime	
Human resource management	Manages own staff personnel	Depots staffed by Services
Maintenance production facilities and resources	Services own	JDMC directs workload assignments above threshold

C. Military Responsiveness In a Contingency.

1. As a functional combatant CINC, CINCDM would enhance the contribution of the depots to warfighting effectiveness by having the same operational commander (the Joint Chiefs) as the regional combatant CINCs. Instead of dealing with the current system of separate, independent, and often redundant Service command structures, the Joint Chiefs would be able to direct CINCDM's integrated depot support of all Services with the same authority they have over the warfighters who rely on the depots. Furthermore, CINCDM's military peer relationship with combatant CINCs would maximize commonality of experience and his motivation to support combat. His subordinate component commanders would provide communications loops to and from Service authorities. He would have direct access to all Defense depot assets to respond rapidly to emergent requirements for depot support above the threshold set for independent response by his component commanders.

2. DMCOM would be a centralized organization which could handle the near-term need for restructuring the depot inventory by sizing it for efficiency and to meet contingency projections. Immediately aware of alternative sources of depot repair and able to direct work requirements anywhere to meet his priorities, CINCDM could take maximum advantage of all

Services' capabilities to provide responsive depot maintenance at the least cost to DoD. He would be less inclined than the current individual Service depot managers to enter expensive contracts, or make capital investments to refacilitize within a parent Service to meet emergent requirements.

3. CINCDM would be evaluated solely for the efficiency and effectiveness of depot maintenance both in peace and in crisis. He would have total military accountability. As their Reporting Senior, he would hold his component commanders accountable for eliminating backlogs and inefficiencies during peacetime while optimizing (not maximizing!) organic and contractor depot maintenance capabilities for contingencies. This would institutionalize an interservice effort to eliminate unnecessary duplication and excess capacity where there is no supporting rationale.

4. With DMCOM, the CINCs and the Services would still be responsible for identifying core systems and skills to fulfill contingency missions and maintain a DoD skill base. CINCDM would consolidate Service requirements, and configure the depot inventory to meet these contingency requirements in the most efficient manner without creating unnecessary redundancy. He would review commercial industrial capability and make decisions which support all Defense components, avoiding redundant contracts awarded by individual Service commands.

D. Military Responsiveness in Peacetime

1. CINCDM would be motivated, even if just for his own career development, to support the objectives of the Joint Chiefs by re-engineering the depot inventory, excess capacity, and duplication to the minimum required. The peacetime benefit of his actions would be a reduction in depot maintenance to the lowest possible cost thereby freeing funds for readiness production, and systems research and development. The combination of military accountability for interservice optimization with military authority maximizes the effect of this new depot maintenance management organization on readiness improvement.

2. CINCDM's military experience and primarily military staff would ensure the commander of depots has a deeply engrained understanding of the critical nature of military readiness. He could be expected to be as responsive as his budget permits to Service readiness requirements.

3. DMCOM would restructure management of all depots into one organization. Depot maintenance policy could be implemented across all Services by one authority which would simplify interaction with OSD for depot maintenance issues. This unified command would stabilize the depot inventory, and centralize or decentralize maintenance as appropriate to provide continuity in the depot SOR for weapon system managers over the life cycle of a weapon system.

4. DMCOM would provide each Service's item managers and weapon system managers one face accountable for depot maintenance of all components of a system thus maintaining and possibly improving closeness between the provider and customers of depot maintenance.

5. CINCDM would speak with one voice for all the Services, providing authoritative advocacy on depot maintenance issues.

E. Efficiency

1. By every measure - customer costs, infrastructure costs, economies of scale and scope - a unified commander tasked with maximizing the return from depot maintenance can be expected to improve efficiency.

2. CINCDM would fully employ the proven tools of cost control, competition, and modern, standardized business practices. With Reporting Senior authority over all depot commanders, he could direct their use of standardized depot metrics, and authoritatively resolve problems of interpretation.

3. Under CINCDM, the motivation, knowledge and authority to enhance depot efficiency would be vested in one command. It is expected that interservicing benefits would be maximized followed by consolidation and a resultant reduction in depot overhead. JDMC would be able to oversee development of a flexible work force at all depots to optimize manning efficiency for peacetime requirements and provide responsive contingency capacity when needed.

F. BRAC Process Interface

1. The lessons learned from the protracted creation of USTRANSCOM would be incorporated into the implementation of DMCOM. Upon approval of the concept, an implementation plan would be drawn up within 45 days by a Joint Staff working group with Service participation.

2. Assuming an implementation decision by September 30, 1993 and a 6-month lead time for order-writing, DMCOM could begin standing up in March 1994, leaving over 6 months to develop a methodology for nominating depots for BRAC 95.

3. Six months would be a minimal time to prepare for the BRAC 95 opportunity to divest depot facilities, but the process should be simplified by having one commander to standardize the methodology. A joint approach to planning depots for the future should reduce the inventory more than individual, non-integrated Service closure nominations. The military nature of DMCOM provides the added benefit of leadership by career officers for whom readiness and support of the warfighters is a prime consideration along with efficiency.

4. While preparing for BRAC 95, DMCOM would be in an optimal position to direct the work of those depots closed by BRAC 93 to other facilities which won't be nominated to subsequent Commissions. JDMC can direct the workloads to the most efficient locations regardless of Service ownership in a manner which avoids having to move the same work twice.

5. Looking beyond BRAC activities, DMCOM would provide continuity and military leadership for all future depot closure initiatives, whether initiated by a BRAC process, or as a result of changes in the political administration. JDMC would avoid the possibility of a non-military manager of depot maintenance evolving into a politically-appointed position over which the Service chiefs have no influence.

G. Implementation

1. A joint command with broad responsibilities and authority is an attractive solution to the Joint Staff but would have to be sold on its merits to other organizations interested in depot maintenance. Many constituencies would rather not see a command with the span of authority of JDMC because it can be expected to restructure decisively and force the divestiture of excess infrastructure.

2. DMCOM would be resisted for characteristics other than its effectiveness. Expected arguments against it include:

- a. A perceived reduction in Service Chief responsibility while unlinking control of the depots from those charged with employing their output to win wars:
- b. The failure of the uniformed military to resolve the depot capacity imbalance to date, and
- c. The control of depot maintenance expenditures in congressional districts by other than political appointees.

3. Even if accepted, these arguments do not mitigate the effectiveness of the unified command approach, and are less relevant than resolving the problem of excessive costs in depot maintenance. Unified commands, such as USTRANSCOM, have provided the answer to integrating multi-Service efforts in areas where parochialism leads to expensive inefficiency, despite the 'turf battles' such commands induce. DMCOM will probably be met with initial resistance from proponents of other management alternatives but, if established quickly and with full authority to make the tough decisions, is the option which best addresses the fundamental needs of the CINCs and Services, while permanently fixing the problem of depot maintenance costs and excess capacity.

CONCEPT PAPER FOR AN DEFENSE DEPOT MAINTENANCE AGENCY

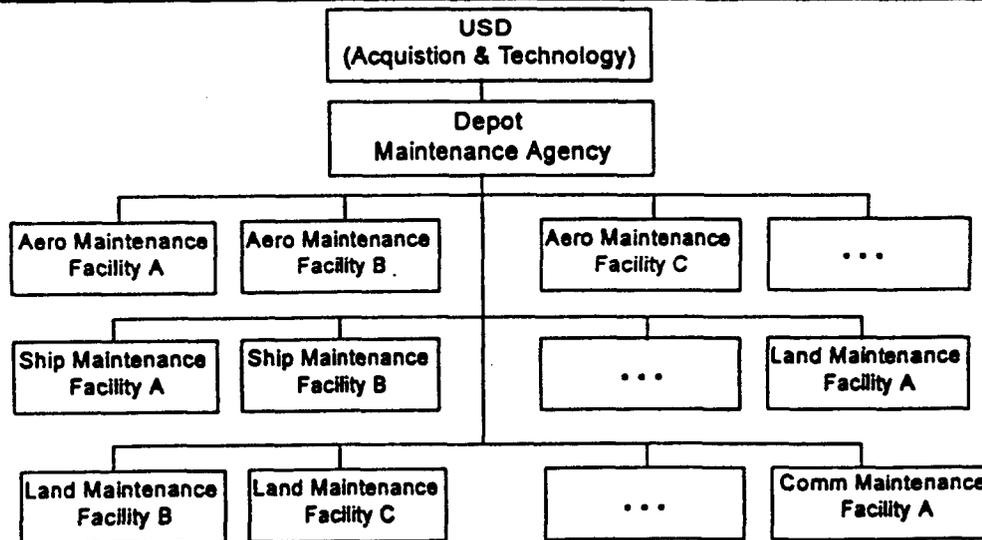
A. Overview

1. The current Defense Depot Maintenance Council and related depot maintenance management structure has limited cross-service control of depot maintenance business decisions. The result has been great difficulty making substantial changes in depot capacity and business processes. Needed are:

- Broader-based, more fundamental downsizing decisions to include cross service resizing of depot capacity to match changing force structure,
- A standard, DoD-wide structure for managing and operating depot-level maintenance, and
- Common maintenance procedures, cost systems, and information systems.

2. Proposed in this concept paper is a Defense Depot Maintenance Agency (DDMA) that reports to the Under Secretary of Defense (Acquisition and Technology) as a peer to the Defense Logistics Agency (Figure 1). The agency director, who will be an established professional with extensive experience in depot maintenance activities, will assume control over all existing depot maintenance operations.

Figure 1: Depot Maintenance Agency Structure



The director will be supported by a headquarters staff of 250-300 military/civilian maintenance management, engineering, comptroller, contracts, and human resources personnel. No new authorizations are needed. These positions will be created by transferring existing depot maintenance policy, posture/business planning, facilities/equipment and information systems billets (as well as the functions) from the services. The agency headquarters will be located in the metropolitan Washington, DC-area.

The agency director, assisted by the agency staff, will develop broad goals, policy and direction for depot activities. As an example, he or she will develop and implement measures of performance to include cost, capacity, utilization, and quality. In coordination with the services, the director will develop and implement objective methodologies for nominating core competencies and determining needed capacity.

The director will directly make mission system, major technology group, and major subsystem workload assignments among depots by centrally controlling assignments that:

- Require any capital investment,
- Exceed 50,000 direct labor hours per annum,
- Involve more than 30 permanent personnel authorizations, and/or
- Require any military construction program actions.

The director will establish standard business rules for the agency to use in making assignments below these thresholds, but, consistent with the concept of centralized authority and decentralized execution, assignments below the thresholds will normally be decided at the depot level.

The director will recommend to the Deputy Under Secretary of Defense (Logistics) and Under Secretary of Defense (Acquisition and Technology) depots for reorganization and/or closure.

In coordination with the program executive officers and program managers, the director and agency staff will make source of repair decisions for new programs.

The director will prepare budget requests to carry out his or her responsibilities.

B. Relationship to Other Offices, Commands, and Agencies

3. It is important to understand the relationship of this agency to service headquarters, combatant commands, material commands, system managers, item managers, and others from the standpoint of functions assumed and not assumed. The relationships would be as shown in the following table:

Functional Relationships

Function/Area	Depot Maintenance Agency Responsibility	Comment
Overall policy on depot maintenance process	Recommends and implements where policy affects external commands and agencies; responsible for internal policy	Broad policy promulgated by Deputy Undersecretary of Defense Logistics
Maintenance production function	Owns	Transferred from service material commands to agency
Determining requirements for depot maintenance	Supports	Responsibility of services
CORE	Determines	In coordination with combatant commands, systems managers, and item managers
Depot posture/business planning and maintenance workload assignments	Decides	
Source of repair decisions	Decides	In coordination with Program Executive Officers and Program Managers
Downsizing	Decides	In coordination with affected commands and agencies subject to review process
Depot maintenance business practices and performance measures	Develops and implements	
Depot maintenance information systems (cost, workload control, resource allocation, industrial engineering)	Controls standard functional requirements for and develops. Defines maintenance interface to CIM	
Depot maintenance methods and procedures	Develops and implements	
Procurement/contracting	Is a seller of depot maintenance, not a buyer. Through business planning process, and in conjunction with system and item managers, decides if workload will be performed in-house or commercially.	System and item managers retain responsibility for buying depot maintenance, whether from Depot Maintenance Agency or from commercial sources
Depot Maintenance Business Area (i.e., DMIF) of Defense Business Operating Fund (DBOF)	Responsible for both operating and capital budgets Also responsible for related direct appropriations (e.g., military construction, mobilization/surge capacity)	
Contingency response forces (e.g., battle damage repair teams and in-theater depot(s))	Plans for and trains for in peacetime, deploys in wartime	

Human resource management	Manages agency personnel	Administratively supported by headquarters commands, material commands, etc.
Maintenance Production Facilities and Resources	Owms	Transferred from service material commands to agency

C. Why Do It, How Does it Work?

4. The motivations for moving to a Depot Maintenance Agency structure, as opposed to an enhanced Defense Depot Maintenance Council as an example, are centered in issues of authority, control, and timeliness during the transition to a smaller depot structure. Achieving agreement among members of a council (or for that matter any collaborative body), all of whom bring different agenda to the table is fraught with delay and difficulty and in some cases is not possible. Further, execution responsibility is diffuse. The need for a hierarchical structure, in fact, was a lesson learned during implementation of the Defense Finance and Accounting Service.

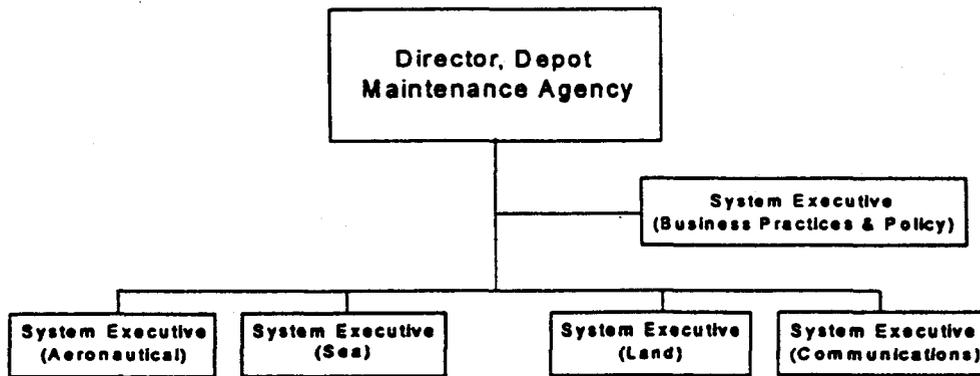
The Depot Maintenance Agency resolves the authority and control problem by centralizing responsibility for depot maintenance operations in a single entity with a single individual in charge who is *the* advocate for depot maintenance. It is envisioned that the Director of the Defense Maintenance Agency would be a flag officer (nominally O-9) or SEES equivalent during the first four years and then revert to an O-8 or SES equivalent after depot workload and facilities are stabilized. His or her staff would comprise both military and civil service personnel with the majority civil service. In order to avoid stove piping over time, the headquarters assignments of key personnel would be for moderate periods of time, say three years. The Director of the Agency would be by policy (and possibly statutorily) responsible for military responsiveness of the agency as well as its efficiency and have the authority to execute this responsibility.

5. In order to provide the link to the final combat customer and to intermediate customers such as program, system, and item managers, while stressing integration, the agency would be aligned along broad combat platform and system lines (e.g., aeronautical, sea, ground, communications). It would not be organized along service lines, an option that would in all likelihood perpetuate current difficulties in integrating workload. Each broad platform and system line would be the responsibility of a System Executive (SE), nominally an O-8 or SES equivalent during the first three years (Figure 2). Additionally, there would be an Executive Officer for Business Processes and Methods who would achieve standardization of business practices (via both policy and oversight) and operate the budgeting process. Where more than one service has a vested interest in a platform/system line, the SE assignments will rotate among the affected services.

In the near term, roughly through December 1994, the SEs' primary task will be deciding, for each platform/system line, how to integrate workload in a way that achieves efficiency in the face of rapidly decreasing workload while assuring readiness and sustainability in war. By December 1994, the SEs will recommend, and be prepared to defend, which depots to realign and or close. All other tasks will be secondary until then.

The effective link to customers is much more dependent on day-to-day, formal and informal coordination at the working level than it is on the actions of a headquarters. It is for this reason that the agency headquarters is intentionally modest in size, will focus on business planning and broad policy, and directly manage only those actions that are above the thresholds shown in paragraph 2. The SEs will not necessarily be physically located in the headquarters; if it makes more sense to collocate with a center of system management or engineering excellence then that option is available.

Figure 2: Agency Headquarters



APPENDIX F
Alternatives Compared with Regard to Functions

Function/Area	Empowered DDMC	Executive Service Management DDMC	Joint Depot Maintenance Command	Defense Depot Maintenance Agency				
	Responsibility	Comment	Responsibility	Comment	Responsibility	Comment	Responsibility	Comment
Overall policy on depot maintenance process	Supports development of internal policies; approves implementation of such policies. Recommends where policy affects external commands and agencies.	Broad policy promulgated by Deputy Undersecretary of Defense Logistics	DDMC Supports development of internal policies; approves ES implementation of such policies. Recommends where policy affects external commands and agencies.	Broad policy promulgated by Deputy Undersecretary of Defense Logistics	Recommends and implements where policy affects external commands and agencies; responsible for internal policy	Broad policy promulgated by Deputy Undersecretary of Defense Logistics	Recommends and implements where policy affects external commands and agencies; responsible for internal policy	Broad policy promulgated by Deputy Undersecretary of Defense Logistics
Maintenance production function					Controls with Service ownership	Services staff and maintain facilities	Owens	Transferred from service material commands to agency
Determining requirements for depot maintenance	Supports	Responsibility of services	Supports	Responsibility of services	Supports	Responsibility of services	Supports	Responsibility of services

CORE	Develops overall guidelines; reviews results of guideline application.	In coordination with Services	DDMC develops overall guidelines; reviews results of guideline application. ES has responsibility for development of core numbers.	DDMC coordinates with Services whereas ES coordinates with assigned depot maintenance functions.	Provides integrated capabilities	Integrates combatant commander essential systems and service essential skills needs.	Determines	In coordination with combatant commands, systems managers, and item managers
Depot posture/ business planning and maintenance workload assignments	Promulgates guidelines; decides above set thresholds		DDMC promulgates guidelines; decides above set thresholds and the ES has responsibility for processes and decision making.	In coordination with Program Executive Officers and Program Managers.			Decides	
Source of repair decisions	Provides general guidelines; establishes criteria; decides above set thresholds	In coordination with Services	DDMC provides general guidelines; establishes criteria; decides above set thresholds. ES has decision authority.	DDMC coordinates with Services and the ES coordinates with Program Executive Officers and Program Managers	Decides	In coordination with Program Executive Officers and Program Managers	Decides	In coordination with Program Executive Officers and Program Managers

Downsizing	Develops broad goals and provides guidelines; develops uniform criteria; integrates as necessary and determines final posture.	In coordination with affected Services	DDMC develops broad goals and provides guidelines; develops uniform criteria; integrates as necessary and determines final posture on a DoD level. ES is responsible for implementation and plans development within depots assigned.	In coordination with affected commands and agencies subject to interservice review process	Determines through workload assignments	Services present closure recommendations	Decides	In coordination with affected commands and agencies subject to review process
Depot maintenance business practices and performance measures	Develops requirements; approves and reviews implementation	Serves to standardize where appropriate; reviews results from an integrated perspective	DDMC develops requirements; approves and reviews implementation and ES develops and implements.	DDMC serves to standardize where appropriate; reviews results from an integrated perspective and ES will standardize and gather data within assigned depots	Develops and implements		Develops and implements	

<p>Depot maintenance information systems (cost, workload control, resource allocation, industrial engineering)</p>	<p>Provides general guidelines; Focuses on any needed standardization</p>	<p>Works to establish comparability and uniformity</p>	<p>DDMC provides general guidelines; Focuses on any needed standardization and ES recommends standard functional requirements.</p>	<p>Works to establish comparability and uniformity</p>	<p>Controls standard functional requirements for and develops. Defines maintenance interface to CIM</p>		<p>Controls standard functional requirements for and develops. Defines maintenance interface to CIM</p>	
<p>Depot maintenance methods and procedures</p>	<p>Facilitates sharing of information</p>		<p>DDMC facilitates sharing of information and ES establishes policies within assigned depot structure and implements.</p>	<p>ES is responsible for the efficiency of operations</p>	<p>Develops and implements</p>		<p>Develops and implements</p>	

<p>Procurement / contracting</p>	<p>Oversight; guidelines for competition programs</p>	<p>Services are responsible for public-public, public-private, and private-private depot maintenance procurement</p>	<p>DDMC provides oversight; guidelines for competition programs and the ES manages the competition program within Service. ES acts as a seller rather than a buyer</p>	<p>Services are responsible for public-public, public-private, and private-private depot maintenance procurement. System managers are responsible for public-public, public-private, and private-private depot maintenance procurement</p>	<p>Is a seller of depot maintenance, not a buyer. Through business planning process, and in conjunction Service with system and item managers, decides if workload will be performed in-house or commercially.</p>	<p>System and item managers retain responsibility for buying depot maintenance, whether from organic or contract sources</p>	<p>Is a seller of depot maintenance, not a buyer. Through business planning process, and in conjunction with system and item managers, decide(s) if workload will be performed in-house or commercially.</p>	<p>System and item managers retain responsibility for buying depot maintenance, whether from Depot Maintenance Agency or from commercial sources</p>
<p>Depot Maintenance Industrial Fund (DIM) segment of Defense Business Operating Fund (DBOF)</p>	<p>Reviews from an integrated perspective; uses limited number of controls to balance overall program</p>	<p>Services develop budgets; DDMC advocates after their review and approval</p>	<p>DDMC reviews from an integrated perspective; uses limited number of controls to balance overall program. ES has responsibility for guidance and development</p>	<p>Services develop budgets within DoD guidelines and assure consistency among all assigned depots; DDMC advocates after their review and approval</p>	<p>Controls inputs to depots from DBOF/DMIF</p>	<p>Oversight for Service depot operating, MILCON and capital budgets</p>	<p>Responsible for both operating and capital budgets Also responsible for related direct appropriations (e.g., military construction, mobilization/surge capacity)</p>	

Contingency response forces (e.g., battle damage repair teams and in-theater depot(s))	Ensures DoD has established appropriate capabilities	Service or jointly developed and supported capabilities	DDMC ensures DoD has established appropriate capabilities and ES plans for and trains for in peacetime, deploys in wartime.	Service or jointly developed and supported capabilities	Plans for and trains for in peacetime, deploys in wartime		Plan(s) for and trains for in peacetime, deploys in wartime	
Human resource management	Broad policy; advocates appropriate policy within DoD and with external constituencies	Supported by headquarters commands, material commands, etc.	DDMC develops broad policy; advocates appropriate policy within DoD and with external constituencies and ES has responsibility for all DMIF.	Supported by headquarters commands, material commands, etc.. Levels driven by Source of Repair assignments and customer funding.	Manages own staff personnel	Depots staffed by Services	Manages agency personnel	Administratively supported by headquarters commands, material commands, etc.
Maintenance Production Facilities and Resources	Coordination of facility use and capital improvements above set thresholds.	Services retain ownership of facilities and responsibility to plan for and advocate resources	DDMC is responsible for coordination of facility use and provision of resources above set thresholds. ES has responsibility and ownership within assigned depots.	Services retain ownership of facilities and responsibility to plan for and advocate resources. The ES has responsibility for all budgeting, approval, and validation of need.	Services own	JDMC directs workload assignments above threshold.	Owens	Transferred from service material commands to agency.

APPENDIX G

ODUSD(L) STUDY TEAM

ODUSD(L) STUDY TEAM

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COL Roy Willis	OCSA

APPENDIX H

GLOSSARY

GLOSSARY

A			
AFMC	Air Force Material Command	GAO	General Accounting Office
AGMC	Aerospace Guidance and Metrology Center	GOCO	Government-Owned Contractor-Operated
ALC	Air Logistic Center	GTE	Gas Turbine Engines
AMARC	Aircraft Maintenance and Regeneration Center	I	
AMC	Army Materiel Command	ICS	Interim Contractor Support
ASD	Assistant Secretary of Defense	IROAN	Inspect and Repair Only As Necessary
B		J	
BRAC	Base Realignment and Closure Commission	JCS	Joint Chief of Staff
C		JDMC	Joint Depot Maintenance Command
CBP	Corporate Business Plan	LAV	Light Armored Vehicle
CGMCLB	Command Guard Marine Corps Logistics Base	M	
CIM	Corporate Information Management	MAR	Marine Corps Logistics Bases
CINC	Commander In Chief	MCLB	Military Construction
CINCDM	Commander in Chief of Depot Maintenance	MILCON	Military Construction
CLS	Contractor Logistics Support	MPF	Maritime Prepositioning Force
CONUS	Continental United States	MRC	Major Regional Contingency
D		MMSA	Maintenance Management Support Activity
DBOF	Defense Business Operating Fund	MSA	Management Support Activity
DCAA	Defense Contract Audit Agency	MTBR	Mean Time Between Removal
DDMC	Defense Depot Maintenance Council	N	
DepSecDef	Deputy Secretary of Defense	NADEP	Naval Aviation Depots
DESCOM	Depot System Command	NAVAIR	Naval Aviation Systems Command
DLA	Defense Logistics Agency	NAVSEA	Naval Sea Systems Command
DLH	Direct Labor Hours	NSY	Navy Shipyard
DLR	Depot Level Repairables	NWC	Naval Warfare Centers
DMA	Depot Maintenance Agency	O	
DMCOMs	Depot Maintenance Commands	OASD	Office of Assistant Secretary of Defense
DMIF	Depot Maintenance Industrial Fund	ODUSD(L)	Office of Deputy Undersecretary of Defense (Logistics)
DMR	Defense Management Review	OC-ALC	Oklahoma City Logistics Center
DMRD	Defense Management Report Decisions	O&M	Operations & Maintenance
DoD	Department of Defense	OEM	Original Equipment Manufacturer
DUSD	Deputy Undersecretary of Defense	OMB	Office of Management and Budget
F		OPTEMPO	Operations Tempo
FAR	Federal Acquisition Regulations	OSD	Office of the Secretary of Defense
FFRDC	Federally Funded Research and Development Center	OTA	Office of Technology Assessment
FMF	Fleet Maintenance Force		

P

POM Program Objective Memorandum
POS Program Objectives Summary
P&L Production and Logistics

R

RCM Reliability Centered Maintenance
RDT&E Research Development Testing and
Engineering

S

SAC Strategic Air Command
SE System Executive
SES Senior Executive Service
Sec Def Secretary of Defense
SOR Source of Repair
SWA Southwest Asia

T

TRANSCOM Transportation Command

U

USN United States Navy
USAF United States Air Force
USMC United States Marine Corps
USD(A) Undersecretary of Defense (Acquisition)

W

WRSK War Readiness Spares Kit

(2) shall not include amounts necessary to recover the costs of a military construction project (as such term is defined in section 2801(b) of title 10, United States Code), other than a minor construction project financed by the Defense Business Operations Fund pursuant to section 2305(c)(1) of such title.

(b) **DEFENSE FINANCE ACCOUNTING SERVICES.**—The full cost of the operation of the Defense Finance Accounting Service shall be financed within the Defense Business Operations Fund through charges for goods and services provided through the Fund.

(c) **MODIFICATION OF CAPITAL ASSET SUB-ACCOUNT.**—Section 342 of the National Defense Authorization Act for Fiscal Year 1993 (Public Law 102-484; 10 U.S.C. 2208 note) is amended—

(1) in subsection (a), by striking out the third sentence;

(2) in subsection (b), by striking out “, to the extent provided for in appropriations Acts”; and

(3) in subsection (d), by striking out “, during fiscal year 1993 and until April 15, 1994.”.

SEC. 334. LIMITATION ON OBLIGATIONS AGAINST THE DEFENSE BUSINESS OPERATIONS FUND.

(a) **LIMITATION.**—(1) The Secretary of Defense may not incur obligations against the supply management divisions of the Defense Business Operations Fund during fiscal year 1994 in a total amount in excess of 65 percent of the total amount derived from sales from such divisions during that fiscal year.

(2) For purposes of determining the amount of obligations incurred against, and sales from, such divisions during fiscal year 1994, the Secretary shall exclude obligations and sales for fuel, commissary and subsistence items, retail operations, repair of equipment and spare parts in support of repair, direct vendor deliveries, foreign military sales, initial outfitting requiring equipment furnished by the Federal Government, and the cost of operations.

(b) **EXCEPTION.**—The Secretary of Defense may waive the limitation described in subsection (a) if the Secretary determines that such waiver is necessary in order to maintain the readiness and combat effectiveness of the Armed Forces. The Secretary shall immediately notify Congress of any such waiver and the reasons for such waiver.

Subtitle D—Depot-Level Activities

SEC. 341. DEPARTMENT OF DEFENSE DEPOT TASK FORCE.

(a) **ESTABLISHMENT.**—The Secretary of Defense shall establish a task force to assess the overall performance and management of depot-level activities of the Department of Defense. The assessment shall include the following:

(1) The identification of the depot-level maintenance workloads that were performed during each of fiscal years 1990 through 1993 for the military departments and the Defense Agencies by employees of the Department of Defense and by non-Federal Government personnel.

(2) An estimate of the current capacity to carry out the performance of depot-level maintenance workloads by employees of the Department of Defense and by non-Federal Government personnel.

(3) An identification of the rationale used by the Department of Defense to support a decision to provide for the performance of a depot-level maintenance workload by employees of the Department of Defense or by non-Federal Government personnel.

(4) An evaluation of the cost, manner, and quality of performance of the depot-level maintenance workload by employees of the Department of Defense and by non-Federal Government personnel.

(5) An evaluation of the manner of determining the core workload requirements for

depot-level maintenance workloads performed by employees of the Department of Defense.

(6) A comparison of the methods by which the rates and prices for depot-level maintenance workloads performed by employees of the Department of Defense are determined with the methods by which such rates and prices are determined for depot-level maintenance workloads performed by non-Federal Government personnel.

(7) A discussion of the issues involved in determining the balance between the amount of depot-level maintenance workloads assigned for performance by employees of the Department of Defense and the amount of depot-level maintenance workloads assigned for performance by non-Federal Government personnel, including the preservation of surge capabilities and essential industrial base capabilities needed in the event of mobilization.

(8) An identification of the depot-level functions and activities that are suitable for performance by employees of the Department of Defense and the depot-level functions and activities that are suitable for performance by non-Federal Government personnel.

(9) An identification of the management and organizational structure of the Department of Defense necessary for the Department to provide the optimal management of depot-level maintenance and the allocation of related resources.

(b) **MEMBERSHIP.**—The task force established pursuant to subsection (a) shall be composed of individuals from the Department of Defense and the private sector who—

(1) have expertise in the management of depot-level activities;

(2) have expertise in acquisition;

(3) have expertise in the management of relevant items and weapon systems; and

(4) are or have been users of depot-level maintenance products produced by employees of the Department of Defense and by non-Federal Government personnel.

(c) **PAY AND TRAVEL EXPENSES.**—(1) Except as provided in paragraph (3), each member of the task force shall be paid at a rate equal to the daily equivalent of the minimum annual rate of basic pay payable for level IV of the Executive Schedule under section 5315 of title 5, United States Code, for each day (including travel time) during which the member is engaged in the actual performance of the duties of the task force.

(2) Each member of the task force shall receive travel expenses, including per diem in lieu of subsistence, in accordance with sections 5702 and 5703 of title 5, United States Code.

(3) Except as provided in paragraph (2), a member of the task force who is an employee of the Department of Defense or a member of the Armed Forces may not receive additional pay, allowances, or benefits by reason of such individual's service on the task force.

(d) **ADMINISTRATIVE SUPPORT.**—The Secretary of Defense shall provide the task force with the administrative, professional, and technical support required by the task force to carry out its duties under this section.

(e) **REPORT.**—Not later than April 1, 1994, the task force shall submit to the Secretary of Defense and the congressional defense committees a report on the results of the assessment conducted under subsection (a) and the recommendations of the task force for any legislative and administrative action the task force considers to be appropriate.

(f) **TERMINATION.**—The task force shall terminate not later than 60 days after submitting its report pursuant to subsection (e).

SEC. 342. LIMITATION ON CONSOLIDATION OF MANAGEMENT OF DEPOT-LEVEL MAINTENANCE WORKLOAD.

The Secretary of Defense may not, during fiscal year 1994, consolidate the management of the depot-level maintenance workload of the Department of Defense under a single Defense-wide entity.

SEC. 343. CONTINUATION OF CERTAIN PERFORMANCE LIMITATIONS ON THE PERFORMANCE OF DEPOT-LEVEL MAINTENANCE.

The Secretary of Defense shall ensure that the percentage limitations applicable to the depot-level maintenance workload performed by non-Federal Government personnel set forth in section 2466 of title 10, United States Code, are adhered to.

SEC. 344. SENSE OF CONGRESS ON THE PERFORMANCE OF CERTAIN DEPOT-LEVEL WORK BY FOREIGN CONTRACTORS.

(a) **SENSE OF CONGRESS.**—It is the sense of the Congress that the Secretary of Defense should not contract for the performance by a person or organization described in subsection (b) of any depot-level maintenance work on equipment located in the United States if the Secretary determines that the work could be performed in the United States on a cost-effective basis and without significant adverse effect on the readiness of the Armed Forces.

(b) **COVERED PERSONS AND ORGANIZATIONS.**—A person or organization referred to in subsection (a) is a person or organization which is not part of the national technology and industrial base, as such term is defined in section 2491(1) of title 10, United States Code.

SEC. 345. SENSE OF CONGRESS ON THE ROLE OF DEPOT-LEVEL ACTIVITIES OF THE DEPARTMENT OF DEFENSE.

(a) **FINDINGS.**—The Congress makes the following findings:

(1) The depot-level maintenance and repair activities of the Department of Defense provide the Armed Forces with a critical capacity to respond to the needs of the Armed Forces for depot-level maintenance and repair of weapon systems and equipment.

(2) The depot-level maintenance and repair activities of the Department of Defense provide the Department with capabilities that are uniquely suited to responding to the increased need for repair and maintenance of weapon systems and equipment which may arise in times of national crisis.

(3) The skilled employees and equipment of the depot-level maintenance and repair activities of the Department of Defense are an essential component of the overall defense industrial base of the United States.

(4) The critical role of the depot-level maintenance and repair activities of the Department of Defense is recognized in section 2466 of title 10, United States Code, which provides that the Secretary of a military department and, with respect to a Defense Agency, the Secretary of Defense, may not contract for the performance by non-Federal Government personnel of more than 40 percent of the depot-level maintenance workload for the military department or the Defense Agency.

(5) Maintenance of this critical industrial capability in the Department of Defense requires that an appropriate level of the depot-level maintenance and repair of new weapon systems be assigned to depot-level maintenance and repair activities of the Department of Defense.

(b) **SENSE OF CONGRESS.**—It is the sense of the Congress that, in order to maintain the critical depot-level maintenance and repair capability for military weapon systems and equipment, the Secretary of Defense shall, to the maximum extent practicable, ensure

that a sufficient amount of the depot-level maintenance and repair of new weapon systems and equipment is assigned to depot-level maintenance and repair activities of the Department of Defense, consistent with the requirements of section 2466 of title 10, United States Code.

SEC. 344. CONTRACTS TO PERFORM WORKLOADS PREVIOUSLY PERFORMED BY DEPOT-LEVEL ACTIVITIES OF THE DEPARTMENT OF DEFENSE.

Section 2469 of title 10, United States Code, is amended—

(1) by inserting "(a) REQUIREMENT FOR COMPETITION.—" before "The Secretary of Defense";

(2) by striking out "threshold";

(3) by striking out "unless" and all that follows and inserting in lieu thereof "to performance by a contractor unless the Secretary uses competitive procedures for the selection of the contractor to perform such workload."; and

(4) by adding at the end the following new subsection:

"(b) INAPPLICABILITY OF OMB CIRCULAR A-76.—The use of Office of Management and Budget Circular A-76 shall not apply to a performance change under subsection (a)."

SEC. 347. AUTHORITY TO WAIVE CERTAIN CLAIMS OF THE UNITED STATES.

(a) DESCRIPTION OF CLAIMS INVOLVED.—This section applies with respect to any claim of the United States against an individual which relates to a bonus or other payment awarded to such individual under a productivity gainsharing program based on work performed by such individual as an employee of Naval Aviation Depot, Norfolk, Virginia, or as an employee of Naval Aviation Depot, Jacksonville, Florida, after September 30, 1988, and before October 1, 1992.

(b) WAIVER AUTHORITY AVAILABLE WITHOUT REGARD TO AMOUNT INVOLVED.—Notwithstanding the limitation set forth in section 2774(a)(2)(A) of title 10, United States Code, any waiver authority under section 2774(a)(2) of such title may be exercised, with respect to any claim described in subsection (a) of this section, without regard to the amount involved.

(c) REPORT.—Not later than March 1, 1994, the Secretary of the Navy shall submit to the congressional defense committees a report that specifies—

(1) the circumstances under which each overpayment of a bonus or other payment referred to in subsection (a) was made;

(2) the number of individuals to whom such an overpayment was made;

(3) the total amount of such overpayments; and

(4) any action planned or initiated by the Secretary to prevent the occurrence of similar overpayments in the future.

(d) DEFINITION.—In this section, the term "productivity gainsharing program" means a productivity gainsharing program established under chapter 45 or section 5407 of title 5, United States Code, or Executive Order No. 12637 (31 U.S.C. 501 note).

Subtitle E—Commissaries and Military Exchanges

SEC. 351. PROHIBITION ON OPERATION OF COMMISSARY STORES BY ACTIVE DUTY MEMBERS OF THE ARMED FORCES.

(a) IN GENERAL.—Chapter 49 of title 10, United States Code, is amended by inserting after section 976 the following new section:

"§977. Operation of commissary stores: assignment of active duty members generally prohibited

"(a) GENERAL RULE.—A member of the armed forces on active duty may not be assigned to the operation of a commissary store.

"(b) EXCEPTION FOR DCA DIRECTOR.—The Secretary of Defense may assign an officer on the active-duty list to serve as the Director of the Defense Commissary Agency.

"(c) EXCEPTION FOR CERTAIN ADDITIONAL MEMBERS.—Beginning on October 1, 1996, not more than 18 members (in addition to the officer referred to in subsection (b)) of the armed forces on active duty may be assigned to the Defense Commissary Agency. Members who may be assigned under this subsection to regional headquarters of the agency shall be limited to enlisted members assigned to duty as advisors in the regional headquarters responsible for overseas commissaries and to veterinary specialists.

"(d) EXCEPTION FOR CERTAIN NAVY PERSONNEL.—(1) The Secretary of the Navy may assign to the Defense Commissary Agency a member of the Navy on active duty whose assignment afloat is part of the operation of a ship's food service or a ship's store. Any such assignment shall be on a nonreimbursable basis.

"(2) The number of such members assigned to the Defense Commissary Agency during any period before October 1, 1996, may not exceed the number of such members so assigned on October 1, 1993. After September 30, 1996, the number of such members so assigned may not exceed the lesser of (A) the number of members so assigned on October 1, 1993, and (B) 400."

(b) CLERICAL AMENDMENT.—The table of sections at the beginning of such chapter is amended by inserting after the item relating to section 976 the following new item:

"977. Operation of commissary stores: assignment of active duty members generally prohibited."

SEC. 352. MODERNIZATION OF AUTOMATED DATA PROCESSING CAPABILITY OF THE DEFENSE COMMISSARY AGENCY.

In order to perform inside the Defense Commissary Agency all automated data processing functions of the Agency as soon as possible, the Secretary of Defense shall, consistent with other applicable law, take any action necessary to expedite the modernization of the automated data processing capability of the Agency, including the adoption of the use of commercial grocery industry practices and financial management programs with respect to such processing.

SEC. 353. OPERATION OF STARS AND STRIPES BOOKSTORES OVERSEAS BY THE MILITARY EXCHANGES.

(a) REQUIREMENT.—The Secretary of Defense shall provide for the commencement, not later than October 1, 1994, of the operation of Stars and Stripes bookstores outside of the United States by the military exchanges.

(b) REGULATIONS.—The Secretary of Defense shall prescribe regulations to carry out subsection (a).

SEC. 354. AVAILABILITY OF FUNDS FOR RELOCATION EXPENSES OF THE NAVY EXCHANGE SERVICE COMMAND.

Of funds authorized to be appropriated under section 301(2), not more than \$10,000,000 shall be available to provide for the payment of expenses incurred by the Navy Exchange Service Command to relocate functions and activities from Naval Station, Staten Island, New York, to Norfolk, Virginia.

Subtitle F—Other Matters

SEC. 361. EMERGENCY AND EXTRAORDINARY EXPENSE AUTHORITY FOR THE INSPECTOR GENERAL OF THE DEPARTMENT OF DEFENSE.

Section 127 of title 10, United States Code, is amended—

(1) in subsection (a)—

(A) in the first sentence, by inserting "the Inspector General of the Department of Defense," after "the Secretary of Defense";

(B) in the second sentence, by inserting "or the Inspector General" after "the Secretary concerned"; and

(C) in the third sentence, by inserting "or the Inspector General" after "The Secretary concerned";

(2) in subsection (b), by inserting "by the Inspector General to any person in the Office of the Inspector General," after "the Department of Defense"; and

(3) in subsection (c)—

(A) by inserting "(1)" after "(c)"; and

(B) by adding at the end the following new paragraph:

"(2) The amount of funds expended by the Inspector General of the Department of Defense under subsections (a) and (b) during a fiscal year may not exceed \$400,000."

SEC. 362. AUTHORITY FOR CIVILIAN EMPLOYEES OF THE ARMY TO ACT ON REPORTS OF SURVEY.

Section 4835 of title 10, United States Code, is amended—

(1) in subsection (a), by inserting "or any civilian employee of the Department of the Army" after "any officer of the Army"; and

(2) in subsection (b), by striking out "an officer of the Army designated by him," and inserting in lieu thereof "the Secretary's designee. The Secretary may designate officers of the Army or civilian employees of the Department of the Army to approve such action."

SEC. 363. EXTENSION OF GUIDELINES FOR REDUCTIONS IN CIVILIAN POSITIONS.

(a) EXTENSION OF GUIDELINES.—Section 1597 of title 10, United States Code, is amended—

(1) in subsection (a), by striking out "during fiscal year 1993" and inserting in lieu thereof "during a fiscal year"; and

(2) in subsection (b), by striking out "for fiscal year 1993".

(b) UPDATE OF MASTER PLAN.—Section 1597(c) of such title is amended—

(1) in paragraph (1), by striking out "for fiscal year 1994" and inserting in lieu thereof "for each fiscal year";

(2) in subparagraph (A) of paragraph (3), by adding at the end the following new clause:

"(vi) The total number of individuals employed by contractors and subcontractors of the Department of Defense under a contract or subcontract entered into pursuant to Office of Management and Budget Circular A-76 to perform commercial activities for the Department of Defense, a military department, a defense agency, or other component."; and

(3) by adding at the end the following new paragraph:

"(4) The Secretary of Defense shall include in the materials referred to in paragraph (1) a report on the implementation of the master plan for the fiscal year immediately preceding the fiscal year for which such materials are submitted."

SEC. 364. AUTHORITY TO EXTEND MAILING PRIVILEGES.

Paragraph (1) of section 3401(a) of title 39, United States Code, is amended—

(1) in the matter before subparagraph (A)—

(A) by inserting "an individual who is" before "a member"; and

(B) by inserting "or a civilian, otherwise authorized to use postal services at Armed Forces installations, who holds a position or performs one or more functions in support of military operations, as designated by the military theater commander," after "section 101 of title 10"; and

(2) in subparagraphs (A) and (B), by striking "the member" and inserting "such individual".

The United States has reduced its armed forces by approximately 30 percent, since the end of the Cold War and the dissolution of the former Soviet Union. However, the infrastructure has decreased only 15 percent., mainly through the base realignment and closure process. After BRAC 1993, defense officials warned that BRAC 1995 would be the toughest yet in a process that already has eliminated 250 bases, including 70 major facilities. The Secretary of Defense last month partly allayed such fears, saying fewer bases would be recommended this year than in 1993, when 130 were recommended.

In January 1994, the Secretary of Defense stated a BRAC) 1995 goal of a 15 percent reduction in infrastructure based on plant replacement value. Accordingly, the Secretary required cross-service and intra-service opportunities to be pursued throughout the BRAC 1995 process. A number of cross-service teams, lead by Office of the Secretary of Defense officials were established. These teams requested such data from the Services, analyzed the data, and made recommendations to the Services to reduce and/or consolidate their infrastructure. The Services responded to the Secretary with their recommendations. While the Secretary's final recommendations will not be officially known until the list is published in the Federal Register, preliminary indications are that they will be significantly fewer than originally recommended by the cross-service teams.

The BCARC 1995 Cross-Service Team is concerned that without additional installations being added to the Secretary's recommended list opportunities will be lost to reduce unneeded/excess DOD capacity in the areas of depot maintenance, test and evaluation, and laboratory infrastructure:

Depot Maintenance

Over the past 5 years, DoD's annual depot maintenance costs have been approximately \$13 billion. There are 24 maintenance depots that will remain after the 7 closures recommended by the 1991 and 1993 Commissions have been implemented. A well respected study performed by General Went (USMC ret.) stated that only 72% of the depot maintenance capacity will be utilized in FY 1997. DOD's maintenance depot cross-service team identified 5 to 8 depots that could be closed, however, we believe the Secretary's recommendations to the BCARC will include only three maintenance depots.

Test and Evaluation

Test and evaluation funding and infrastructure have generally been protected from down sizing. Within DOD there are currently 19 major test ranges, with \$5 billion operations cost and \$20 billion to \$30 billion in capital investment. DoD has not aggressively pursued consolidation of major test and evaluation facilities even through testing of air vehicles, electric systems and armament weapons show significant excess capacity and the greatest potential for cross-Service consolidation.

DoD's Project Reliance was established to consolidate existing test and evaluation capacity but it has not been effective because: (1) its focus shifted from consolidation to future test

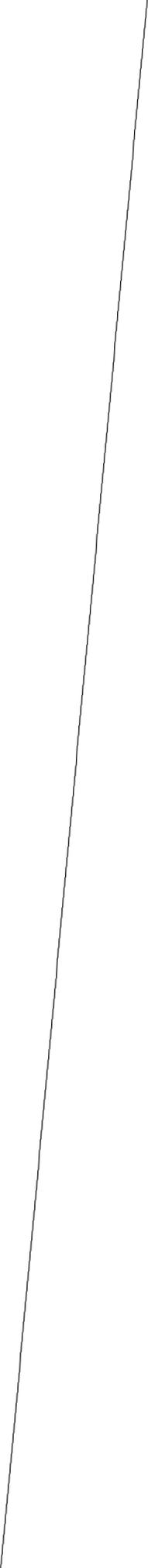
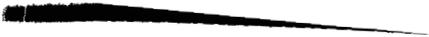
investments, (2) the Services were allowed to retain their existing test and evaluation capabilities and funding authority, and (3) the Reliance study methodology had major weaknesses.

Laboratories

There are at least 81 laboratories with DoD and the Services: 1 DoD, 28 Army, 28 Navy, and 24 Air Force. Their multi-billion dollar budgets (amount unknown) have declined only slightly in real terms since 1989 and they remain about the same size as they were during the mid-1980's Cold War peak. An April 1994 Defense Science Board report states :

“The U.S. Combatant Commands are undergoing great change to reflect the fundamental changes in the threats they face with the end of the Cold War***. Forces are shrinking and their missions are evolving. The Defense laboratory system on which the combatant commands must rely for their technological edge has not kept pace. The laboratory system remains an obsolescent artifact of the Cold War”.

The report also states that the laboratory system has not kept pace with changing patterns of technology generation. No longer does DoD drive all militarily critical, cutting edge technologies. American industry, universities, and other government agencies play significant roles. Accordingly, one of the DSB's recommendations is that an additional 20 percent cut in the laboratories' Civil Service personnel (above the 4 percent per annum directed by DPG 95-99) is necessary and the cut can be achieved through closures and realignments.

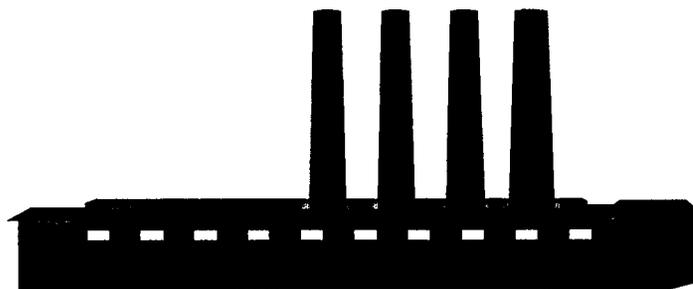


DEPOT MAINTENANCE and BRAC 95

DOD DEPOT MAINTENANCE TASK FORCE & BRAC 95

DALO-SMM

31 JAN 94



DEPOT MAINTENANCE and BRAC 95 EXPECTED OUTCOMES

-- PROVIDE AN OVERVIEW AND CLEAR UNDERSTANDING OF THE VARIOUS GROUPS CURRENTLY INVOLVED IN THE DEPOT MAINTENANCE AND BRAC 95 EFFORTS

-- PROVIDE STATUS REPORTS BY THE ARMY REPRESENTATIVE ON EACH OF THE THREE SUPPORT GROUPS OF THE DEPOT MAINTENANCE TASK FORCE, TO INCLUDE:

+ CURRENT GROUP TASKERS

+ PLAN OF ACTION

+ MILESTONES

-- AGREEMENT ON THE COORDINATION, APPROVAL, AND FEEDBACK LOOPS TO BE FOLLOWED

DEPOT MAINTENANCE and DRAC 95

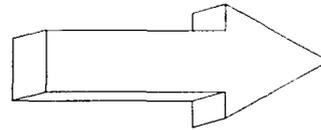
AGENDA

1500-1505	INTRODUCTION	MG ROBISON, ADCSLOG
1505-1530	OVERVIEW	COL AHERN, DALO-SMM
1530-1540	STATUS REPORT - MANAGEMENT ANALYSIS GROUP	COL JONES, HQ, AMC
1540-1550	STATUS REPORT - CAPACITY & DATA ANALYSIS GROUP	MR. SCHAFFER, AMSAA
1550-1600	STATUS REPORT - COST, PRICE & QUALITY ANALYSIS GROUP	MR. ZARDECKI, TOAD
1600-1700	EXECUTIVE SESSION: COORDINATION & FEEDBACK MECHANISMS	

DEPOT MAINTENANCE and BRAC 95

*DEPOT
MAINTENANCE
"POLICY"
PROCESS*

WILL DRIVE



*BRAC 95
PROCESS*

AND INFLUENCE

- + *CORE DETERMINATION*
- + *INTERSERVICING POLICIES*
- + *PUBLIC/PRIVATE BALANCE*

- + *INFRASTRUCTURE AND
CAPACITY ANALYSIS*
- + *REALIGNMENT AND
CLOSURE OPTIONS*

DDMC

*DOD
DEPOT MAINT
TASK FORCE*

*OSD/ARMY
BRAC
ANALYSIS*

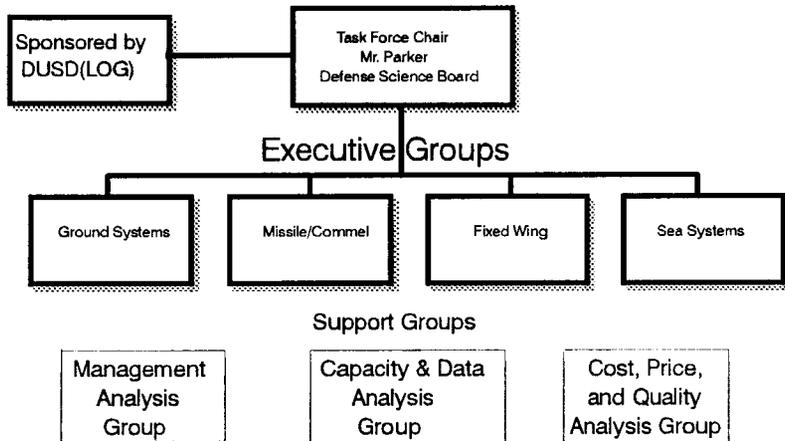
*DEFENSE
INDUSTRIAL
BASE
COUNCIL*

DEPOT MAINTENANCE FUNCTIONAL AREA

Who are the players?

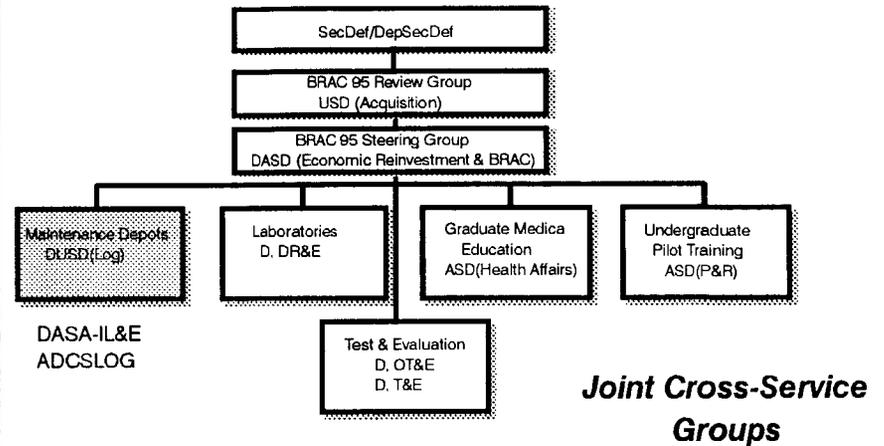
Respond to Congressional Tasker
" 9 Questions"

DoD Depot Maintenance Task Force



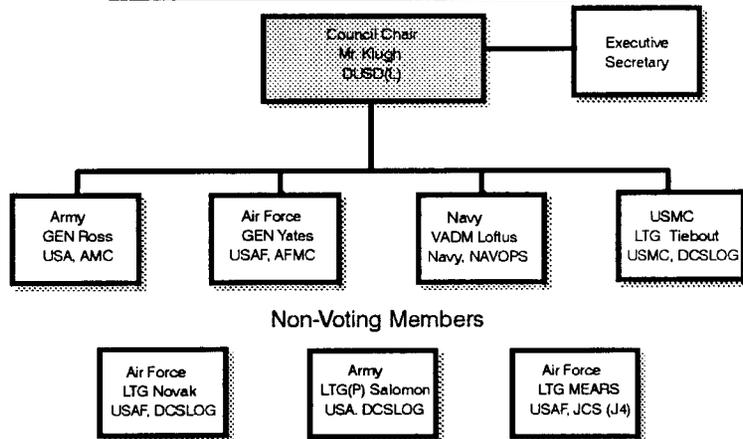
Inter-Service BRAC Analysis

OSD BRAC 95 Management Structure



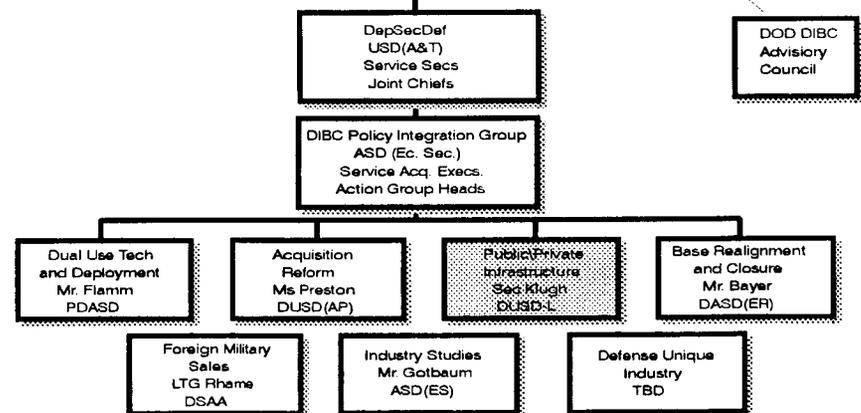
On-going Program Oversight for Depot Maintenance

Defense Depot Maintenance Council



Policy for Integration of Industrial Base
(Jan 94 DoD "Off-Site")

DoD Defense Industrial Base Council



DEPOT MAINTENANCE and BRAC 95

DEPOT MAINTENANCE TASK FORCE "9 QUESTIONS"

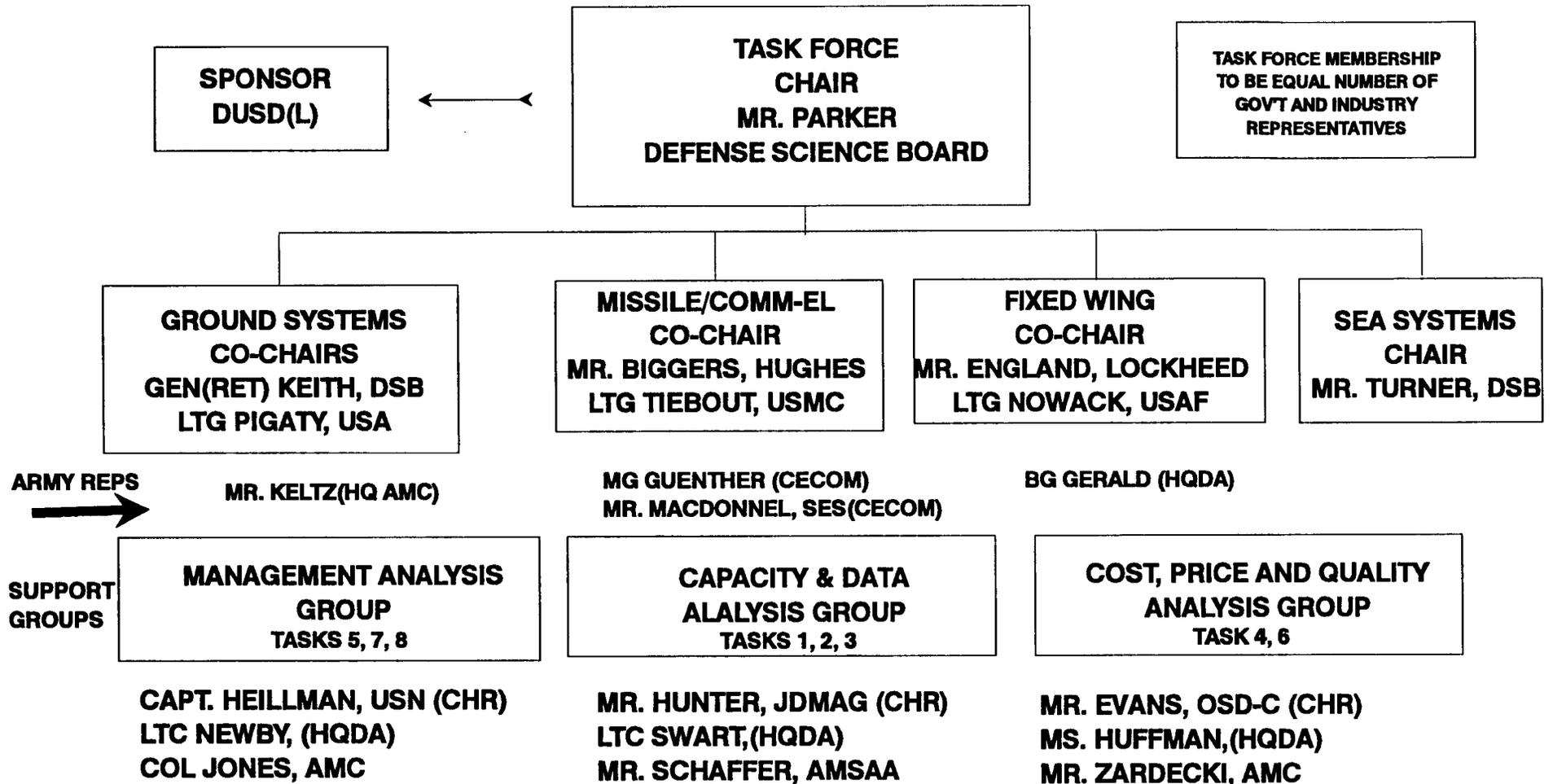
ASSESS, AND REPORT TO CONGRESS BY 1
APRIL, 1994, THE OVERALL PERFORMANCE AND
MANAGEMENT OF DOD DEPOT-LEVEL
ACTIVITIES



ORGANIZATION



DEPOT MAINTENANCE TASK FORCE



MISSION..... BY 1 APR 94, REPORT TO CONGRESS AND SECDEF RESULTS OF THE TASK FORCE ASSESSMENT OF THE OVERALL PERFORMANCE AND MANAGEMENT OF DOD DEPOT MAINTENANCE ACTIVITIES AS CITED IN FY 94 DEFENSE AUTHORIZATION ACT AND PROVIDE RECOMMENDED LEGISLATION AND ADMINISTRATIVE ACTIONS TO IMPROVE THE OPTIMAL MANAGEMENT OF DEPOT LEVEL MAINTENANCE AND THE ALLOCATION OF RELATED RESOURCES.

DEPOT MAINTENANCE and BRAC 95

CAPACITY & DATA ANALYSIS GROUP TASKS

1 IDENTIFY WORKLOADS PERFORMED IN FYS
90, 91, 92 & 93
- FOR THE MILITARY DEPARTMENTS & DEFENSE
AGENCIES BY DOD AND PRIVATE SECTOR EMPLOYEES

2 ESTIMATE CURRENT CAPACITY TO PERFORM
DEPOT-LEVEL WORKLOADS BY DOD & PRIVATE
SECTOR EMPLOYEES

3 IDENTIFY RATIONALE USED BY DOD TO SUPPORT
DECISION TO PROVIDE FOR THE PERFORMANCE
OF DEPOT-LEVEL MAINTENANCE WORKLOADS
BY DOD AND PRIVATE SECTOR EMPLOYEES

IMPACTS PUBLIC/PRIVATE BALANCE

More Tasks →

DEPOT MAINTENANCE and BRAC 95

COST, PRICE, AND QUALITY GROUP TASKS

4

EVALUATE:

- COST OF PERFORMANCE
 - MANNER OF PERFORMANCE
 - QUALITY OF PERFORMANCE
- OF DEPOT-LEVEL MAINTENANCE WORKLOADS
ACCOMPLISHED BY DOD AND PRIVATE SECTOR
EMPLOYEES**

6

COMPARE:

- METHODS BY WHICH RATES & PRICES ARE DETERMINED
FOR DEPOT-LEVEL MAINTENANCE WORKLOAD PERFORMED BY
DOD EMPLOYEES...
- WITH**
- METHODS BY WHICH RATES & PRICES ARE DETERMINED FOR
MAINTENANCE WORKLOADS PERFORMED BY PRIVATE SECTOR
EMPLOYEES

***IMPACTS PUBLIC/PRIVATE BALANCE &
INTERSERVICING***

MORE TASKS →

DEPOT MAINTENANCE and BRAC 95

MANAGEMENT ANALYSIS GROUP TASKS

5

EVALUATE:

- MANNER OF DETERMINING THE CORE WORKLOAD REQUIREMENTS FOR DEPOT-LEVEL MAINTENANCE WORKLOADS PERFORMED BY DOD EMPLOYEES

7

DISCUSS ISSUES INVOLVED IN DETERMINING THE BALANCE BETWEEN:

- THE AMOUNT OF DEPOT-LEVEL MAINTENANCE WORKLOADS ASSIGNED FOR PERFORMANCE BY DOD EMPLOYEES AND
- THE AMOUNT OF DEPOT-LEVEL MAINTENANCE WORKLOADS ASSIGNED FOR PERFORMANCE BY PRIVATE SECTOR EMPLOYEES
- INCLUDE:
 - + PRESERVATION OF SURGE CAPABILITIES, AND
 - + ESSENTIAL INDUSTRIAL BASE CAPABILITIES NEEDED IN THE EVENT OF MOBILIZATION

8

IDENTIFY DEPOT -LEVEL FUNCTIONS AND ACTIVITIES THAT ARE SUITABLE FOR PERFORMANCE BY DOD EMPLOYEES AND THOSE SUITABLE FOR PERFORMANCE BY PRIVATE SECTOR EMPLOYEES

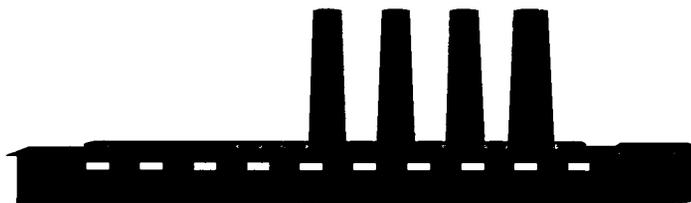
**IMPACTS: CORE
Interservicing/Public
Private Balance**

DEPOT MAINTENANCE and BRAC 95

INTEGRATION GROUP TASK

9

IDENTIFY THE DOD MANAGEMENT AND ORGANIZATIONAL STRUCTURE NECESSARY FOR THE DEPARTMENT OF DEFENSE TO PROVIDE OPTIMAL MANAGEMENT OF DEPOT-LEVEL MAINTENANCE AND THE ALLOCATION OF RELATED RESOURCES



**IMPACTS: Core, Interservicing, Public/Private Balance
" How maintenance depots will support future warfighting"**

DEPOT MAINTENANCE and BRAC 95

SEC DEUTCH ALSO DIRECTED THE DOD TASK FORCE TO ADDRESS THESE TWO ADDITIONAL AREAS:

(TIME & RESOURCES PERMITTING)

A. WAYS TO IMPROVE OVERALL EFFICIENCY OF DEPOT MAINTENANCE IN ORGANIC AND PRIVATE INDUSTRIAL FACILITIES, INCLUDING THE MOST PROMISING STRATEGIES FOR SIGNIFICANTLY IMPROVING NEW TECHNOLOGY APPLICATIONS, PROCESS IMPROVEMENTS, MODERN BUSINESS PRACTICES, & RELIABILITY IMPROVEMENTS.

B. DEPOT MAINTENANCE PLANS FOR NEW ITEMS OF EQUIPMENT AND COMPARE RELATIVE COST EFFECTIVENESS OF ORGANIC AND PRIVATE INDUSTRY FACILITIES, INCLUDING MAJOR WPN SYSTEMS, MISSILE SYSTEMS, ELECTRONICS, SOFTWARE, etc.



CONFLICTS W/CONCEPT OF "CORE"

DEPOT MAINTENANCE and BRAC 95

ARMY'S BRAC 95 MISSION

ELIMINATE EXCESS INFRASTRUCTURE AND CONSOLIDATE FUNCTIONS THROUGH BASE CLOSURE/ REALIGNMENT TO SUPPORT THE ARMY'S VISION OF A 10 DIVISION, CONUS BASED, FORCE PROJECTION ARMY.

RESTATED DEPOT MAINTENANCE MISSION

TO ENSURE THE ARMY'S CONTINUING CAPABILITY TO SUPPORT AND SUSTAIN DEPOT-LEVEL MAINTENANCE FOR THOSE WEAPON SYSTEMS AND EQUIPMENT NECESSARY FOR WARFIGHTING.

DEPOT MAINTENANCE and BRAC 95

OSD EXPECTATIONS

DEPSECDEF MEMO TO SERVICES 7 JAN 94:

- ➔ "REDUCE BASE STRUCTURE COMMENSURATE WITH PLANNED DRAWDOWNS AND PROGRAMMED WORKLOAD REDUCTIONS."
- ➔ "REDUCE INFRASTRUCTURE (PRV) BY NOT LESS THAN 15% (DOD-WIDE)."
- ➔ "ACHIEVE SIGNIFICANT CROSS-SERVICE REALIGNMENTS."
- ➔ "INSURE BASE CLOSURES/SAVINGS ROUGHLY EQUAL THAT OF ALL PREVIOUS BRACs."

DEPOT MAINTENANCE and BRAC 95

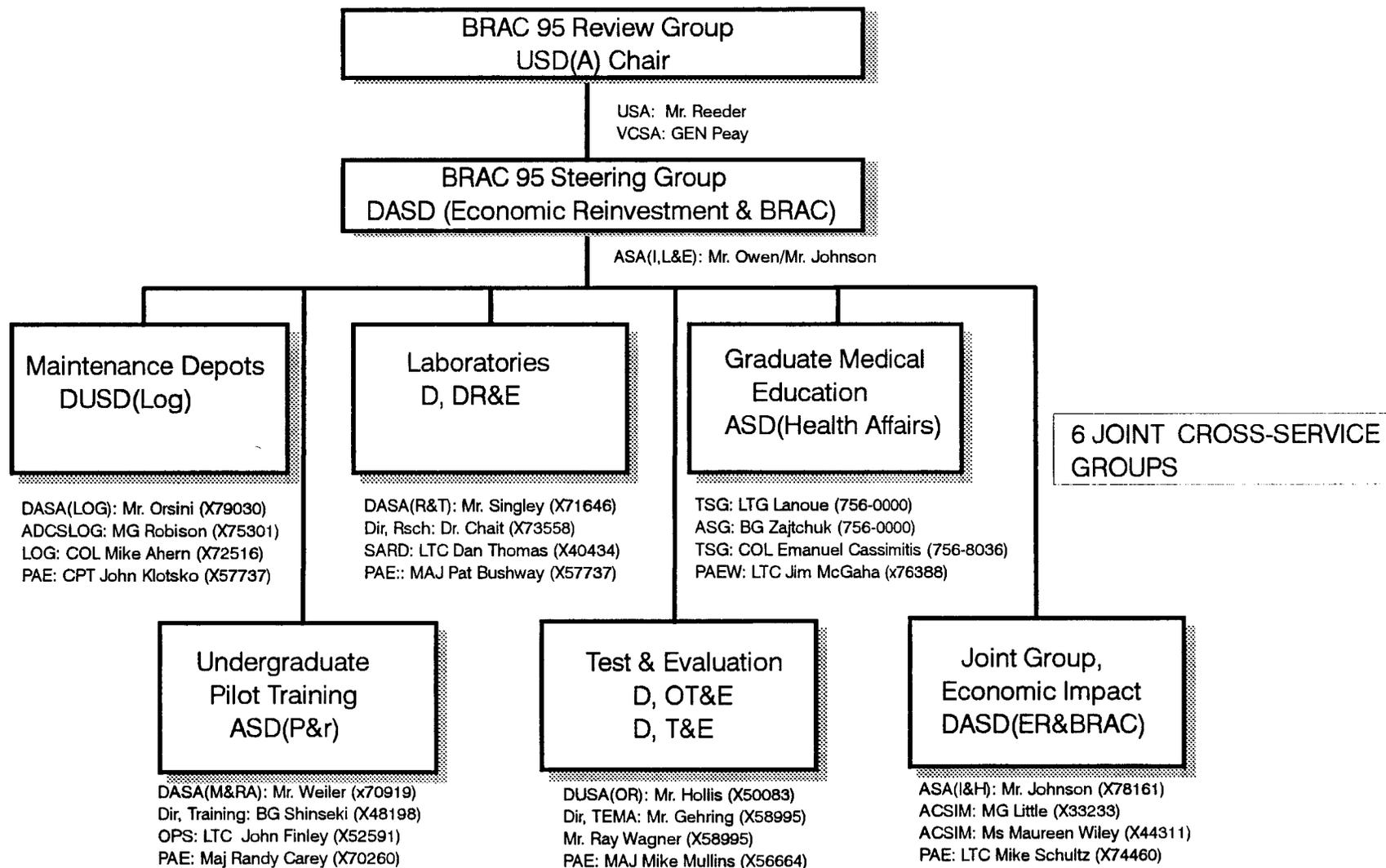
THE OSD GAME PLAN

**(SERVICES WILL STILL RUN THE BALL,
WITH STRONG COACHING FROM THE OSD STAFF)**

- ➡ CHARGE SERVICES WITH RESPONSIBILITY FOR REVIEW OF "OPERATIONAL BASES" AND ALL ANALYTICAL SUPPORT".**
- ➡ EXERCISE STRONG OVERSIGHT OF SERVICE ANALYSIS USING A COMMITTEE SYSTEM (ANALOGOUS TO THE "BOTTOM UP REVIEW").**
- ➡ IN CROSS-SERVICE FUNCTIONAL AREAS, EMPOWER OSD-LED STUDY GROUPS WITH AUTHORITY TO :**
 - ESTABLISH PARAMETERS FOR SERVICE ANALYSIS**
 - IDENTIFY & RECOMMEND OUT-SOURCING POLICIES**
 - DEVELOP CLOSURE/REALIGNMENT ALTERNATIVES AND TARGETS.**

DEPOT MAINTENANCE and BRAC 95

OSD BRAC 95 Management Structure



DEPOT MAINTENANCE and BRAC 95

Draft Milestones the Joint Cross-Service Group (Depot Maintenance)

- February 1 - Start Developing Draft Standard Data Element Definitions and Common Baselines for Service Depot BRAC Analysis
- February 28 - Publish Standard Data Element Definitions and Common Baselines for Service Depot BRAC Analysis
- March 1 - Start review of Service CORE Quantification
- March 31 - Issue Analysis Guidance
- April 4 - Assess Results of Depot Maintenance Task Force
- April 15 - Begin Review of Unique Capabilities of Depots
- April 30 - Complete Review of Unique Capabilities of Depots
- May 30 - Receipt of Certified Data from Services

Continued

DEPOT MAINTENANCE and BRAC 95

Draft Milestones the Joint Cross-Service Group (Depot Maintenance) Continued

June 24 - Propose Tentative Closure and Realignment Targets and Complete Review of Military Component Excess Capacity Analysis

July 29 - Assessment of Alternatives and Targets on Supply Activities

August 5 - Begin Monthly In Process Military Components and Defense Agency Reviews and Analysis of Cross-Service Tradeoffs

December 15 - Evaluate Impact of Final Force Structure Guidance

January 4, 95 - Begin Validation of Military Components and Defense Agency Recommendations

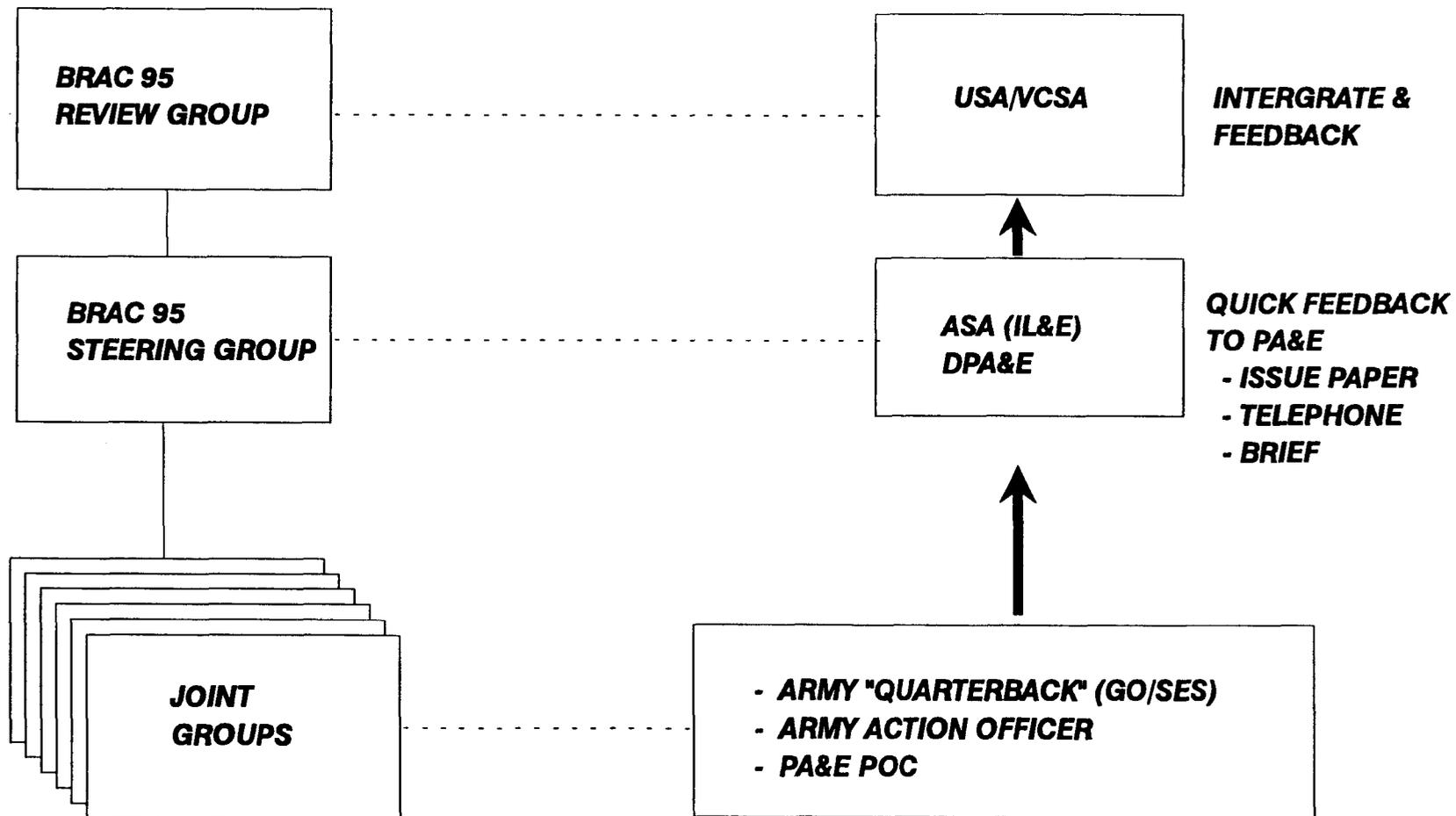
February 15 - Complete Validation of BRAC Recommendations

April 15 - Begin Review of Unique Capabilities of Depots

DEPOT MAINTENANCE and BRAC 95

PA&E "QUARTERBACK" CONCEPT FOR OSD BRAC '95

MISSION: KEEP SENIOR ARMY LEADERSHIP INFORMED OF ISSUES & POSITIONS EMERGING FROM OSD JOINT GROUPS



DEPOT MAINTENANCE and BRAC 95 ISSUES, CONCERNS, POTENTIAL CONFLICTS

- **CONTROL THE " PROCESS " -- ENSURE FEEDBACK AND COORDINATION AMONG DIVERSE GROUPS; DE-CONFLICT MILESTONES.**

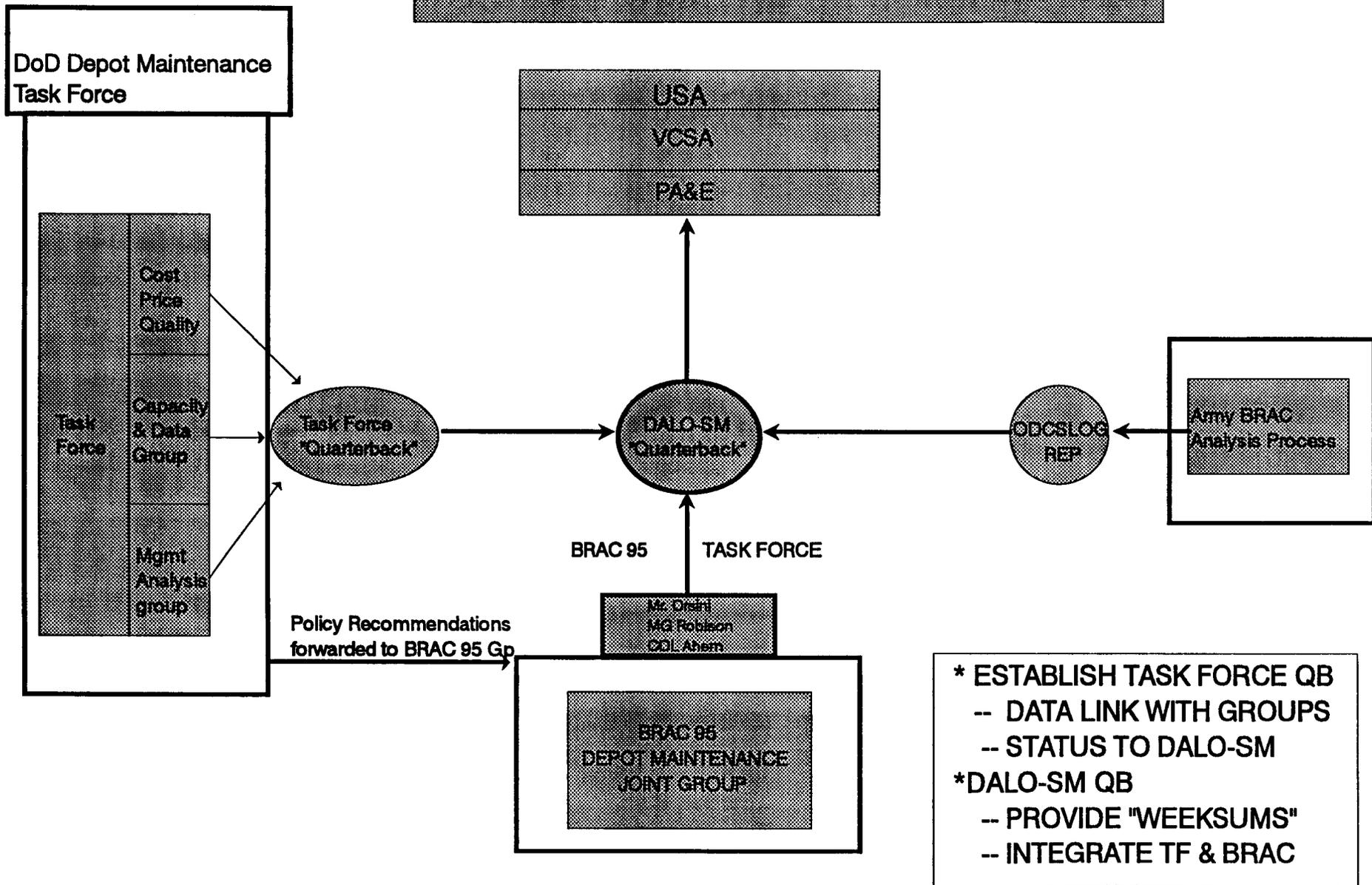
- **DEVELOP, ARTICULATE AND DEFEND THE ARMY'S INTERESTS IN OSD FORUMS (DDMC, DM TASK FORCE, BRAC-95 GROUP)**
 - CAPACITY AND UTILIZATION TARGETS**
 - BASIS FOR SIZING (PROGRAMMED WORKLOAD VS REQS)**
 - PROCEDURES AND CONCEPTS FOR INTER-SERVICING**
 - PUBLIC/PRIVATE BALANCE**

- **RECOMMEND AND DEFEND A REALISTIC "ARMY POSITION" FOR BRAC-95 DEPOT MAINTENANCE INFRASTRUCTURE TO THE SENIOR LEADERSHIP**

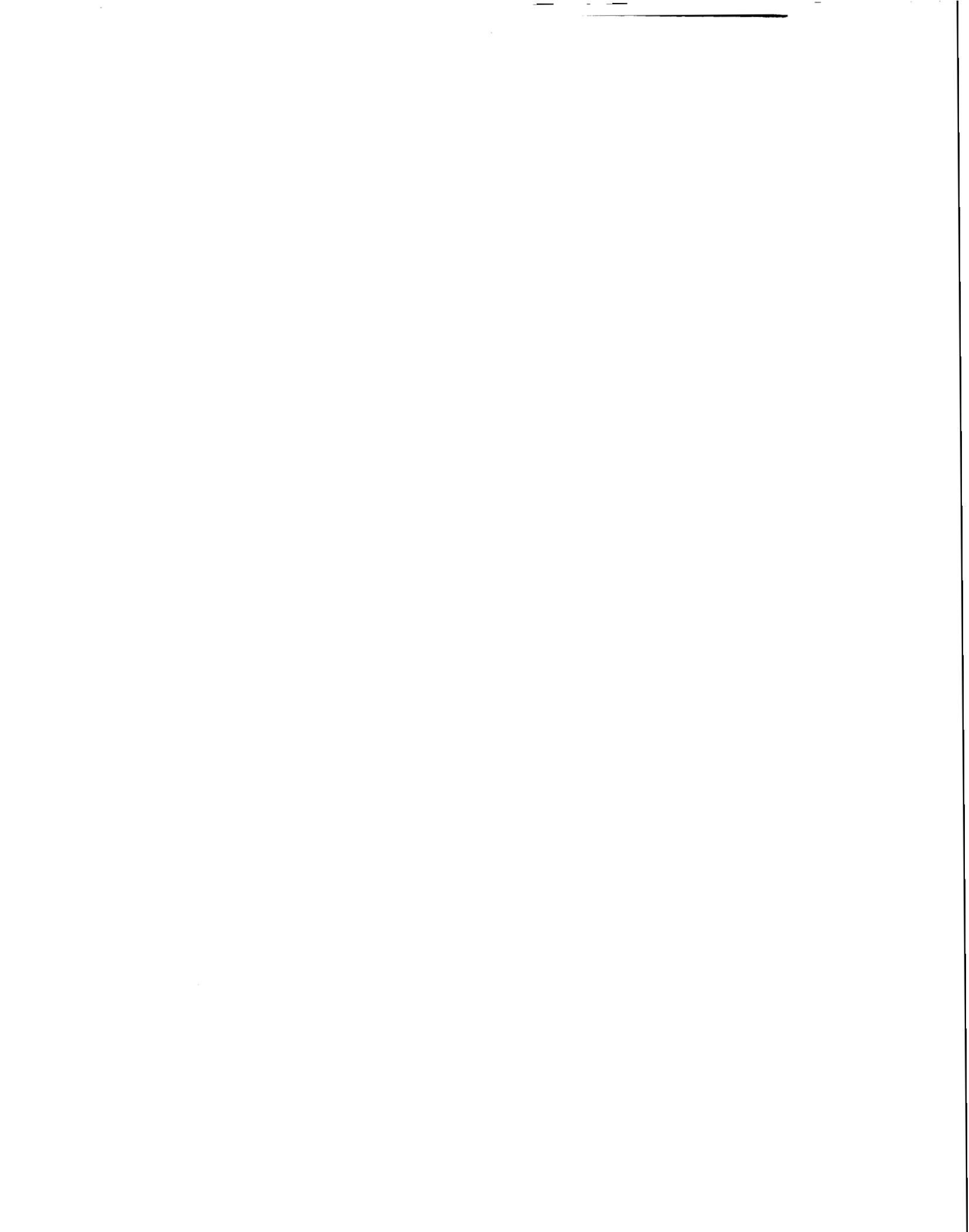
DEPOT MAINTENANCE and BRAC 95

***STATUS REPORTS
BY
SUPPORT GROUP
REPRESENTATIVES***

DEPOT MAINTENANCE INFORMATION FLOW



- * ESTABLISH TASK FORCE QB
 - DATA LINK WITH GROUPS
 - STATUS TO DALO-SM
- *DALO-SM QB
 - PROVIDE "WEEKSUMS"
 - INTEGRATE TF & BRAC





**FY93
DEPOT MAINTENANCE
ANNUAL REPORT**

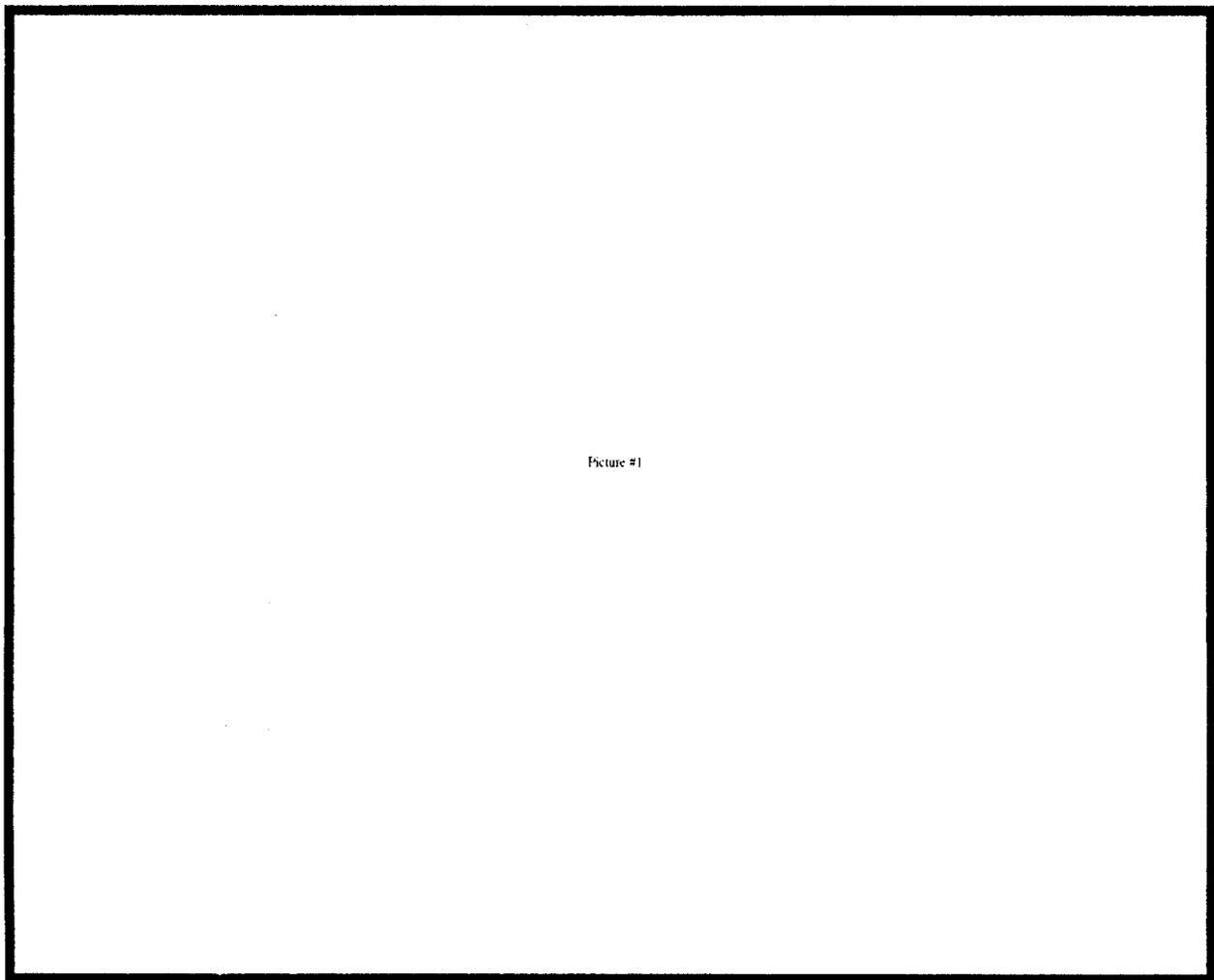


Figure #1

MISSION

The AFMC mission statement is "Through integrated management of research, development, test, acquisition, and support, we advance and use technology to acquire and sustain superior systems in partnership with our customers and suppliers. We perform continuous product and process improvement throughout the life-cycle. As an integral part of the Air Force war fighting team, we contribute to affordable combat superiority, readiness and sustainability." Air Force Materiel Command's role is to turn global power and reach concepts into capabilities--to design, develop and support the world's best air and space weapon systems. The Command also supports all Air National Guard (ANG) and US Air Force Reserve (USAFR) activities, other US Government agencies, and air forces of friendly nations receiving US military assistance.

The office of the Directorate of Logistics (HQ AFMC/LG) develops and prescribes policy guidance, plans and programs for logistics operations (maintenance, supply, transportation, and item management) at AFMC's five Air Logistics Centers (ALCs), the Aerospace Guidance and Metrology Center (AGMC), the Aerospace Maintenance and Regeneration Center (AMARC), and Support Center Pacific (SCP). Its task is to provide the logistics management needed to keep

the Air Force's aircraft, missiles, and support equipment in top condition.

The AFMC Depot Maintenance Business Area (DMBA) of the Defense Business Operation Fund (DBOF) is solely dependent on the sale of maintenance services to cover operating expenses. This applies to all work whether performed organically, contractually, or through interservicing. Management of the DMBA involves the development of realistic budget estimates that include improvements in productivity and continuous review and analysis of depot maintenance operations to ensure timely production of a quality product at the lowest possible cost.

Criteria established by the Department of Defense limits our organic facilities to mission essential workloads which require a continuing depot level maintenance capability to maintain operations under emergency or wartime conditions, or which require depot maintenance in peacetime to assure material operational readiness. Contract depot maintenance provides a means of augmenting the organic capability.

The HQ AFMC/LG objective is to attain the best possible use of contract, organic, and interservice depot maintenance resources to support the Air Force mission. This requires the economical and effective use of facilities, equipment, management information systems, and manpower. In providing management policy for the depot maintenance operation, the Directorate must consider schedules, quality and cost to measure the effective use of resources.

Cover Photo

B-1B Programmed Depot Maintenance (PDM) on the line at Oklahoma City Air Logistics Center, Tinker Air Force Base, Oklahoma.

INTRODUCTION

FY93 was a transition year for AFMC. It was the first full fiscal year as a Command. The depot maintenance community continued to streamline and downsize their operations with heightened emphasis on capacity control. Manpower and the amount of depot production continued to drop. Resource management, as with last year, has been our biggest challenge.

The Activation of the new Air Force Materiel Command (AFMC) brought the management of the acquisition and sustainment (depot maintenance) of Air Force weapon systems closer together with the "cradle-to-grave" philosophy called Integrated Weapon System Management (IWSM). It places the management of a weapon system, from "cradle-to-grave," on the shoulders of a single manager. Logistics issues get introduced more forcibly and earlier in the acquisition process because the single manager has to support as well as acquire the weapon system.

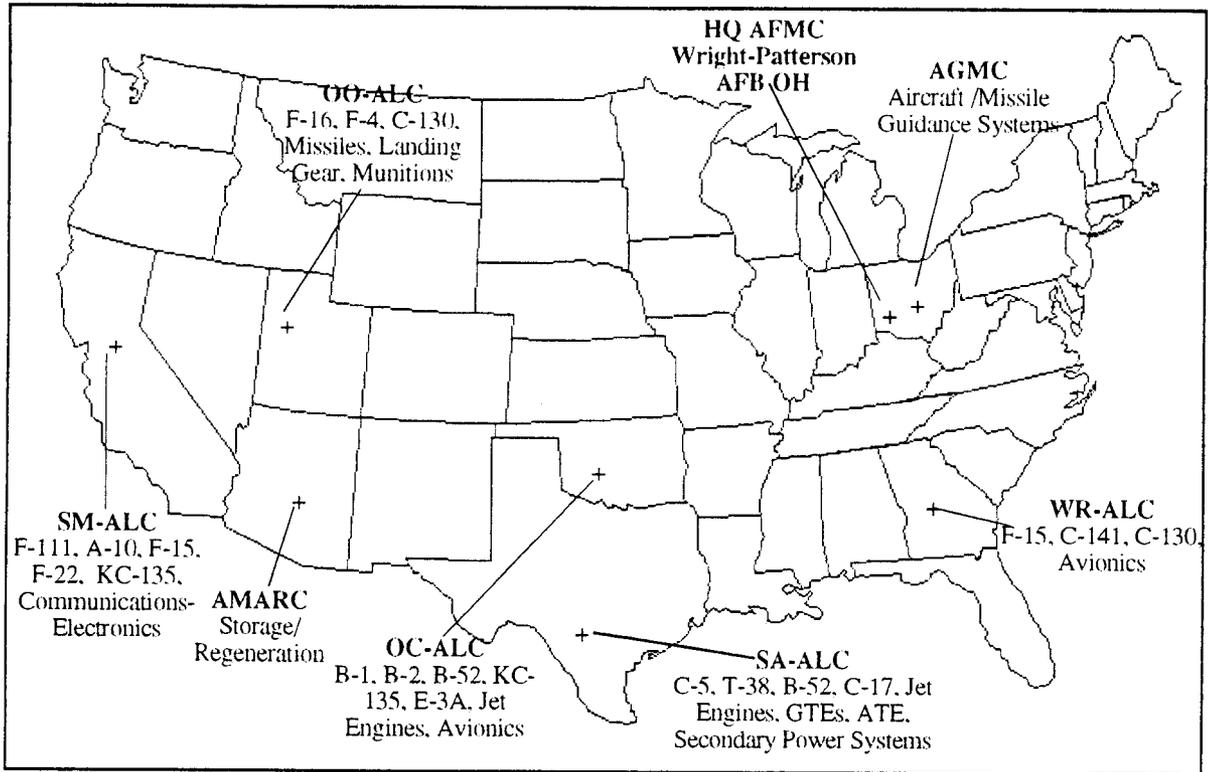
In FY93, the Air Force moved from a test mode to a full scale implementation of the Two-Level Maintenance (2LM) program. Its aim is to improve the current three-level maintenance system eliminating costly intermediate level that operates out of base maintenance squadrons. The switch to 2LM also simplifies the aircraft repair process by eliminating extensive base-level repairs. 2LM supports the Air Force vision of global reach/global power, because it reduces the numbers of people and equipment operational commanders must take with them when they go to war. Avionics' reparable pipeline times have been consistently shortened through-

out the fiscal year. Great strides have been made in lowering engine repair times and base engine stock levels have consistently remained around 100 percent full. The lessons learned from 2LM are being adopted for other depot workloads in the Lean Logistics demonstrations. Lean Logistics utilizes express transportation, consolidated inventory points, and depot repair on demand to shorten the logistics pipeline. The shortened pipeline will result in a "right sized" inventory. Assets will be repaired on demand in response to an actual failure in the field and assets will be pushed to where they are most needed.

The Support and Industrial Operations Mission Element Board (S&IO MEB), one of five MEBs in AFMC, is chaired by the Directorate of Logistics, HQ AFMC/LG. It is responsible for the command activities that ensure the Air Force operating commands get the best support at the least cost for every system AFMC delivers. S&IO members come mainly from the logistics community, but also come from a core of functional experts from throughout the command. Budget cuts, downsizing, and the accompanying changes in defense strategies are the major challenges shaping S&IO philosophies.

Continuous quality improvement is a driving goal of depot maintenance while at the same time reducing the cost of our product to our customers. Many tools are being used to guide us towards this direction. Examples are Total Quality Management (TQM), Benchmarking, and the application of Theory of Constraints.

Depot Maintenance Location Map



(+ AFMC Depot Maintenance Locations)

1 Sep 1994

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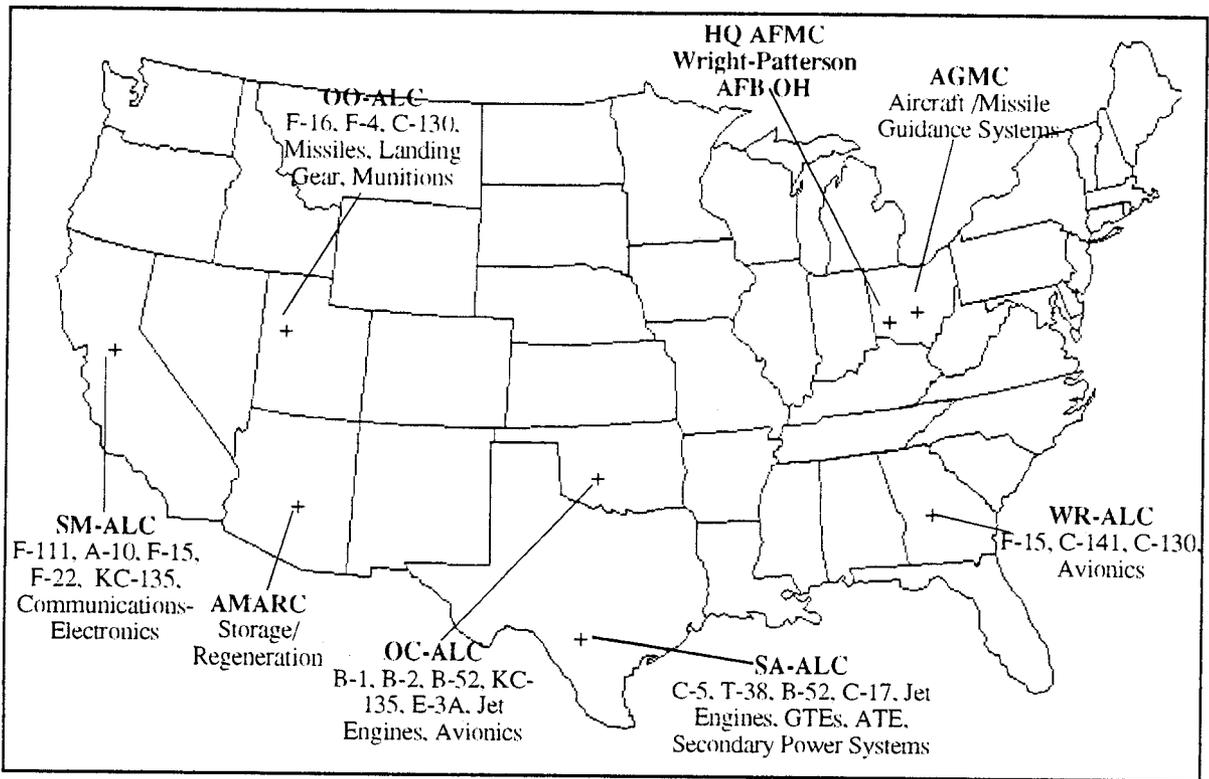
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Depot Maintenance Location Map



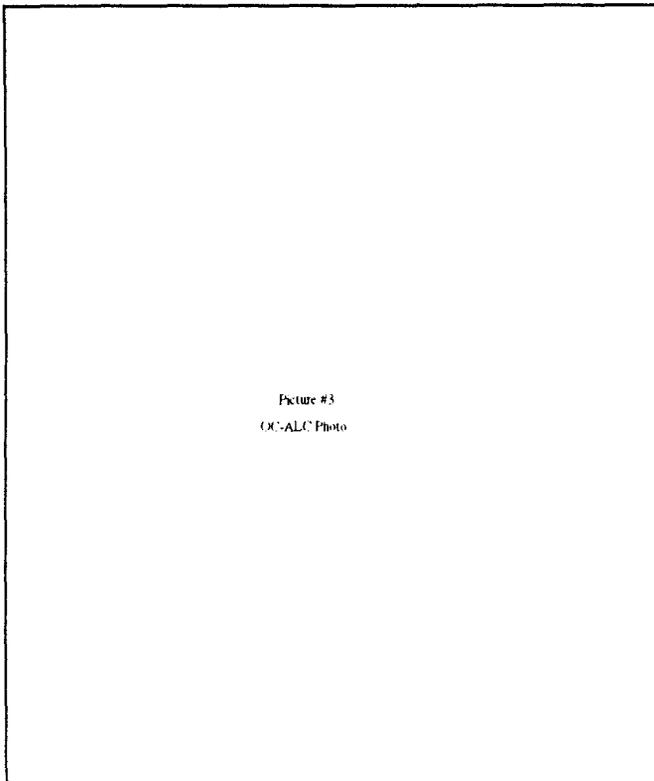
(+ AFMC Depot Maintenance Locations)

DEPOT MAINTENANCE ANNUAL REPORT FY93

The Depot Maintenance Annual Report provides a summary of past fiscal year achievements along with an insight of special programs and actions which influence the AFMC depot maintenance operations.

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Center Summary



OC-ALC: Aerial Base Photo

Oklahoma City Air Logistics Center (OC-ALC)

Number of Facilities: 59
 Facility and Equipment Value: \$1.84B
 Aircraft: 87 (Organic)
 Engines: 1,053 (incl 436 missile engines)
 Exchangeables: 111,975
 Maintenance Man-hours: 6,526,854 DPAHs

Major FY93 Accomplishments:

Winner of the Air Force and Secretary of Defense Award for Pollution Prevention. Reduced hazardous waste, handling, worker exposure, and increased operational quality by replacing the previous sealant mix and freeze operation with "just-in-time" procurement of frozen aircraft sealant. Successful offeror on repair/overhaul competitions for the E-3 Programmed Depot Maintenance (PDM), C-135 Refueling Boom, F-15 Turbine Motor, and three Constant Speed Drives (CSDs) with a contract award value of \$58.5M. Produced 154 Two-Level Maintenance engines for the Secretary of the Air Force directed 2LM program.

New Workloads:

B-52H Programmed Depot Maintenance (PDM) was moved from SA-ALC to OC-ALC. Navy E-6A Expanded Phase Maintenance (EPM) Program was initiated by the E-3 System Support Management Division. Engine 2LM for the F108-100, TF33-3/103, TF33-100, and TF33-7. Initiated Avionics 2LM.

New Facilities/Equipment:

Addition of an energy dispersive X-Ray system to the existing Scanning Electron Microscope.

Ogden Air Logistics Center (OO-ALC)

Number of Facilities: 299
 Facility and Equipment Value: \$1.871B
 Aircraft: 318
 Missiles: 769
 Exchangeables: 75,276
 Maintenance Man-hours: 6,179,000 DPAHs

Major FY93 Accomplishments:

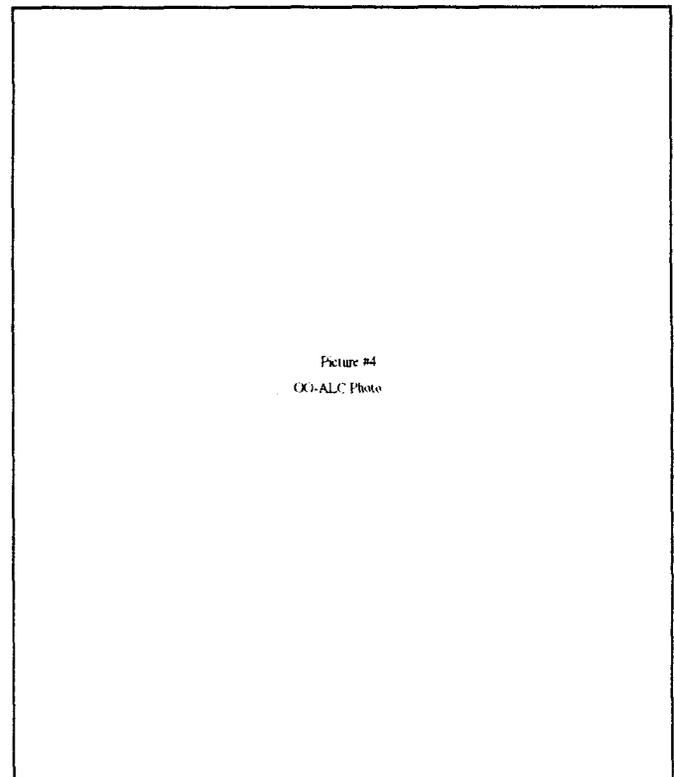
USN F/A-18 Aircraft, Modification Corrosion and Paint Program (MCAPP); Prototyped the first USN C/KC-130 Aircraft, Standard Depot Level Maintenance (SDLM) aircraft for a FY94 production start, result of a DMRD 908 interservicing direction, F-16 Block 40/42 FALCON UP, APG-66 Radar Programs, Aircraft Wheels Repair and Overhaul Workload. The Technology and Industrial Support Directorate became the Secretariat for the Air Force Software Engineering Steering Group.

New Workloads:

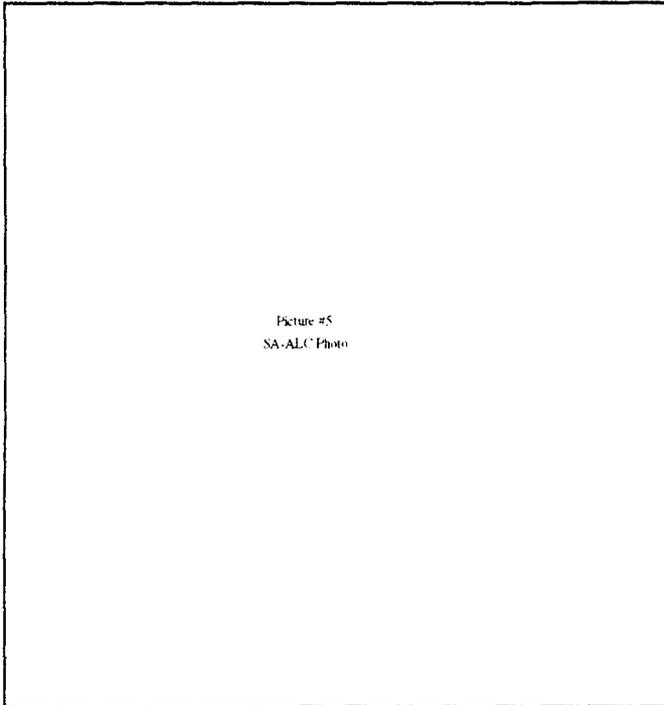
F-16A/B, APG-66 Radar, F-16 Block 40/42, FALCON UP, F/A-18 Modification Corrosion and Paint Program (USN), C/KC-130 Standard Depot Level Maintenance Program (USN), Silo-Based Intercontinental Ballistic Missile (SBICBM) System Program Office transferred Peacekeeper in Minuteman silo refurbishment at Vandenberg AFB from contract to organic repair, circuit card manufacture, x-ray of JAU-8 initiator, F-111 software support.

New Facilities/Equipment:

SBICBM acquired 10 new Volvo White semi-truck/tractors, Computed Tomography Facility, Upgraded B205 and B100, CNC Vertical Machining Center. VAX Computer System improvements in B100 and B205.



OO-ALC: Aerial Base Photo



Picture #5
SA-ALC Photo

SA-ALC: Aerial Base Photo

San Antonio Air Logistics Center (SA-ALC)

Number of Facilities: 92
Facility and Equipment Value: \$1.209B
Aircraft: 80
Engines: 3,435 (Includes modules)
Exchangeables: 60,387 (organic)
Maintenance Man-hours: 7,406,000 DPAHs

Major FY93 Accomplishments:

Transitioned TF39, F100-200, and T56 engines to support Two-Level Maintenance. B-2 Secondary Power System supported from newly built Gas Turbine Engine (GTE) Facility.

New Workloads:

B-1B PTO Shaft, Patriot Missile GTE (Army), LANTIRN, F-16 Paint, 2LM Quick Engine Change, ACFT Strip & Paint, T-38 Cockpit Refurbishment, C-5 Speedline.

New Facilities/Equipment:

GTE Repair Facility, Corrosion Control Facility, QEC Facility, Advanced Composite Repair Facility, T56, F100, TF39 Two Level Maintenance Facilities.

Sacramento Air Logistics Center (SM-ALC)

Number of Facilities: 107
Facility and Equipment Value: \$1.204B
Aircraft: 164 Organic
Exchangeables: 121,002 (Organic)
Maintenance Man-hours: 6,107,000 DPAHs

Major FY93 Accomplishments:

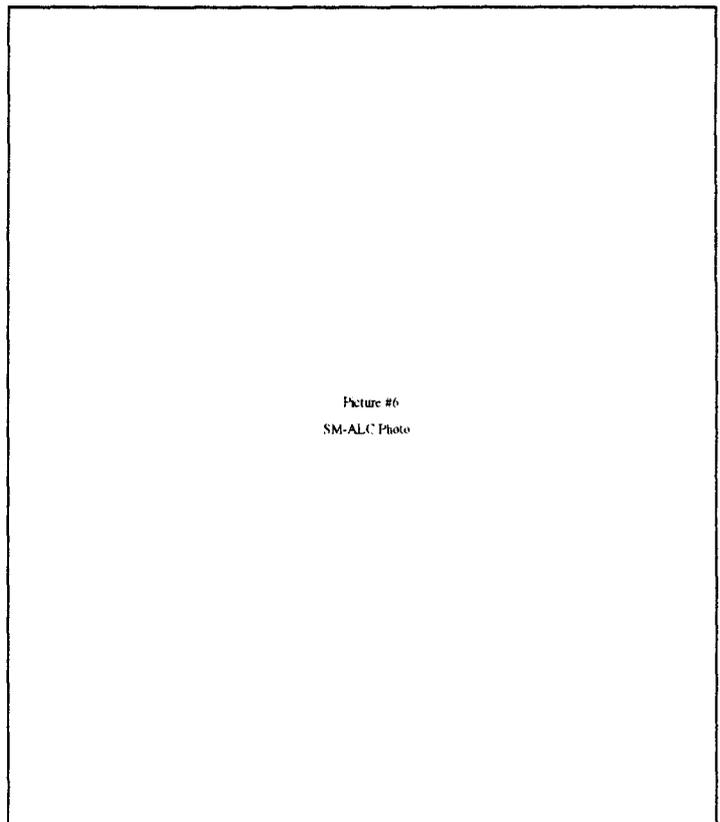
Implemented Watchdog electronic monitoring system. Reduced F-111 fuel tanks PDM by 3,000 hours. Completed Avionics Modernization Program on the F-111E. Enhancement to AN/FMN-1 Runway Visibility Computer. LH created a single point of contact to the customer for cost, schedule, and performance. Baselined configuration for AN/FMQ-12 Digital Ionospheric Sounding System. Completed Mobile Electronic Warfare Surveillance System. LI Suggestion Program realized a tangible benefit of \$999,920. Established dual use concept.

New Workloads:

Kit proofed the F-111F Pacer Strike mod. Digital flight control modification for all F-111s started in FY93. Received 15 F-111Gs for inspection and processing for sale to the Australian Air Force. Joint Tactical Information Distribution System (JTIDS) AN/TSC-131 US Marine Corps version. AN/TPN-30 Air Traffic Control and Landing System (ATCALS). Guardrail common sensor power plant AN/MJQ-44. AN/TSC-107 Communications van upgrade. AN/PRC-90-2C Survival Radio upgrade. A/S 37U-2 Truck and shelter mount mini-MUTES. Army Bradley Fighting Vehicle.

New Facilities/Equipment:

Source Treatment Plant; Wind Tunnel for AN/FMQ-13; Computer Repair Center Facility; Pneudraulics Facility.



Picture #6
SM-ALC Photo

SM-ALC: Aerial Base Photo

Center Summary

Warner Robins Air Logistics Center (WR-ALC)

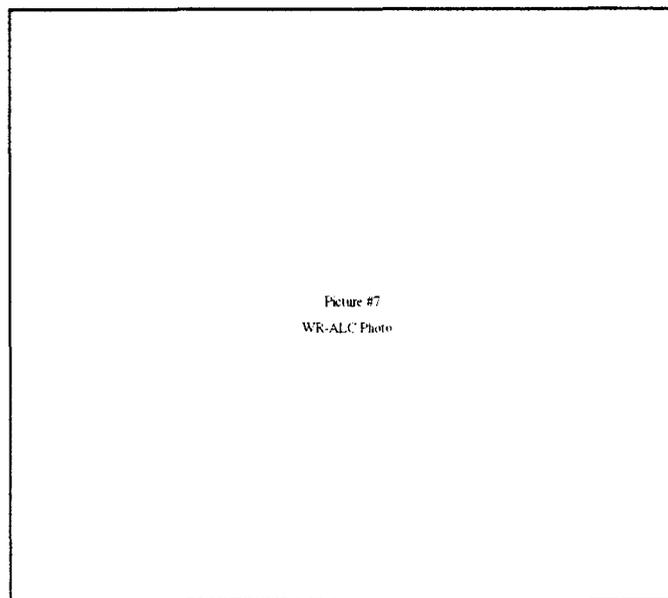
Number of Facilities: 86
 Facility and Equipment Value: \$1.163B
 Aircraft: 310 (Organic)
 Exchangeables: 124,489 (organic)
 Maintenance Man-hours: 7,383,000 DPAHs

New Workloads:

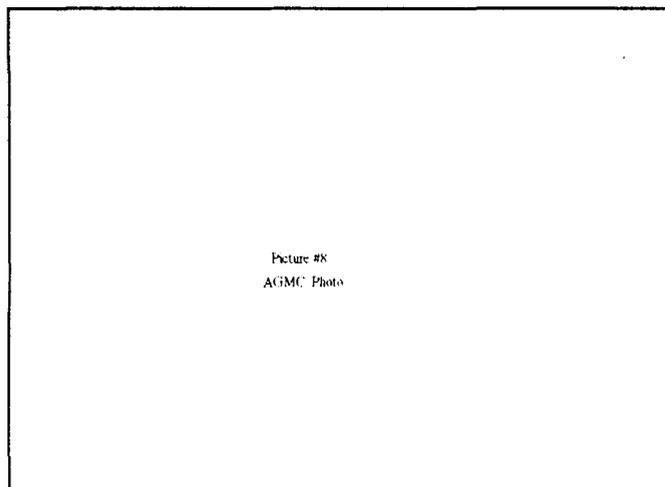
C-130 Center Wing replacement, Global Positioning Systems on Combat Talon; APG-63 Fire Control Radar System; Metallurgical Analysis Team testing of Defense Logistics Agency (DLA) hardware items; Conversion of Boeing 707 aircraft to operational level maintenance trainer for JointSTARS program; In-house F-15E Conformal Fuel Tank Repair.

New Facilities/Equipment:

Ground breaking for the first of fourteen buildings to support Joint Surveillance Target Attack Radar System (Joint STARS); Fluid Cell Press and Water Jet Cutter & Deburring Center were added.



WR-ALC: Aerial Base Photo



AGMC: Aerial Base Photo

Aerospace Guidance & Metrology Center (AGMC)

Number of Facilities: 5
 Facility and Equipment Value: \$504.5M
 Exchangeables: 11,173
 Maintenance Man-hours: 961,000 DPAHs

Major FY93 Accomplishments:

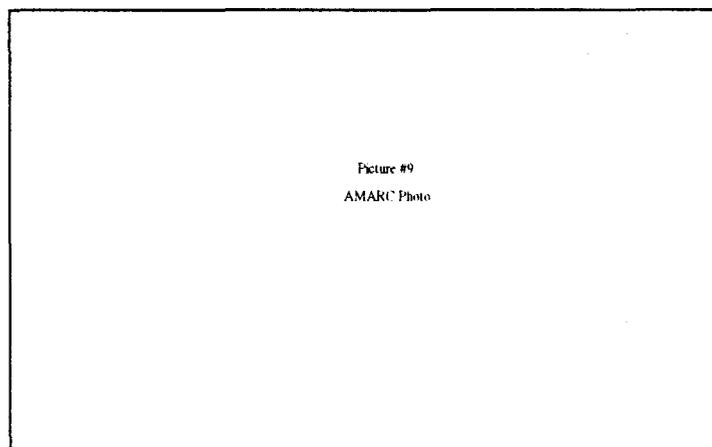
The Suggestion and Value Engineering Programs for the Directorate of Maintenance (MA) produced over \$756,000 in actual savings and \$4,265,000 in cost avoidance. MA reduced the number of Ozone Depleting Chemicals (ODCs) by more than 557,000 pounds when compared to FY92 usage and slashed the number of processes using ODCs from 1321 in FY92 to 647 as of the end of FY93. Implementation of 2LM for the F-16 and A-10 weapons systems reduced the actual turnaround time to 3.5 days, thus exceeding the goal of 5.5 days.

Aerospace Maintenance and Regeneration Center (AMARC)

Number of Facilities: 81
 Facility and Equipment Value: \$45.4M
 Inspections (Maintain-In): 5,455
 Input to Storage: 911 (Acft only)
 Routine Aircraft Reclamation: 27,056 (Parts)
 Withdrawals: 165 (Flyaways, Overland, Museum)
 Preservations: 35

Major FY93 Accomplishments:

Received 671 aircraft and processed 911 into storage. Used TQM tools to reduce time required to process aircraft into storage by 24 hours. As of 10 Sep 93 had eliminated 28 B-52s as part of Strategic Arms Reduction Treaty.



AMARC: Aerial Base Photo

Oklahoma City Air Logistics Center (OC-ALC)

In an atmosphere of force reductions, base closures, and severe budget constraints, OC-ALC succeeded in innovating our practices to meet the needs of our customers. Effective interservicing, efficient Two-Level Maintenance (2LM), and successful competitions were the fundamentals for FY93.

OC-ALC earned the prestigious U.S. Air Force Organizational Excellence Award for the period July 1992 - July 1993. During the summer of 1993, OC-ALC was the first air logistics center to host AFMC's senior military and civilian leaders for HORIZONS. The focus of the conference was the Support and Industrial Operations Mission Element which was an appropriate topic to be addressed at an air logistics center.

OC-ALC entered into a revolutionary new interservice maintenance program for the Navy's 16 E-6A aircraft called the Expanded Phase Maintenance Program. Under this program, maintenance work is performed by depot personnel working along side Navy personnel while the aircraft is undergoing routine Phase Inspections. All work is done in the Navy's facilities which is a unique arrangement not found at any other repair depot. This Extended Phase Maintenance Program eliminates a longer "away from home base" time normally associated with traditional Scheduled Depot Level Maintenance (SDLM). It eliminates an estimated six months of maintenance downtime every six years which is the norm associated with the traditional Navy SDLM Program. In addition to aircraft support, this was the first year for OC-ALC to accept full overhaul requirements for the Navy engines, TF30-P414 and F110-400. Production consisted of 81 TF30-P414 and 7 F110-400s.

OC-ALC completed the modification and testing of the first U.S. aircraft used to support the Open Skies Treaty that established unarmed aerial observation flights over the United States, Canada, NATO and the Warsaw Pact. OC-ALC was in charge of the cost, schedule, and performance aspects of the modification of the aircraft. OC-ALC brought the project in on schedule, delivering the aircraft 30 June 1993, and \$1.4 million under budget.

The Software Engineering Institute (SEI) awarded the Software Division the Process Maturity Rating of Level II - the first Air Force organization to achieve this rating. Each level of maturity brings with it increased reliability to the customer, more productivity, and fewer defects.

The Automatic Digital Weather Switch relocated from Carswell AFB, TX to OC-ALC. The switch brought 98 high-tech positions to Tinker.

OC-ALC was named as the Cruise Missile Product Group Manager (CM PGM) on 6 July 1993. The CM PGM is responsible for numerous systems and their respective pylons thus becoming the single face to the user for cruise missiles (with the exception of the AGM-129A ACM). In addition, OC-ALC is the location of the System Support Manager (SSM) for the AGM-129A Advance Cruise Missile (ACM) which is scheduled for consignment to the Cruise Missile Product Group in July 1994.

ALCAR (Air Logistics Center Airframe Rating) is a new program implemented to make our aircraft technicians multi-skilled as opposed to the old single skill concept. This new concept for training and certifying aircraft technicians provides significant benefits for both the workers - who acquire a broader skill base, and the center, which secures an enhanced competitive edge.

Participation in Depot Maintenance Competition (DMC) proved to be extremely successful for OC-ALC. A winning bid was made to retain the USAF E-3 Aircraft Programmed Depot Maintenance (PDM) workload for FY94-FY98 which meant a new one-year contract, with four succeeding option years, and is estimated at a total of \$36M if optioned throughout the five year contract period. Repair and overhaul workloads consisting of three Constant Speed Drives (CSDs), the F-15 Turbine Motor, and the KC-135 Refueling Boom were also won.

OC-ALC implemented the Secretary of the Air Force's Two-Level Maintenance (2LM) program for engines during FY93. CORAL THRUST, the 2LM Engine Test, was completed 30 Sep 1993. It successfully demonstrated support of pipeline segments, base stock levels, two level maintenance processes, and initial process improvements. Phase-in of the F108s and TF33s resulted in the 2LM production of 154 engines from eight different bases.

Phase II of the NATO Maintenance and Supply Agency (NAMSA) workload began in FY93. OC-ALC bid against U.S. and European companies, and was awarded the four year, \$3 million contract on 16 separate line items. The items include regulators, valves, liquid oxygen converters, computers, indicators and amplifiers used on NATO C-130 aircraft.

Tinker won the Air Force's and the Secretary of Defense's

top pollution prevention awards for FY93. Human exposure to toxic chemicals and air emissions to the environment has been reduced through the implementation of the Self-Priming Topcoat for aircraft. Replacement of the previous sealant mix and freeze operation, with "just-in-time" procurement of frozen aircraft sealant, has reduced hazardous waste, worker exposure, and increased operational quality.

To eliminate the use of harmful plating chemicals, such as chrome, OC-ALC implemented five new thermal spray processes: powder flame spray, wire flame spray, plasma spray, arc spray, and High Velocity Oxygen Fuel spray.

Tinker also opened a new Hazardous Materials Cell, 22 July 1993. The cell is only one of two in the entire Air Force, and is the largest. The HAZMAT cell is instrumental in the safe flow of hazardous materials within the large industrial complex. It is a special office which incorporates the functions of base supply and depot supply and is designed to manage hazardous materials on Tinker AFB.

All of these accomplishments could not have happened without the talents, hard work, and dedication of the complementing civilian, military, and contractor work force.

Ogden Air Logistics Center (OO-ALC)

The Aircraft Directorate entered into a new era of private contract operations when Ogden won the bid to perform the Modification Corrosion and Paint Program (MCAPP) requirements on the Navy F/A-18 fighter/attack aircraft. The contract award is for the basic year and four one-year options. Total contract value for the five-year period is \$60,599,715. The prototype Navy C-130 Standard Depot Level Maintenance (SDLM) aircraft was inducted in June. The aircraft was accepted by the U.S. Marine Corp activity with zero defects noted. Ogden has expanded its "two-level maintenance" role beyond avionics into the realm of engines. Initiated and completed the third phase of Coronet Deuce, which ran from 1 Oct 92 to 30 Sep 93; the test was successful in showing that two-level maintenance could be sustained long term. The APG-66, F-16A/B Radar workload and F-16 Block 40/42 FALCON UP Program were won competitively. A nine member team was involved in the development, planning, implementation, and feasibility assessment for enhanced electronic warfare. Five aircraft have been completed; this modification could involve all F-16C/D, Block 25/30/32 aircraft.

The Missile Maintenance Section of the Silo-Based Inter-

continental Ballistic Missile (SBICBM) System Program Office reduced operating costs by \$226,000. The Missile Transportation, Handling, and Deactivation Section developed procedures and trained Army personnel on missile/motor handling and storage tasks, enabling Pueblo, CO, and Navajo, AZ, Army storage facilities to come on-line ahead of schedule. Twenty successful cruise missile recoveries at Dugway Proving Ground, UT, and four missile recoveries at Primrose Lake Evaluation Range in Alberta, Canada, were performed. The recovery in Canada was the first successful recovery outside U.S. territory. As a result, we were asked to participate in developing a functional ground test for the cruise missiles. Over 1,000 Minuteman and Peacekeeper motors and 150 Minuteman missile overground trucking transfers were performed; 600 Minuteman carriages were proof loaded.

Construction was started on the new Computed Tomography Facility for Minuteman and Peacekeeper Missile (largest production facility of this type in the continental U.S.); estimated completion date is Sep 94. The Technology and Industrial Support Directorate held the Annual Software Technology Conference in Salt Lake City, UT. This tri-service sponsored conference attracts representatives from all DoD agencies and private industries. It has been an ideal vehicle by which to exchange the latest software information. The Science and Engineering Laboratory has expanded its customer base by upgrading its facility. A crosstalk publication from the Software Division continues to be the premier software publication for DoD users. The free monthly publication provides the latest up-to-date software information available.

Automated Remanufacturing of Cylindrical Objects (ARCO) was implemented using four prototype systems. ARCO is a voice activated computer inspection station for landing gear components designed to improve the quality of the evaluation and inspection process by reducing the time to determine proper repair routes. In Mar 93 the Commodity Directorate completed efforts to establish a feature based manufacturing cell in Bldg 510. The cell is designed to efficiently manufacture small to medium sized machine turned components such as bolts, pins, sleeves, bushings, and shafts, incorporating just-in-time manufacturing principles with improved machining processes. Investment casting saw a significant increase in workload due to marketing efforts with the Naval Undersea Warfare Depot Keyport, WA. We provide castings on eight different components, which the Navy assembles with other hardware, for use on submarines and as torpedo

sub-assemblies. Current orders amount to 1,200 castings (2,500 manhours). A depot maintenance competition workload for aircraft wheels repair and overhaul, with seven other reputable bidders, was won by OO-ALC.

San Antonio Air Logistics Center (SA-ALC)

SA-ALC's mission, capabilities, and demonstrated performance during peacetime and world conflicts make it the heart of the Nation's strategic airlift capability now and for the foreseeable future. The C-5 is, and will continue to be, the backbone of the strategic airlift mission for the next 15 to 20 years. The C-17, which is managed and will be maintained at SA-ALC, will further amplify our strategic role as the prime large bodied aircraft maintenance center in the Air Force.

SA-ALC's \$17 million in productivity savings ranks highest in the Air Force and we have pioneered the Air Force's only Organic Warranty Program covering all items manufactured or repaired at the Center. The program guarantees that work performed at SA-ALC will be free of material and workmanship defects for a 30-day period after installation.

SA-ALC is the Air Force Center of Excellence for Aircraft Engines, engine modules, and related work. State of the art inspections, repair and test technologies insure engine availability, safety, reliability and quality for America's front line fighters and transport aircraft. Our Jet Engine Overhaul/Repair Complex is designed for cleaning, inspecting, and repairing the T56, TF39, and F100 engines. The complex allows for the ready adaptation to new engine inspection, repair, and testing technologies in it's 1.2 million square foot facility.

Under Two Level Maintenance (2LM), SA-ALC provides front-line engine support to Air Combat Command (ACC), Air Mobility Command (AMC), and Air Education and Training Command (AETC). Three facilities are being renovated to support engine 2LM at SA-ALC. SA-ALC prototyped the 2LM repair and conducted the CORAL STAR test for the F100-PW-220/E engines in FY93. During the test, 25 engines were repaired and returned to the customers under the expedited processes to be utilized at full implementation. Similar planning was initiated to expand the engine 2LM program to the TF39 and T56 engines in FY94.

The Propulsion Product Group Manager (PPGM) established at SA-ALC in FY93, provides management of propulsion activities through the use of existing infra-

structures. The PPGM has lifecycle management responsibility for planning, analysis, technology development and insertion through design, development, production, sustainment, modification and retirement. These functions are accomplished by the PPGM using a Propulsion Integrated Product Team (PIPT) comprised of propulsion personnel from SA-ALC, OC-ALC, and ASC.

The Commodity Production Division repairs over 1,000 Gas Turbine Engines (GTE) including Secondary Power Systems. The F-15 AMAD and the B-1B ADG are in production in the newly completed GTE Facility. With this new facility the Center's capability has been expanded to provide competitive overhaul and repair for engine start systems, aircraft starters, secondary power systems and small GTEs.

In FY93, SA-ALC became the depot of choice for the PATRIOT Missile System GTE and other Army Ground Power GTE applications. This was the direct result of the Jan 91, Defense Depot Maintenance Council (DDMC) GTE Consolidation Study, which recognized SA-ALC as the DoD Center of Excellence for GTEs. Contributing factors were SA-ALC's industrial capabilities, infrastructure, existing capacity, skilled work force and future growth potential in this depot repair commodity. This center has demonstrated its ability to aggressively develop organic capability to respond to both Army and Navy interservice needs. We were able to compress the PATRIOT and Navy T56/501K production schedules respectively, by three months due to the infrastructure availability and commonality of workload. In addition, 38,000 hours of Navy and Coast Guard workload including GTEs, engine components, manufacture of torpedo components, and repair of radar test sets was accomplished in FY93.

The Center's first competition victory came in FY93 with the successful proposal to modify 71 C-5A/B aircraft. This contract was awarded as the best value to the Government on the basis of SA-ALC's bid of \$35M on an estimated \$70M contract. The first aircraft to arrive on the Speedline was in June 1993 with one arriving per month for the remainder of FY93. These four aircraft received large modifications to the landing gear assemblies and the Malfunction Detection and Readout System (MADARS). SA-ALC completed all work ahead of schedule and is currently performing at a 2% profit margin.

During FY93, this center achieved a 39% reduction in flow days on C-5A aircraft. The average flow days in

January 1993 were over 400 days. By September 1993, the flow days had been reduced to less than 244 days.

In FY93, this Center's capability was further enhanced with the acceptance of the new Corrosion Control Facility. This facility is the only one of its size in DoD which has the capability to strip a C-5 cargo size or smaller aircraft using plastic bead media blasting (PMB), an environmentally "clean" process to remove airframe coatings.

Source of repair responsibility for the B-52 during the early months of FY93 remained divided between SA-ALC and OC-ALC. In early March 1992, the two centers began formulating a plan to transfer all SA-ALC managed MISTR items for the B-52 to OC-ALC. Implementation of this plan commenced on 1 October 1992 with the transfer of Kelly's field generated, non-fixture MISTR assets to OC-ALC. Eight B-52 Bombers continued through the PDM line in FY93, with the completion of the last one on 22 May 1993, marking the end of an era. SA-ALC had established a 36-year relationship with the aircraft and during that period had performed PDM on 1,427 B-52 aircraft.

SA-ALC was awarded EPA's Stratospheric Ozone Protection Award for its outstanding program to control, monitor, and eliminate the use of ozone depleting materials. Numerous pollution prevention programs, such as a reduction of 53% in ODC use and a 33% reduction in the use of EPA 17s has allowed SA-ALC to exceed the Air Force mandated goals in all program areas.

Sacramento Air Logistics Center (SM-ALC)

Sacramento Air Logistics Center has a vision: to expand the base into a model dual-use industrial facility. We are leveraging our investment in facilities, equipment and technologies to provide the genesis of this dual-use plan. We are offering our capabilities, facilities and technologies for interservicing, and supporting commercial applications that are in the interest of the taxpayer. Working together, "Team McClellan" has made overwhelming progress toward building reality into our challenging vision.

SM-ALC is the largest industrial employer in Northern California, leading the way for depot level maintenance. High technology creates a world-unique situation in many areas, and continues the tradition of leadership. We have the only fighter-size non-destructive inspection (NDI) facility and the only industrial reactor in the Department of Defense. This provides an opportunity for the Center

to work with other U.S. Agencies like NASA. We also hosted the Navy's F-14 Tomcat in the NDI and the Army's Apache Helicopter which we hosted in both the NDI and the McClellan Nuclear Radiation Center for blade inspection.

High technology is continually evident in our software support facilities, computer-aided design/computer-aided manufacturing processes, 5-axis numerical control machining equipment, customer configured optical equipment, and DoD's largest plastic injection molding machine.

For new workloads, the Army's Bradley Fighting Vehicle workload was awarded to the Commodities Directorate, for a total of \$4.5M for a five year period. In addition, we received the workload for the Joint Tactical Information Distribution System AN/TSC-131 US Marine Corps version. This interservicing effort continues to display the position of cooperation that SM-ALC provides to all DoD projects. Additional new workload includes a \$2.3M communication van upgrade, and a survival radio upgrade. SM-ALC kit proofed the F-111F Pacer Strike modification, and a digital flight control modification for all F-111s started in FY93 and will continue through FY97. 15 F-111Gs were received for inspection and processing for sale to the Australian Air Force.

In the LH Directorate, an enhancement to the AN/FMN-1 Runway Visibility Computer was completed and a Project Management Flight was created to provide a single point of contact to the customer for costs, schedule, and performance. A Computer Repair Center was created to accomplish computer workloads in-house small computer support and Mission Critical Computer Resources. Based-lined configuration for the AN/FMG-12 Digital Ionospheric Sounding System was accomplished and the program was completed for the Mobile Electronic Warfare Surveillance System (MEWWS). Additional workload included the AN/TSC-107 communications van upgrade for \$2,344M.

In September 1993, the Super Connectivity Magnetic Energy Storage (SCMES) was placed on contract. The PCCIE Program received \$17.6M from the Defense Nuclear Agency to accomplish an engineering study of SCMES to do power conditioning. On Veteran's Day, 1993, President Clinton signed a bill appropriating the first \$11.5 million of a 5 year, \$40 million project, where we will jointly develop an environmentally compliant casting facility for the domestic automobile industry and

the DoD with the United States Council for Automotive Research (USCAR). USCAR represents the Chrysler Corporation, Ford Motor Company, and General Motors Corporation. The USCAR-McClellan team will originate and implement new procedures, processes, materials and technologies with a goal of producing a cost effective foundry with near zero impact on the environment.

Representing another thrust toward the transfer of military capacity into peaceful uses, we formed a partnership with a local utility company to develop and demonstrate advanced technologies for zero-pollution electric vehicles. Significantly, this agreement will create civilian jobs in the process and help establish an electric vehicle industry in Sacramento.

Warner Robins Air Logistics Center (WR-ALC)

Warner Robins Air Logistics Center (WR-ALC) continues to be the key economic engine for the state of Georgia, daily providing logistical support to our customer, the warfighter. Our goal is to become the "Center of Choice" for all IWSM activities.

Our Electronic Warfare Management Directorate participated in Coronet Deuce III which was a Two-Level Maintenance test of the F-16 aircraft. ALR-69 Radar Warning Receiver assets were routed directly to WR-ALC where they were expressed to the production shop. The Hardware Production Branch processed, repaired and returned 723 two-level items during this test with an average flow time of slightly less than 9 hours. This far exceeded the standard of 3 days and considerably exceeded the preferred time of 1 day. Process improvements institutionalized during this test are presently being used for two-level maintenance which will be implemented in FY94.

Our Avionics Management Directorate experienced significant growth during 1993 in their support to Foreign Military Sales (FMS) countries utilizing the Low Altitude Navigation & Targeting for Night (LANTIRN) AAQ-13/14. Both development of test program sets and establishment of follow-on support cases were added to our workload management this year by 3 additional countries.

History was made with the replacement of the C-130 Center Wing which increases the life of the wing from a range of 8/12,000 flight hours to 30,000 flight hours. Additionally, the first Combat Shadow C-130 was produced in Jan 1993. These initiatives will give our Special

Operations Force Command a greater availability of aircraft to meet their operational needs. An environmentally compatible high pressure Bicarbonate of Soda (BOSS) de-paint procedure was also introduced which will enhance our hazardous waste reduction efforts.

Thanks to a concerted team effort, our C-141 Production Division rolled out the first C-141 Center Wing Box aircraft on 14 Sep 93, 17 days ahead of schedule. This is the first of 113 Center Wing Box repairs that will be accomplished at a total contract award price of just over \$62 million.

An example of personal commitment & initiative from the highest to lowest level can be found in the Flexible Computer Integrated Manufacturing, or FCIM. This project is creating paperless engineering and manufacturing processes resulting in the ability to acquire, store, convert, and distribute intelligent digital descriptions of weapon system parts and assemblies. These accomplishments have been the result of investments in excess of \$30M over the past five years.

Teamwork and immediate technology transition played an important role for a team of engineers and technicians from the Technology and Industrial Support Directorate and the Materials Directorate/System Support Division at Wright Laboratory who combined forces to achieve a near-term solution that has allowed rapid repair of the cracked Weep Holes on C-141 aircraft. Keeping environmental and safety concerns in mind, Wright Labs developed and improved a method of surface preparation enabling WR-ALC to perfect the bonded Boron repair process. Repairs were initiated within 3 months from starting the project and, to date, 257 patches have been installed on 69 aircraft. This effort has allowed Team Robins to return the aircraft to Air Mobility Command for unrestricted flight ahead of schedule.

An in-house tear down and analysis was accomplished on a C-141 Empennage by our Engineering Testing Team and Materials Analysis Team. The high flight time structure was considered representative of all C-141 aircraft and was found to be free from structural defects or corrosion. Efforts such as this provide valuable information towards evaluating the flying future of the C-141 aircraft.

Members of the F-15 Management Directorate and Technology and Industrial Support Directorate came up with an unbeatable combination - a substantial money saving

design that increased the life span and improved the F-15 rudder. Because of technology improvements that were incorporated into the design, the new rudder is expected to last at least three times longer and is projected to cost approximately one half the current cost.

Aerospace Guidance and Metrology Center (AGMC)

The Directorate of Maintenance initiated a project to eliminate the use of Ozone Depleting Chemicals (ODCs). By the end of FY93, aqueous cleaning centers were in place for 55% of the workloads. The world now recognizes the hazards of stratospheric ozone depletion associated with the release of chlorofluorocarbon (CFC) compounds and other ODCs into the atmosphere. Responding to the customer's requirements to reduce, and eventually eliminate ODC use, the Aerospace Guidance and Metrology Center has combined aggressive in-house testing and development practices with streamlined procurement processes to slash the number of processes which use ODCs from 1,321 in FY92 to 647 as of the end of FY93. This translated to a reduction in the use of ODCs by more than 557,000 pounds (a reduction of over 45%) when compared to FY92 usage. Dividing the cost of these conversion efforts by the annual savings, based on the cost avoidance of not having to purchase these ODCs, yields a payback time of approximately two years. These accomplishments have shown that alternatives to processes using ODCs can be successfully implemented in a timely and cost effective manner. It is also noteworthy to mention that the implementation of non-ODC alternative processes has not only helped to protect the earth's ozone layer, but has made AGMC a more productive and safer place to work. Yields on many processes have increased after the conversion to non-ODC processes, and the workers are no longer required to work with hazardous solvents. As a direct result of these accomplishments, AGMC has been acknowledged as a leader in developing and implementing non-ODC processes.

Two-Level Maintenance (2LM) was implemented for the F-16 and A-10 weapon systems under the Coronet Deuce pilot program. With a turnaround time goal of 5.5 days, actual turnaround time was 3.5 days. The Theory of Constraints (TOC) concept was implemented in four work groups, with resulting decreases in turnaround time, work-in-process (WIP), and cost-of-repair per unit.

During FY93, the Directorate of Metrology, AGMC/ML at AGMC implemented IWSM for the Air Force Metrology and Calibration (AFMETCAL) Material Group

Manager (MGM). The AFMETCAL MGM is the Single Manager for acquisition and cradle to grave management of calibration standards for the Air Force Measurement Standards Laboratory (AFMSL) at Newark and 173 PMELs worldwide. The AFMETCAL MGM laboratory workload exceeded 12,500 units for USAF and FMS MGM laboratory workload and technical order production will be privatized in place. The inherently government management responsibility charged to the AFMETCAL MGM will continue to be executed by organic O&M AFMC resources at the Newark site.

Aerospace Maintenance and Regeneration Center (AMARC)

During FY93, AMARC received 671 aircraft and processed 911 into storage, increasing the Center's total inventory to more than 4,500 aircraft from various Services throughout DOD. The Center, using Total Quality Management (TQM) tools, reduced the number of manhours required to process aircraft into storage by 24 hours. This equates to a \$260,000 savings to the Government.

AMARC prepared 81 aircraft for flyaway and 84 were shipped overland. There were 45 F-106 aircraft flown to AEL, a contractor facility in East Alton, Illinois for conversion to drone configuration. One Navy F-4 was flown to Tracor, a contractor facility located in Mojave, California in support of the QF-4 Drone Program. Four Navy F-4s were flown to Cherry Point NAS/NADEP, North Carolina. Twenty-One AT-38 aircraft were flown to Holloman AFB, New Mexico in support of the FMS/Taiwan pilot training program. Two OV-10As were flown to Kelly AFB, Texas and two C-130Bs were transferred to foreign governments through the State Department.

In FY93, AMARC reclaimed and shipped 14,954 priority and 12,102 routine parts for a total of 27,056 parts returned to the DOD inventory. The value of assets (aircraft and parts) which AMARC returned to service in FY93 was \$734.4M. The Center's FY93 operating expense was \$50.1 million. This results in a net cost avoidance of \$14.65 for every dollar spent.

In support of the Strategic Arms Reduction Treaty (START), 365 B-52 aircraft are scheduled to be eliminated over a 3.5 year period. The Treaty requires they be cut into five pieces. As of 30 Sep 93, AMARC has eliminated 28 B-52s.

HQ AFMC WPAFB, OH DSN 787-XXXX	OC-ALC Tinker AFB, OK DSN 33X-XXXX	OO-ALC Hill AFB, UT DSN 458-XXXX	SA-ALC Kelly AFB, TX DSN 945-XXXX
LG - Directorate of Logistics 2635 MAJ GEN R. H. SMITH Director of Logistics	FM - Comptroller Dirct 6-2029 MR. R. CONNER Director	FM - Financial Mgmt 5076 MR. G. HATHENBRUCK Director	EM - Financial Mgmt 7234 MR. P. STEELY Director
MR. T. W. BATTERMAN Deputy Director 3731	LA - Aircraft Mgmt 6-2651 COL R. LEONARD Director	COL J. BALDRIGE Deputy	COL M. COOKE Deputy
Col W. J. KOHLER, JR. Deputy Director 2006	MR. L. KENNEDY Deputy	LA - Aircraft Directorate 3815 COL K. SULLIVAN Director	LA - Aircraft Mgmt 6218 COL P. HENNESSEY Director
VACANT Mobilization Assistant 2509	LI - Commodities Mgmt 6-5865 MR. M. AMIDAN Deputy	MR. M. AMIDAN Deputy	MR. E. GARCIA Deputy
LGI - Item Management 3100 COL W. ROBINSON Chief	MS. S. O'NEAL Director	LI - Commodities Dir 5712 COL R. BAILEY Director	LD - Equipment Mgmt 1227 COL R. RASMUSSEN Director
MR. L. FINCHER Deputy Chief	COL L. CHADWICK Deputy	MR. S. GENTUSZ Deputy	VACANT Deputy
LGP - Depot Maintenance 4760 MR. R. BATY Chief	LP - Propulsion Mgmt 6-2863 COL R. McKINNEY Director	LM - ICBM Directorate 8644 COL T. CROSSEY Director	LP - Propulsion Mgmt 7151 COL P. BIELOWICZ Director
MR. J. GLENN Deputy Chief	MR. G. RICHEY Deputy	MR. T. TAIT Deputy	MR. H. LANGE Deputy
LGR - Resource Mgmt 7114 MS. J. LEHMKUHL Chief	TI - Tech & Ind Support 6-3184 COL T. MILLER Director	TI - Tech & Ind Support 4504 MR. J. BLACK Director	TI - Tech & Ind Support 8620 MR. H. BROWN Director
LGS - Supply Operations 4108 COL R. BARNARD Chief	MR. G. RONCK Deputy	COL K. RHODEY Deputy	VACANT Deputy
LGT - Transportation 7201 COL G. RANEY Chief			NW- Nuclear Weapons 7287 COL C. STUTTS JR. Director
LGM - Operational Maintenance COL K. LEWANDOWSKI Chief 3355			MR. A. SANCHEZ Deputy
LT COL T. HAYES Deputy Chief			SE - Special Fuels Mngt. 4455 COL G. H. HORN, JR. Director
CLSS MAJ BLASZKIEWICZ 445 CLSS Commander 2711	CLSS LT COL R. DEHNERT 654 CLSS Commander 9-2953 LT COL K. SETTLE 507 CLSS Commander 9-2278	CLSS LT COL R. GARCIA 649 CLSS Commander 2121 LT COL J. HANSEN 419 CLSS Commander 2335	CLSS LT COL ARRANT 651 CLSS Commander 2954 LT COL HORLEN 433 CLSS Commander 7187

HQ AFMC/LG and Depot Field Staff Management

SM-ALC McClellan AFB, CA DSN 633-XXXX	WR-ALC Robins AFB, GA DSN 468-XXXX	AGMC Newark AFB, OH DSN 346-XXX	AMARC Davis-Monthan AFB, AZ DSN 361-XXXX
EM - Financial Mgmt 6410 MR. J. BARONE Director VACANT Associate Director	EM - Financial Mgmt 5751 MR. J. CULPEPPER Director VACANT Deputy	EM-Financial Mgmt MR. D. BAKER Director MA - Maintenance	EM-Financial Mgmt MAJOR R. DELL 'ARINGA Director LG - Logistics
LA - Aircraft Mgmt 5441 COL W. ADAMS Director MR. R. HUNTER Associate Director	LB - C-130 Mgmt 2322 COL B. MCCARTER Director MR. W. HATCHER Deputy	MR. A. SKUFCA Director VACANT Deputy ML - Metrology	MR. S. DETRICK Director MR. C. CORDIER Associate Director LA - Aircraft Mgmt
LH - Space & C3 Mgmt 4854 COL M. FLYNN Director MR. K. PERCELL Associate Director	LF - F-15 Mgmt 2901 COL W. RUTLEY Director MR. B. OLIVER Deputy	COL W. HOGAN Chief MR. B. FULLEN Deputy	MR. C. ROGERS Director TI - Industrial Support
LI - Commodities Mgmt 2826 COL R. AGNOR JR Director MR. F. MASON Associate Director	LI - C-141 Mgmt 6491 COL C. JOHNSON II Director MR. M. CRONAN Deputy		MS. J. ASKENASY Director
TI - Tech & Ind Support 2010 MR. F. TUCK Director COL P. THOMPSON Associate Director	LN - EW Management 3371 COL H. CALCUTT JR. Director MR. B. MCDONALD Deputy LY - Avionics Mgmt 3363 COL G. EASTERLY Director MR. G. PEARL Deputy		
	TI - Tech & Ind Support 3703 MR. C. LEWIS Director COL A. NIEDBALSKI Deputy LU - SOF System Program Office COL S. BISHOP Director 2826 MR. G. MARTIN Deputy		
CLSS LT COL CLOSE 2951 652 CLSS Commander LT COL R. VIDMAR 4753 604 CLSS Commander	CLSS LT COL COLLINS 2955 653 CLSS Commander LT COL MICHELS 3115 622 CLSS Commander	IMA CATEGORY A LT COL J. HEITZ 7917 Maintenance Reserves	

	A Touch of CLaSS
Active Duty Squadron	
649 CLSS	Hill AFB, UT
651 CLSS	Kelly AFB, TX
652 CLSS	McClellan AFB, CA
653 CLSS	Robins AFB, GA
654 CLSS	Tinker AFB, OK
Reserve Forces Squadron	
445 CLSS	Wright-Patterson AFB, OH
622 CLSS	Robins AFB, GA
507 CLSS	Tinker AFB, OK
433 CLSS	Kelly AFB, TX
419 CLSS	Hill AFB, UT
604 CLSS	McClellan AFB, CA

The mission of Combat Logistics Support Squadrons (CLSS) is to provide highly trained, worldwide-deployable, Aircraft Battle Damage Repair (ABDR), Supply Augmentation Team (SAT), and Packaging Augmentation Team (PAT) teams to the operating commands in wartime. Additionally, CLSS units continue to provide valuable depot level assistance around the globe. The following is a unit-by-unit review of the active duty CLSS squadron activities for FY93.

649 CLSS, Hill AFB, UT

The 649th Combat Logistics Support Squadron (CLSS) applied its expertise in 1993 to significantly enhance the combat capability and functions of USAF and friendly forces throughout the world. We were proud recipients of the Air Force Maintenance Effectiveness and the Outstanding Unit Awards. Personnel expended 76,214 manhours while deployed to 97 overseas and stateside bases. This involved 94 teams comprised of 426 personnel for a total of 2,692 days. A highlight of all our repair actions during 1993 was the first-ever in-the-field repair of an extensively damaged Foreign Military Sales Turkish F-16 aircraft. Repair actions included replacement of four major bulkheads, rejoin of the forward and center fuselage sections which had become separated during the crash, and complete aircraft systems checkout. The normal repair time of 15 months was cut in half by our dedicated CLSS 13-member team. The aircraft released on its first FCF with but minor discrepancies. The crash damage repair program completed three aircraft in 1993 with two presently in work. F-16C 88-0495, which received Surface-Air-Missile damage in Desert Storm, in work 20

months, will release in May 94 five months ahead of schedule.

Rapid Area Distribution Support Teams performed in five different countries conducting base closure and redistribution support. Our basewide Supply and Transportation support was monumental, as personnel provided assistance to the Defense Logistics Agency, Technology and Industrial Support Directorate, and Defense Depot Ogden. Additionally, the Aircraft Directorate and Landing Gear facility benefited increasingly from our maintenance expertise.

The Hill Aerospace and Air Force Museum continued to expand in size and popularity due in large part to the 649 CLSS efforts. Personnel contributed 9,756 manhours in the manufacturing of MIG-21 parts, reskin of B-29 and C-54 flight control surfaces, towing of C-54, reanchoring, and bird proofing of all aircraft on display.

651 CLSS, Kelly AFB, TX

New ground was broken by the 651st CLSS that kept our men and women honed to high states of combat readiness. Our people contributed immensely to the Air Force mission in the areas of Aircraft Maintenance, Propulsion Maintenance, and Supply and Transportation.

To help alleviate the backlog of C-5 aircraft awaiting Programmed Depot Maintenance, the 651st was tasked by the SA-ALC Commander to take a C-5 through depot maintenance utilizing only CLSS personnel. This three month project provided invaluable training for our C-5 maintainers, and put a desperately needed airlift resource back into the C-5 fleet ahead of schedule. Our performance was so impressive that we took another C-5 that was behind schedule and delivered it on time. A tribute to our quality work was evident in the functional check flights of both aircraft. Each C-5 passed or "bought" on their first flight, a rarity in the C-5 depot world.

FY93 was also a transitional year for the 651 CLSS. Due to personnel cutbacks and the acquisition of the new C-17 transport, we shifted our ABDR responsibilities of the B-52 to 654 CLSS and concentrated our efforts on the acquisition of C-17 ABDR. This required extensive training of all our B-52 maintainers, especially advanced composite schools for our structural people.

Two levels of Maintenance has been a mainstay for our Propulsion Branch in FY93. We spearheaded the SA-ALCF100 Two Levels of Maintenance program for SA-

Combat Logistics Support Squadrons

ALC through training civilian technicians, building engine docks out of DRMO materials saving over 250,000 dollars, and contributing to the Two Levels Mobility Conference. In addition to our Two Levels work, we augmented numerous Air National Guard engine shops providing desperately needed propulsion maintainers during a period of alarming cutbacks.

Equally impressive, are the accomplishments of the Supply and Transportation Flight. Both elements have deployed to almost every part of the globe, spending 90 percent of 1993 on the road. Just a few of our successes included joint Supply and Transportation taskings at the Indian Ocean Tracking Station, Republic of Seychelles; where the team packed and shipped satellite tracking equipment for Space Command. Our RADS teams also completed Base Closure projects at Bergstrom and Carswell AFB, Texas. While on homestation, supply personnel assisted Defense Reutilization and Marketing Office with "Operation Coral Reduce," and inventory reduction program and in precious metal recovery operations. Our supply folks also assisted Lackland Base Supply with relocation of assets to their new logistics facilities. Additionally, the Supply Element completed rewarehousing projects at Incirlik AB, Turkey and at Clear AFS, Alaska. The Transportation Element completed two projects for the Inter-American Air Force Academy (IAAFA) deploying to Homestead AFB, FL to recover OV-10 aircraft parts damaged during Hurricane Andrew.

652 CLSS, McClellan AFB, CA

The 652 CLSS continued to live up to its motto, "A Touch of CLaSS," by ensuring total customer satisfaction and quality products. Our infallible maintenance teams accumulated more than 224,814 man-hours while simultaneously satisfying our peacetime mission requirements of depot-level modifications, heavy maintenance, service bulletins, and wartime training. A-10 aircraft teams responded almost overnight to an urgent request from Headquarters United States Air Forces in Europe to augment flightline maintenance at Spangdahlem Air Base, Germany — an unprecedented tasking. Once in place, they rescued a rapidly declining mission-capable rate, raising it from 77.5 percent to an impressive 91 percent. Concurrently, the sortie generation rates increased from 16 sorties per day to an awesome 62 sorties per day. Our F-117 maintainers, "Team Stealth," continued an excellent tradition in F-117A maintenance while deployed to Holloman Air Force Base, New Mexico. Team Stealth installed 18 service bulletins on 32 aircraft and saved \$625,000 compared to contractor cost. Our F-

111 maintainers also provided unmatched technical assistance to customers at Cannon Air Force Base, New Mexico, and the Aerospace Maintenance and Regeneration Center (AMARC), Davis-Monthan Air Force Base, Arizona. As the most sought-after experts today, they responded quickly to our customers, saving over \$40,000 while earning 4,018 man-hours.

The rapid area distribution support (RADS) team continued to span the globe, supporting taskings such as base closures, rewarehousing, and weapon system conversions. Our RADS team's biggest undertaking processed more than 35,000 line items — enough supplies and equipment to support a 1,500-bed contingency hospital at RAF Upwood, United Kingdom. Moreover, the RADS team processed more than 40,000 line items on combined weapon system conversions and rewarehousing projects. The RADS team packaged over 829,000 pounds of cargo while recovering special tooling, test equipment, and flight simulators. Most noteworthy, however, were our superior efforts in the expeditious closure of Mather Air Force Base, California; the 652 CLSS handled over 130 truckloads of property.

The overall accomplishments of the 652 CLSS won the squadron great acclaim throughout the year, as well as numerous coveted organizational and individual awards, including the Air Force Outstanding Unit Award and the AFMC Logistics Manager of the Year, Junior Manager Award. We also had three distinguished graduates and one Commandant Award winner from professional military education.

653 CLSS, Robins AFB, GA

Continuing to exceed its standard of excellence, the squadron garnered its sixth Air Force Outstanding Unit Award and won the 1992 USAF Maintenance Effectiveness Award (MEA). The squadron received these awards based on innovative management actions, effective use of maintenance resources, continuous quality improvements, workload planning and execution, and base/community involvement. General Yates presented the prestigious MEA to the men and women of the 653 CLSS in September 1993.

During FY93, 165 squadron technicians deployed on 78 depot field teams (DFT) and rapid area distribution support (RADS) teams. Aircraft maintenance personnel repaired over 83 C-130, C-141, F-15 and H-53 aircraft, while supply and transportation personnel assisted 21 units in performing base closures, weapon system conver-

sions, and re-warehousing projects. Of particular note was a recovery project for the Egyptian Air Force, where a C-130 sustained primary structure and subsystem damage after the main landing gear collapsed during taxi operations. Squadron personnel worked with the WR-ALC C-130 Foreign Military Sales office to requisition over \$750,000 in parts and supplies, and identified the necessary tools and equipment required to complete the task. Subsequently, over 16 tons of equipment, tooling, and materials were needed for the repair. A 14-man DFT deployed to Cairo to repair the C-130 which hadn't flown in over four years. After 7,900 man-hours, the project was completed 35 days ahead of schedule and saved more than \$250,000. In addition to DFTs, the squadron played a key role in supporting WR-ALC depot maintenance. For example, 40 maintenance personnel augmented the C-141 Management Directorate in performing Time Compliance Technical Order (TCTO) 1C-141B-526, (repair of weep holes) on three C-141 aircraft wing tanks. The team worked 10-hour shifts, providing 7-day coverage for a period of 90 days. The team's outstanding efforts increased on-station production by 12 percent.

Supply & Transportation personnel also provided outstanding support. Our RADs personnel were hand-picked to deploy to RAF Bicester, UK, to pack 38 tons of excess medical equipment for shipment to Lithuania as part of a national humanitarian effort. The 5-person team voluntarily worked 12-hour shifts, six days a week, and completed this formidable tasking in 60 percent of the normal time.

654 CLSS, Tinker AFB, OK

The 654th CLSS accomplished a great deal in FY93. The following is a summary of the major accomplishments:

Invested 8,832 hours plus 488 overtime hours at Ellsworth AFB, SD in the repair and restoration of a KC-135R that was severely damaged from fuselage station 360 to fuselage station 620 during a mid-air collision with a B-1B.

Accomplished a temporary repair to a KC-135R at Eielson AFB, Alaska which was damaged in a ground mishap, allowing test flight personnel to safely fly aircraft back to depot for a permanent fix.

During the week of 7 July-11 July 1993 the CLSS was tasked to do an "Over-G" inspection on the Open Skies aircraft from Wright-Patterson AFB, OH. The team was also tasked to repair damages caused by a lightning strike.

The original time of completion was 3 weeks, due to the urgency of the aircraft the time was reduced to 4 days. The CLSS met the new completion date saving approximately \$8,500 and the aircraft flew without any write-ups on its maiden voyage.

In January 1993 a Depot Field Team (DFT) was sent to Geilenkirchen AB, Germany to install single Dorne-Margolin antenna and associated equipment on 17 NATO AWACS aircraft. CLSS installed the LST-5 Satellite Communications Radio and equipment and performed ground operations checks of all equipment. In May 1993 the French Air Force required the same modifications to their E-3F aircraft, to align them with the NATO forces. A DFT was deployed to Avord AB, France to complete this task. The installation of the kits required precision placement and drilling of the components and antennas to assure proper communications links. The entire NATO and French E-3 fleets were completed in a total of 8 weeks, this is 2 months ahead of the estimated time a civilian contractor had established.

In FY1993, the standardized procedure for the repair of the 25 degree longeron cracks on the B-1B fleet was finalized. CLSS personnel worked with OC-ALC and Rockwell International engineers to produce a workable procedure. Procedures require close tolerance machine work, constant monitoring of curing procedures, and exacting forms documentation. Deployed maintenance teams to McConnell AFB, KS, Ellsworth AFB, SD, and Dyess AFB, TX to begin the repair estimated to take three years to complete. Assisted the PDM moving line with the completion of seven aircraft. Reduced required working time of repair from two weeks to four days. As of 17 May 94, 58 aircraft have been completed leaving 37 to repair. 8 of them will be done by the PDM line and the remaining 29 will be completed by CLSS field teams.

When four F-16 aircraft were destroyed and two aircraft were forced to make "Dead" Stick landings as a result of catastrophic engine failures, we were tasked to develop and complete extensive inspections on the F110 inventory. The inspection proved effective when CLSS identified and removed from service six F110 engines with misaligned stator vanes that were subject to imminent failure. The completion of this safety TCTO ensured the flight integrity of the F-16 aircraft and kept our forces in a combat ready posture.

In January of 93, we deployed F101 engines maintenance teams to Dyess AFB, TX, Ellsworth AFB, SD, and Grand Forks AFB, ND and prevented the impending grounding

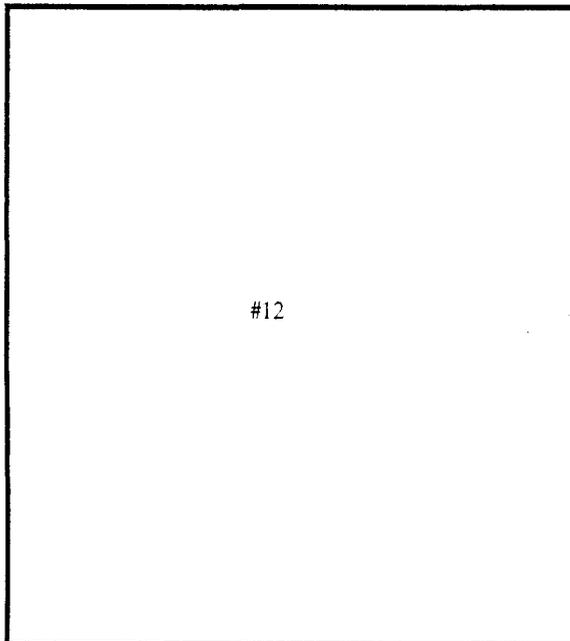
of the assigned B-1B aircraft.

We deployed a E-3A aircraft engine maintenance team to Geilenkirshen AB, Germany and trained our allies on all aspects of TF33-P100A engine conditional and depot level repairs. Geilenkirshen is now a competent and self-sufficient TF33 engine maintenance organization.

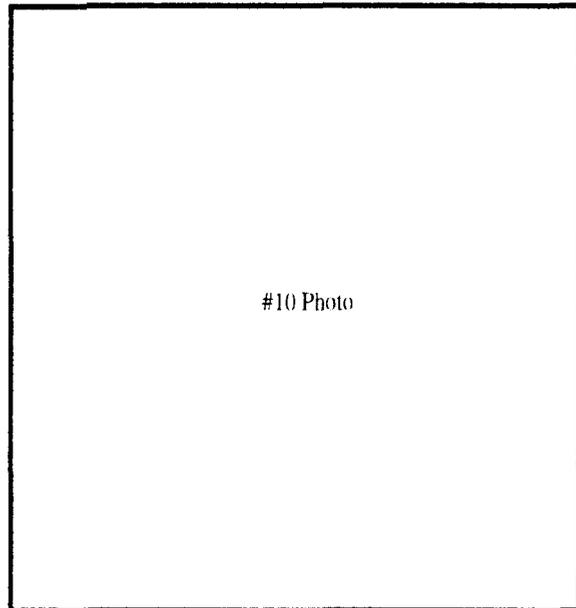
CLSS engine technicians provided OC-ALC civil service employees the training and experience to perform two-level maintenance tasking on F108 and TF33 engines. At the initial stages of two-level maintenance, the civilian workforce was unfamiliar with the maintenance of quick engine change kits and "Field" level repair procedures. We provided this knowledge and expertise and kept production flow time to a minimum.

CLSS personnel completed 66 performance modifications and the overhaul of five Israeli Air Force's F110 engines under contract at the OC-ALC. CLSS assistance enabled the project to be completed two weeks ahead of schedule.

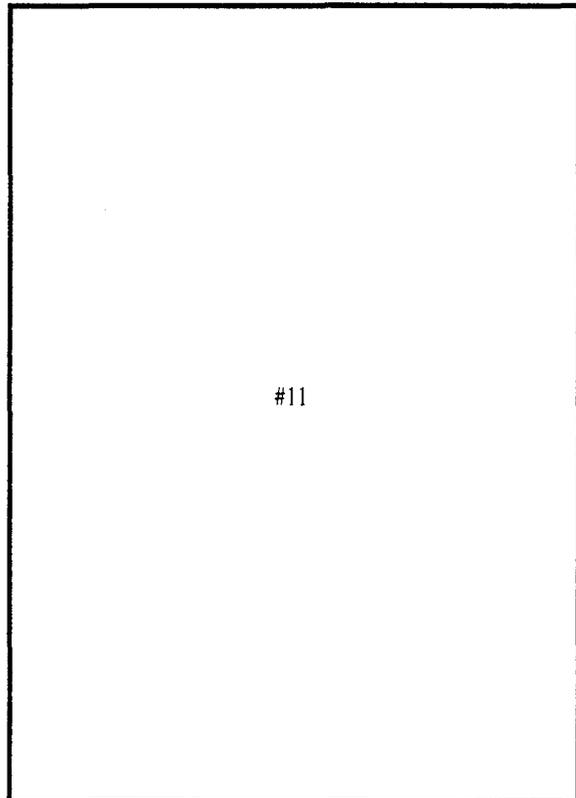
In April 93, we provided F101 engine repair assistance to the OC-ALC Programmed Depot Maintenance (PDM) unit. CLSS technicians returned two F101 engines damaged by foreign objects to service in only 14 days, enabling a Dyess AFB, assigned B-1B aircraft to complete PDM on schedule.



OO-ALC: Investment Casting Facility is the largest in the USAF.



SM-ALC: A pilots survival tactics demandevasive maneuvers when being tracked by enemy radar. McClellan manages and maintains all Air Force ground electronic warfare simulators and other systems through our Red Force Range Center.



WR-ALC: This photo shows the sheet metal production shop at WR-ALC with the fluid cell press as the centerpiece of our sheet metal forming operations. The fluid cell press has the ability to form multiple parts in a single cycle. The fluid cell press gives DOD a unique capability in sheet metal forming.

During FY93, our organic production was more than 35.0 million Direct Product Actual Hours (DPAHs). This is a drop of 6% from FY92 levels. The biggest drop occurred in the Exchangeable workload. Table 1 shows the organic workload distribution in DPAHs. Table 2, 3, and 4 shows the sales revenue breakout by Center and type of workload. The organic to contract percentage split is approximately 72/28% based on sales revenue.

Table 1. FY93 Organic Production (DPAHs 000)

WORKLOAD CATEGORY	OC-ALC	OO-ALC	SA-ALC	SM-ALC	WR-ALC	AGMC	AMARC	TOTAL
Aircraft	2,768	2,021	1,691	2,016	3,779	0	0	12,275
Missiles	0	816	0	0	0	0	0	816
Engines	746	0	1,857	0	0	0	0	2,603
OMEI	0	59	0	938	0	0	0	997
Exchangeables	2,338	2,029	3,442	1,847	2,341	896	185	13,078
Software	393	858	142	647	804	54	0	2,898
*Other	282	396	274	659	459	11	460	2,541
Total	6,527	6,179	7,406	6,107	7,383	961	645	35,208

Table 2. FY93 Total Sales Revenue (\$000)

WORKLOAD CATEGORY	OC-ALC	OO-ALC	SA-ALC	SM-ALC	WR-ALC	AGMC	AMARC	SGE	TOTAL
Aircraft	378,858	159,702	175,465	169,774	461,860	0	0	212	1,345,871
Missiles	0	72,991	0	0	0	0	0	0	72,991
Engines	108,030	0	211,142	0	0	0	0	0	319,172
OMEI	116	6,460	4,760	77,942	8,406	0	0	0	97,684
Exchangeables	344,005	297,392	571,041	241,770	301,662	76,473	0	1	1,832,344
Software	74,384	63,063	19,325	37,303	85,945	4,159	0	0	284,179
*Other	24,460	26,237	13,587	38,969	31,839	1,641	46,306	1	183,039
Total	929,853	625,845	995,320	565,758	889,712	82,273	46,306	213	4,135,280

Table 3. FY93 Organic Sales Revenue (\$000)

WORKLOAD CATEGORY	OC-ALC	OO-ALC	SA-ALC	SM-ALC	WR-ALC	AGMC	AMARC	SGE	TOTAL
Aircraft	217,581	154,303	89,539	162,209	285,256	0	0	212	909,100
Missiles	0	50,509	0	0	0	0	0	0	50,509
Engines	98,695	0	155,018	0	0	0	0	0	253,713
OMEI	0	5,162	0	74,400	0	0	0	0	79,562
Exchangeables	279,386	198,900	353,632	204,602	228,823	76,473	0	1	1,341,817
Software	22,507	53,545	5,975	24,735	49,882	4,159	0	0	160,803
*Other	24,460	26,237	13,587	38,969	31,839	1,641	46,306	0	183,039
Total	642,629	488,656	617,751	504,915	595,800	82,273	46,306	213	2,978,543

Table 4. FY93 Contract/Interservice Sales Revenue (\$000)

WORKLOAD CATEGORY	OC-ALC	OO-ALC	SA-ALC	SM-ALC	WR-ALC	AGMC	AMARC	SGE	TOTAL
Aircraft	161,277	5,399	85,926	7,565	176,611	0	0	0	436,771
Missiles	0	22,482	0	0	0	0	0	0	22,482
Engines	9,335	0	56,124	0	0	0	0	0	65,459
OMEI	116	1,298	4,760	3,542	8,406	0	0	0	18,122
Exchangeables	64,619	98,492	217,409	37,168	72,833	0	0	0	490,527
Software	51,877	9,518	13,350	12,568	36,062	0	0	0	123,376
*Other	0	0	0	0	0	0	0	0	0
Total	287,224	137,189	377,569	60,843	293,912	0	0	0	1,156,737

Note that totals in tables 2, 3, and 4 include SGE RAF, Kemble which contributed residual revenue prior to closing.
* Other depicts local manufacture, base tenant and area support, and storage/regeneration.

AIRCRAFT

Aircraft production includes all aircraft undergoing Programmed Depot Maintenance (PDM) and Analytical Condition Inspection (ACI).

Table 5. FY93 Aircraft Production by Repair Activity (Units)

ACTIVITY	ORGANIC	CONTRACT/ INTERSERVICE	TOTAL
OC-ALC	87	2	89
OO-ALC	318	0	318
SA-ALC	80	0	80
SM-ALC	164	1	165
WR-ALC	310	392	702
TOTAL	959	395	1,354

Table 6. FY93 Aircraft Production by MDS Activity (Units)

MDS	ORGANIC	CONTRACT/ INTERSERVICE	TOTAL
A-10	97	1	98
B-1B	18	0	18
B-52 G&H	15	0	15
B-58	1	0	1
C-5	44	0	44
C-12	0	0	0
C-9	0	0	0
C-18	0	0	0
C-22	0	0	0
C-130	112	100	212
C-137	0	0	0
C-141	120	130	250
E-3	12	0	12
E-3 RSAF	0	2	2
E-4	0	0	0
EF-111A	8	0	8
FB-111A	0	0	0
F-111A	0	0	0
F-111C	2	0	2
F-111D	0	0	0
F-111E	2	0	2
F-111F	19	0	19
F-111G	0	0	0
F-15	155	162	317
F-16A	127	0	127
F-16B	21	0	21
F-16C	81	0	81
F-16D	15	0	15
F-5	1	0	1
F-4D	0	0	0
F-4E	12	0	12
F-4G	15	0	15
RF-4C	2	0	2
C/KC-135	58	0	58
KC-10	0	0	0
OV-10	0	0	0
T-38	22	0	22
T-43	0	0	0
Total	959	395	1,354

Aircraft production remained relatively stable compared with FY92 levels. Organic production levels went up slightly and contract/interservice levels went down slightly. The largest overall MDS unit increase from FY92 took place on the F-15 and C-141 aircrafts (156% and 81% respectively above FY92 levels).

Table 7. AMARC Production (Units)

Category	FY93	FY92	FY91
Flyaway Withdrawal	81	76	63
Overland Withdrawal	84*	44	100
Museum Withdrawal	*	37	41
Storage Input (Aircraft)	911	762	451
Represervation	35	122	73
Maintain-In	5,455	4,825	3,718
Reseals	0	526	932
Reclamation	27,056	255	467

* Overland and Museum withdrawals were combined for FY93. Reclamation number for FY93 includes all parts, not just aircraft.

Table 8. AMARC Production (DPAH)

Category	FY93	FY92	FY91
Flyaway Withdrawal	103,239	102,286	116,917
Overland Withdrawal	6,978	13,388	10,618
Museum Withdrawal	123,037	4,463	4,304
Storage Input (Aircraft)	186,287	158,039	110,444
Represervation	5,477	19,751	14,629
Maintain-In	10,552	11,273	12,951
Reclamation	40,384	20,153	50,309
Priority Removals	170,520	173,855	163,854
Total	646,474	503,208	484,026

Table 9. AMARC Dollar Value (\$000)

Category	FY93	FY92	FY91
Flyaway Withdrawal	270,681	7,204,115	128,363
Overland Withdrawal	69,676	778,670	66,270
Museum Withdrawal	*	259,523	47,518
Storage Input (Aircraft)	3,005,709	9,740,780	1,848,882
Reclamation	399,974	1,419,780	188,221
Total	3,746,040	19,402,868	2,279,254

* Overland and Museum withdrawal was combined for FY93.

AMARC continues to provide a valuable service to the DoD. Tables 7, 8, and 9 summarize the FY93 activities.

ENGINES

In FY93, engine/modules units produced dropped by 18% from FY92 levels. Aircraft flying hour reductions and the continued improvement in engine reliability were the big drivers. Table 10 shows the production breakout by engine series. SA-ALC's largest workload continues to be the F100 series engines. OC-ALC continued to expand its organic capability on the newer engines, the F101, F107, F108, and F110 series.

Table 10. FY93 Engine/Module Production (Units)

TMS	ORGANIC	CONTRACT	INTER-SERVICE	TOTAL
F100-100	1133	0	0	1133
F100-200	1285	102	0	1387
F100-220	0	0	0	0
F100-220E	155	0	0	155
F101-102	26	0	0	26
F107-101	413	0	0	413
F108-100	23	0	0	23
F110-129	2	0	0	2
F110-100	89	0	0	89
F110-ENSII	1	0	0	1
F110-400	0	0	7	7
F112-100	23	0	0	23
F118-100	0	0	0	0
G56-15	0	0	0	0
G/T-400	0	0	37	37
J57	0	0	0	0
J60	0	1	0	1
J79	0	0	0	0
J85	0	6	0	6
T53	0	0	2	2
T56	358	280	0	638
T58	0	0	0	0
T64	0	0	0	0
T76	0	0	32	32
T700	0	0	10	10
TF30	115	0	81	196
TF33	273	0	0	273
TF34	0	0	0	0
TF39	27	0	0	27
TF41	0	0	0	0
10-360	0	7	0	7
CFM56	0	0	0	0
TRIGO-2	0	0	0	0
Total	3,923	396	169	4,488

EXCHANGEABLES

Table 11 shows the level of exchangeable repairs in FY93. The total level of exchangeable repairs decreased by approximately 26.2% in FY93 over FY92 levels. The drop primarily occurred on the organic side of the ledger, where the Command experienced a reduction of approximately 200,000 units from the FY92 level.

Table 11. FY93 Exchangeable Component Production (Units)

ACTIVITY	ORGANIC	CONTRACT/ INTERSERVICE	TOTAL
OC-ALC	111,975	0	111,975
OO-ALC	75,276	0	75,276
SA-ALC	60,387	160,990	221,377
SM-ALC	121,002	10,121	131,123
WR-ALC	124,489	56,261	180,750
AGMC	11,173	0	11,173
Total	504,302	227,372	731,674

Table 12. Organic Workload Distribution (DPAHs in millions)

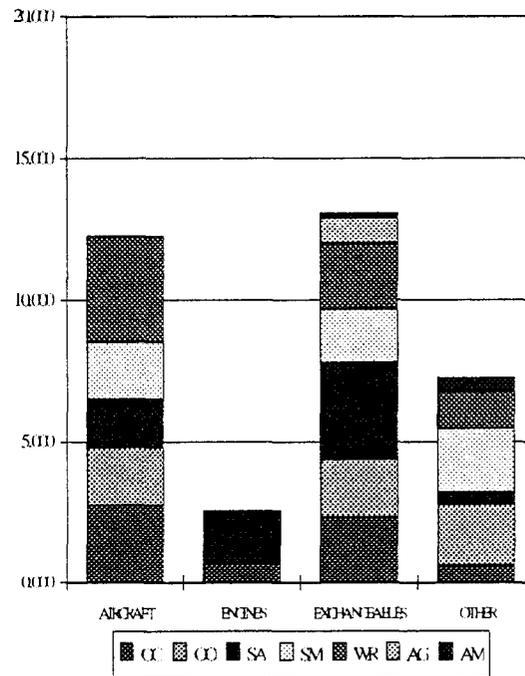


Table 12 is based on data taken from Table 1. 37% of depot maintenance workload measured in DPAHs is consumed by exchangeables. Another 35% is consumed by aircraft. By center, the organic workload percentage breakout is as follows:
 OC-ALC: 18.54% WR-ALC: 20.97%
 OO-ALC: 17.55% AGMC: 2.73%
 SA-ALC: 21.03% AMARC: 1.83%
 SM-ALC: 17.35%

FY93 INTERSERVICE WORKLOAD

The level of interservicing was up slightly in FY93 and is reflected in Table 13. The DMI Study Introductions for the 1978-1993 time frame and for 1993 only are shown in Table 14 and 15 respectively.

Table 13. FY93 Interservice Workload

Depot Maintenance Budget \$

SERVICES	AGENT	PRINCIPAL	TOTAL
Army	9,001,794	27,564,175	36,565,969
Marines	844,753	13,692	858,445
Navy	64,727,734	150,042,667	214,770,401
Total	74,574,281	177,620,534	252,194,815

Includes NIMSC 5, the ALC's, AMARC, and AGMC.
Agent is the seller and principal is the buyer.

Table 14. DMI Introductions

DMI Study 1978-93 Introductions

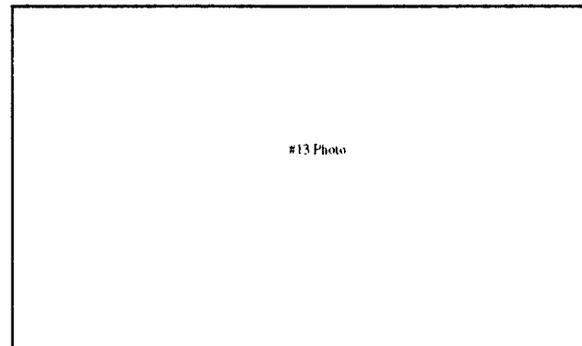
WORK BREAKDOWN STRUCTURE	USA	USN	USAF	USMC	TOTAL
Aircraft	111	220	310	0	641
Missiles	34	40	53	1	128
Ships	7	100	1	0	108
Combat Vehicles	37	1	1	4	43
Automotive	10	1	1	6	18
Construction Equip.	8	1	0	5	14
Electronic & Comm Systems	191	81	187	35	494
Ordinance, Weapons & Munitions	14	6	4	1	25
General Purpose Equip	9	3	7	1	20
Total	421	453	564	53	1,491

Table 15. DMI Study 1993 Introductions

WORK BREAKDOWN STRUCTURE	USA	USN	USAF	USMC	TOTAL
Aircraft	0	6	3	0	9
Missiles	0	0	0	0	0
Ships	0	6	0	0	6
Combat Vehicles	1	1	0	0	2
Automotive	1	0	0	1	2
Construction Equip	0	0	0	0	0
Electronic & Comm Systems	0	1	0	5	6
Ordinance, Weapons & Munitions	0	0	0	1	1
General Purpose Equip	0	1	1	1	3
Total	2	15	4	8	29

AMARC is the Air Force Materiel Command's premier interservice location. AMARC services aerospace weapon systems and related aircraft support equipment for all of the Armed Services, the Coast Guard, Forest Service, Defense Logistics Agency, and Smithsonian Institute. AMARC performs storage, disposal, reclamation, maintenance in storage, priority removal and withdrawals.

AMARC has returned to flyable status F-100 aircraft that are made into drones by a contractor. AMARC also returns four F-4s a year to flyable status for the Navy.



SSgt Bob Hall, from the 653 CLSS, Robins AFB, GA., performs structural modification to a MH-53J Pave Low III helicopter on the Service Life Extension Program Line at NAS Pensacola, Florida.

Well maintained and modern facilities and equipment are vital to the support of the Air Force's weapon systems. We make it our effort to achieve this by continuously improving the use of our resources and by modernizing AFMC's Depot Maintenance operations on a continuous basis.

FACILITIES

Maintenance industrial facility improvements are programmed, budgeted and controlled as Maintenance and Repair, Minor Construction or Military Construction (MILCON) Projects. Maintenance and Repair projects are funded through the Depot Maintenance Business Area of the Defense Business Operations Fund. Minor Construction projects are construction projects costing \$300,000 or less and are funded through the Capital Purchases Program (CPP). In FY93, \$29.0 million was allocated to Maintenance and Repair and Minor Construction Projects.

MILCON projects are construction projects costing over \$300,000 and are funded through P-341 or MILCON programs as appropriate. Table 17 shows the actual and projected funding for new MILCON projects. There was \$31.5M of MILCON funds programmed for Depot Maintenance in FY93.

CAPITAL PURCHASES PROGRAM (CPP)

CPP is an AFMC effort to maintain the industrial base at the centers. This program finances the modernization of

the organic depots through the procurement of industrial maintenance equipment, equipment modifications, Minor Construction and Management Information System improvements. In FY93, the CPP budget was \$47.0M.

FACILITY & EQUIPMENT VALUE

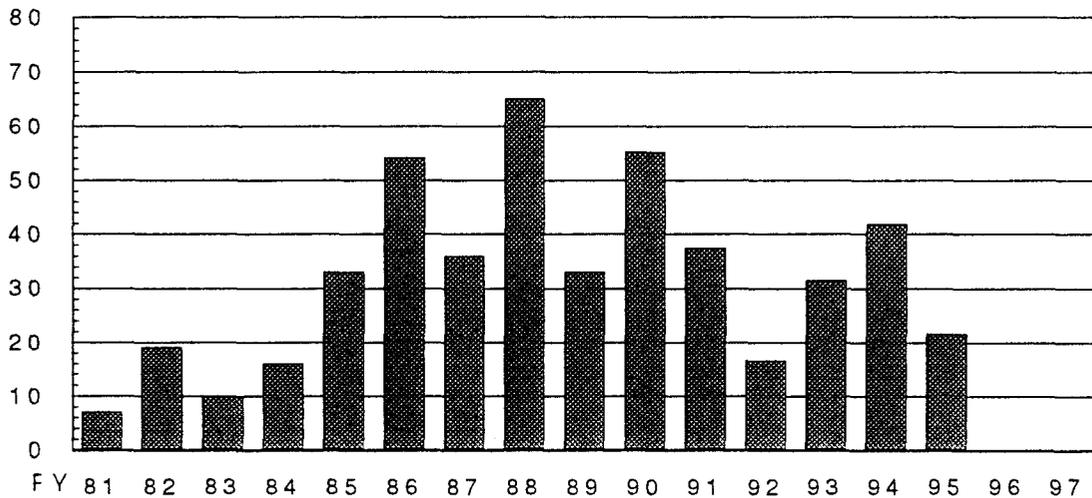
Table 16 shows the value of depot maintenance facilities and equipment and the number of facilities and space owned by the Depot Maintenance Business Area (DMBA). It includes depot maintenance values only. In recent years the DMBA has made it a priority to manage depot maintenance capacity and gain control over this critical resource.

Table 16. FY93 Value of Facilities and Equipment

CENTER	NUMBER FACILITIES	*FACILITY (\$M)	*EQUIP (\$M)	SPACE (MILSQFT)
OC-ALC	59	1,279.0	565.5	5.5
OO-ALC	299	1,057.0	814.0	4.3
SA-ALC	92	533.0	676.0	4.8
SM-ALC	107	643.0	561.7	3.6
WR-ALC	86	586.0	577.3	3.6
AGMC	5	143.0	361.5	0.4
AMARC	81	27.0	18.4	1.4
Total	729	4,268.0	3,574.4	23.6

*Replacement value has been used.

Table 17. Facility Funding (FY81-97)
(\$ M)



FY81 through FY93 are actuals. FY94 through FY97 are projections.

Includes Maintenance Projects in PIF and other sources of MILCON funding.

Financial Performance

The FY93 depot maintenance financial performance was again a successful one. While concentrating on quality depot support, Air Logistics Centers have become more business oriented in day-to-day operations, focusing on bottom-line results. Defense Management Review (DMR) productivity initiatives, Depot Maintenance Competition

(DMC), and other actions will enable depot maintenance to remain financially viable. Despite tremendous turmoil in the depot maintenance community with manpower and funding reductions the DMBA continues to provide good value for the taxpayer. Tables 18 and 19 summarize the FY93 performance.

**Table 18. Depot Maintenance Business Area (DMBA)
Statement of Financial Condition FY93 (\$000)**

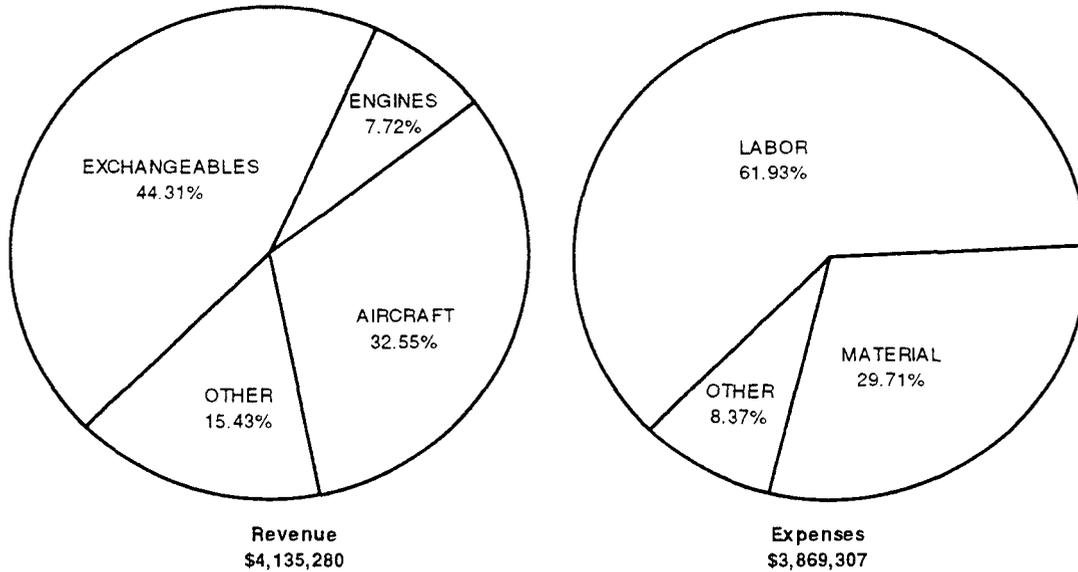
<u>Assets</u>	<u>FY93</u>	<u>FY92</u>
Fund Balance with U.S. Treasury	1,187,621	386,518
Undistributed Cash Disbursements/Collections	256,073	205,353
Accounts Receivable		
Organic Accounts Receivable	184,577	86,311
Contract Accounts Receivable	50,869	131,624
Other Accounts Receivable	16,438	1,325
Total Receivables	251,884	219,260
Inventories		
Organic Inventories		
Production Work In Process	244,477	495,263
Less Progress Payments	(188,988)	(230,593)
Material On Hand	244,447	16,290
Material Intransit	(2,388)	2,728
Total Organic Inventories	297,548	283,688
Contract Inventories		
Production Work In Process	356,640	332,458
Less Progress Payments	(198,896)	(319,869)
Material On Hand	177,694	74,682
GFM Inventory Consumed	(25,675)	(74,682)
Material Intransit	73,726	1,582
Total Contract Inventories	383,489	14,171
Total Inventories	681,037	297,859
Other Assets	110,343	123,308
Fixed Assets	1,002,672	1,505,819
Other Fixed Assets	713	974
Total Assets	3,490,341	2,739,087
<u>LIABILITIES AND CAPITAL</u>		
Accounts Payable		
Organic Accounts Payable	775,406	61,152
Contract Accounts Payable	691,280	136,510
Total Payables	1,466,686	197,662
Organic Accrued Expenses		
Civilian Wages	36,473	33,851
Civilian Leave and Benefits	83,812	83,083
Other	77,738	71,129
Total Organic Accruals	198,023	188,063
Contract Expenses	651,581	689,778
Total Accrued Expenses	849,604	877,841
Net Capitalization	1,030,203	1,621,054
Cash Allocations - Net	0	(45,500)
Reserves for Equipment	(136,757)	254,883
Non-Operating Expense	(23,464)	40,291
Cumulative Operating Results	304,069	166,853
Total Capital	1,174,051	1,663,584
Total Liabilities and Capital	3,490,341	2,739,087

Table 19. Five Year Summary of DMBA Financial Operating Results (\$000)

	FY93	FY92	FY91	FY90	FY89
SALES REVENUE (ORGANIC)					
Aircraft	909,100	665,565	583,204	591,323	527,628
Missiles	50,509	42,632	43,992	43,264	52,723
Engines	253,712	214,707	219,571	218,067	220,992
Exchangeables	1,341,816	1,228,452	1,288,472	1,212,711	1,180,093
OMEI	79,563	69,237	40,241	39,221	44,837
*Other	343,843	332,534	271,224	228,052	230,381
Total Revenue	2,978,543	2,553,127	2,446,704	2,332,638	2,256,654
EXPENSES (ORGANIC)					
Materials					
Direct Material	764,379	437,366	591,547	578,738	612,974
Overhead Material	238,352	193,963	187,954	228,022	227,805
Salaries and Wages - Civilian					
Direct Labor	778,684	765,481	770,385	787,690	738,733
Production Overhead	493,427	457,454	445,624	461,898	437,280
G&A Overhead	113,300	111,385	115,546	128,191	113,970
Other Expenses	325,923	360,891	245,466	340,544	315,036
Total Expenses	2,714,065	2,326,540	2,356,522	2,525,083	2,445,798
Change in WIP	250,785	26,335	39,688	(24,928)	(62,676)
COST OF SALES	2,964,850	2,352,875	2,396,210	2,500,155	2,383,122
ORGANIC OPERATING RESULTS	13,693	200,252	50,494	(167,517)	(126,468)
SALES REVENUE (CONTRACT)					
Aircraft	436,771	457,231	357,095	406,088	416,458
Missiles	22,482	35,855	45,260	76,958	82,294
Engines	65,459	56,583	51,908	75,503	80,902
Exchangeables	490,528	584,675	601,299	647,716	665,138
OMEI	18,121	27,077	33,989	48,792	36,925
*Other	123,376	49,734	43,532	3,635	0
Total Revenue	1,156,737	1,211,155	1,133,083	1,258,692	1,281,717
EXPENSES (CONTRACT)					
Contractor Charges	1,010,741	1,018,813	968,458	979,929	989,408
Material Used	146,723	112,601	133,456	185,282	190,583
Other Costs	21,960	18,732	20,859	4,791	9,622
Change in WIP	(24,182)	39,143	(19,063)	37,335	21,848
Support Costs	0	0	14,883	13,433	18,640
TOTAL EXPENSES	1,155,242	1,189,289	1,118,593	1,220,770	1,230,101
CONTRACT OPERATING RESULTS	1,495	21,866	14,490	37,922	51,616
DMS, AFIF OPERATING RESULTS	15,188	222,118	64,984	(129,595)	(74,852)

*Other depicts local manufacture, base tenant and area support, storage/regeneration, and software.

Table 20. FY93 Distribution of Revenue and Expense
Contract and Organic



Revenue & Expenses: Total organic expenses increased by 23.78% (per DPSH, see Table 21 below) in FY93. The biggest increase was in material with the introduction of stock funding of depot level reparables adding to the depot maintenance bill. Overall, both total (organic & contract) revenue and expenses were up in FY93. Exchangeables continued to bring in the bulk of our total (organic & contract) revenue, although down about 4% from FY92. The aircraft production split of total (organic & contract) revenue increased by approximately 3.0% over FY92 levels. Engines remained stable from FY92.

Table 21. Organic Expenses per DPSH

	FY93	FY92	FY91	FY90	FY89
Total DPSH (000)	32,090	34,050	36,355	38,891	40,133
% Change	-5.76%	-6.34%	-6.52%	-3.09%	
Labor (\$/DPSH)	\$43.17	\$39.19	\$36.63	\$35.43	\$32.14
% Change	10.17%	6.99%	3.39%	10.22%	
Material (\$/DPSH)	\$31.25	\$18.54	\$21.44	\$20.74	\$20.95
% Change	68.53%	-13.53%	3.36%	-0.98%	
Other Expense (\$/DPSH)	\$10.16	\$10.60	\$6.75	\$8.76	\$7.85
% Change	-4.17%	56.98%	-22.89%	11.55%	
Total Expense (\$/DPSH)	\$84.58	\$68.33	\$64.82	\$64.93	\$60.94
% Change	23.78%	5.41%	-0.17%	6.54%	

The Command production level measured in DPAHs decreased 6.1% from FY92 and around 16.0% since FY89. This is the result of force structure reductions and the corresponding decrease in customer flying hours. Exchangeables continues to drop, 29% since FY89. Aircraft production was up for the first time since FY90. Our third largest workload, engines took the biggest hit dropping 15.0% from FY92 levels and a total of 32% since FY89.

Table 22. Organic Production Performance (FY89-93) (DPAH)

Workload Category	FY93 (000)	%CHG	FY92 (000)	%CHG	FY91 (000)	%CHG	FY90 (000)	%CHG	FY89 (000)
Aircraft	12,275	4.8%	11,717	-1.1%	11,844	-14.5%	13,854	3.6%	13,378
Missiles	816	-2.3%	835	10.9%	753	-15.3%	889	-20.7%	1,121
Engines	2,603	-15.0%	3,063	1.8%	3,008	-14.1%	3,503	-8.1%	3,810
OMEI	997	6.2%	939	22.7%	765	-11.4%	863	6.3%	812
Exchangeables	13,078	-14.5%	15,290	-7.8%	16,586	-8.8%	18,194	-1.4%	18,453
Software	2,898	5.9%	2,736	14.0%	2,400	6.4%	2,256	18.5%	1,904
Other**	2,541	-12.7%	2,909	34.1%	2,170	-7.0%	2,333	-7.3%	2,516
Total	35,208	-6.1%	37,489	-0.1%	37,526	-10.4%	41,892	-0.2%	41,994

** Other depicts local manufacture, base tenant and area support, and storage/regeneration.

Human and Industrial Resources FY93

Table 23. FY93 Organic Depot Maintenance Workyears

ACTIVITY	CIVILIAN	MILITARY	TOTAL
OC-ALC	5,884	88	5,972
OO-ALC	5,458	156	5,614
SA-ALC	6,622	100	6,722
SM-ALC	5,239	77	5,316
WR-ALC	6,148	62	6,210
AGMC	962	9	971
AMARC	521	0	521
Total	30,834	492	31,326

Table 24. Civilian Workyear and End Strength (FY89-93)

	FY93	FY92	FY91	FY90	FY89
Work Years	30,834	31,345	33,414	38,012	37,778
End Strengths	30,842	31,518	31,523	37,511	38,374

Our people are the most important asset at our maintenance facilities. During FY93, 31,326 civilian and military workyears were used to accomplish the maintenance mission (see Table 23). This represents a 1.5% decrease from FY92 levels. The maintenance work force possesses a variety of skills and talents. By using these skills and talents and working together, the maintenance people provide quality products and services to our customers. Our work force consists of many professions. Several examples of these professions are aircraft and engine mechanics, electronics, machinists, painters, sheet metal, welders, and many more. Planners, schedulers, quality assurance specialists, managerial personnel, and engineers provide support to the production work force.

Civilian Manpower: Since FY83, the Depot Maintenance Business Area has effectively managed without end strength or workyear controls. There are now many uncertainties in future programs due to decreasing levels of defense spending and customer funding which is causing a corresponding reduction in employment levels (Table 24).

ORG	QTY	ORG	QTY	ORG	QTY	ORG	QTY
HQ AFMC/CC	2	HQ AFMC/CE	2	SM-ALC/LA	15	406 CLSS/CC	2
HQ AFMC/CV	1	HQ AFMC/PK	5	SM-ALC/LH	15	652 CLSS/CC	2
HQ AFMC/CCR	1	HQ AFMC/ST	2	SM-ALC/EM	2		
HQ AFMC/CCE	1	HQ AFMC/IA	2	-----MCCLELLAN AFB, CA 95652-----			
HQ AFMC/CCA	1	HQ AFMC/SE	2	WR-ALC/CC	2	WR-ALC/LU	10
HQ AFMC/CCW	1	HQ AFMC/SG	2	WR-ALC/CD	2	WR-ALC/LV	10
HQ AFMC/CVE	1	HQ AFMC/XP	5	WR-ALC/FM	20	WR-ALC/LY	15
HQ AFMC/CCV	1	HQ AFMC/XPA	2	WR-ALC/TQ	2	WR-ALC/CN	2
HQ AFMC/CCG	1	HQ AFMC/DR	5	WR-ALC/LB	10	WR-ALC/PA	2
HQ AFMC/QI	2	401 CLSS/CC	2	WR-ALC/LF	10	WR-ALC/PK	2
HQ AFMC/DP	2	645 ABW/CC	2	WR-ALC/LJ	10	402 CLSS/CC	2
HQ AFMC/EN	2	AFAA/QLM	2	WR-ALC/LK	10	653 CLSS/CC	2
HQ AFMC/FM	2	645 MSS/CC	2	WR-ALC/LN	15	WR-ALC/QL	2
HQ AFMC/FMR	2	HQ AFMC/FMC	2	HQ AFRES/LG	2	WR-ALC/TI	15
HQ AFMC/FMM	5	ASC/CC	2	-----ROBINS AFB, GA 31098-----			
HQ AFMC/HO	1	ASC/AL	2	AGMC/CC	2	AGMC/CA	2
HQ AFMC/IG	2	HQ AFMC/SV	2	AGMC/CE	2	AGMC/SC	2
HQ AFMC/CI	5	JLSC/CC	5	AGMC/FM	10	AGMC/MA	15
HQ AFMC/IN	1	AFSAC/CC	2	AGMC/ML	5	AGMC/LG	1
AFTT/LSR	2	MSC/CC	2	AGMC/PK	2	AGMC/PA	2
WL/CC	5	HQ AFMC/PA	10	-----NEWARK AFB, OH 43057-----			
HQ AFMC/JA	2	JLSC/DM	2	AMARC/CC	2	AMARC/CA	2
HQ AFMC/LG	5	HQ AFMC/LGI	10	AMARC/FM	2	AMARC/TI	3
HQ AFMC/LGM	10	HQ AFMC/LGT	10	AMARC/LA	2	AMARC/LG	10
HQ AFMC/LGP	30	HQ AFMC/LGS	10	AMARC/QP	2		
HQ AFMC/LGR	5	HQ AFMC/DO	2	-----DAVIS-MONTHAN AFB, AZ 85707-----			
-----WRIGHT PATTERSON AFB, OH 45433-----							
OC-ALC/CC	2	OC-ALC/TQ	2	AL/CC	2	PL/CC	2
OC-ALC/CD	2	OC-ALC/LA	15	BROOKS AFB, TX 78235		KIRTLAND AFB, NM 87117	
OC-ALC/FM	20	OC-ALC/LP	15	RI/CC	2	HQ AFOTEC/CC	2
OC-ALC/TI	15	OC-ALC/LI	15	GRIFFIS AFB, NY 13441		KIRTLAND AFB, NM 87117	
403 CLSS/CC	2	OC-ALC/PA	2	-----			
654 CLSS/CC	2			HSC/CC	2	ESC/CC	2
-----TINKER AFB, OK 73145-----							
OO-ALC/CC	2	OO-ALC/LM	15	BROOKS AFB, TX 78235		HANSCOM AFB, MA 01731	
(X)-ALC/CD	2	OO-ALC/PK	2	SMC/CC	2		
OO-ALC/FM	25	OO-ALC/TI	15	LOS ANGELES AFB, CA 90009			
OO-ALC/LA	15	405 CLSS/CC	2	-----			
OO-ALC/LI	15	649 CLSS/CC	2	HQ AFDTG/CC	2	AFFTC/CC	2
OO-ALC/QI	2	OO-ALC/PA	2	EGLIN, AFB, FL 32542		EDWARDS AFB, CA 93524	
OO-ALC/FMP	2	OO-ALC/FMP	2	AEDC/CC	2	AFOSR/CC	2
-----HILL AFB, UT 84056-----							
SA-ALC/CC	2	SA-ALC/LP	15	ARNOLD AFB, TN 37389		BOLLING AFB, D.C. 20332	
SA-ALC/CE	2	SA-ALC/PK	2	-----			
SA-ALC/FM	20	SA-ALC/SW	15	HQ ACC/LG	2		
SA-ALC/CN	2	SA-ALC/TI	15	-----LANGLEY AFB, VA 23665-----			
SA-ALC/LA	15	404 CLSS/CC	2	USAF/LGS	2	SAF/FMB	2
SA-ALC/LD	15	651 CLSS/CC	2	USAF/LG	2	USAF/LGMM	2
SA-ALC/TQ	2	SA-ALC/SF	15	-----WASHINGTON, DC 20330-----			
SA-ALC/PA	2			DUSD(L)	2	OASD(P&L)	2
-----KELLY AFB, TX 78241-----							
SM-ALC/CC	2	SM-ALC/LI	25	-----WASHINGTON, DC 20301-----			
SM-ALC/CD	2	SM-ALC/QI	2				
SM-ALC/FM	25	SM-ALC/QL	2				
SM-ALC/CN	2	SM-ALC/PK	2				
SM-ALC/PA	2	SM-ALC/TI	15				

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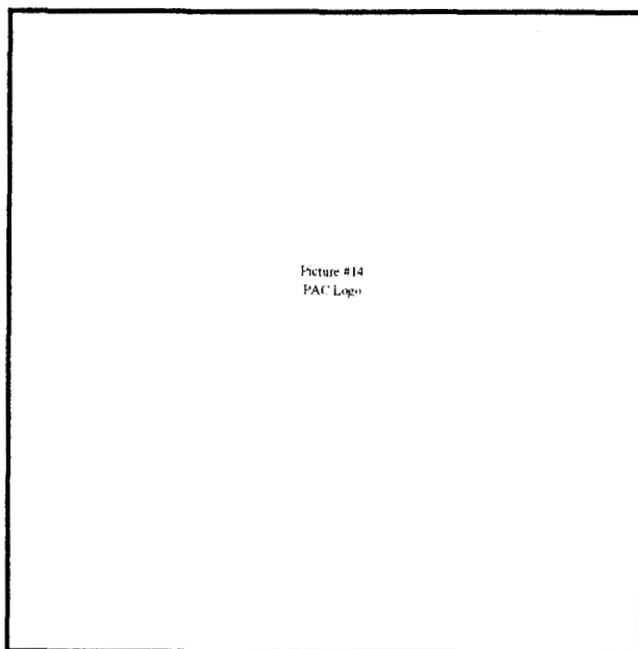
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CURRENT POSTURE

MAJOR ORGANIC MAINTENANCE DEPOTS

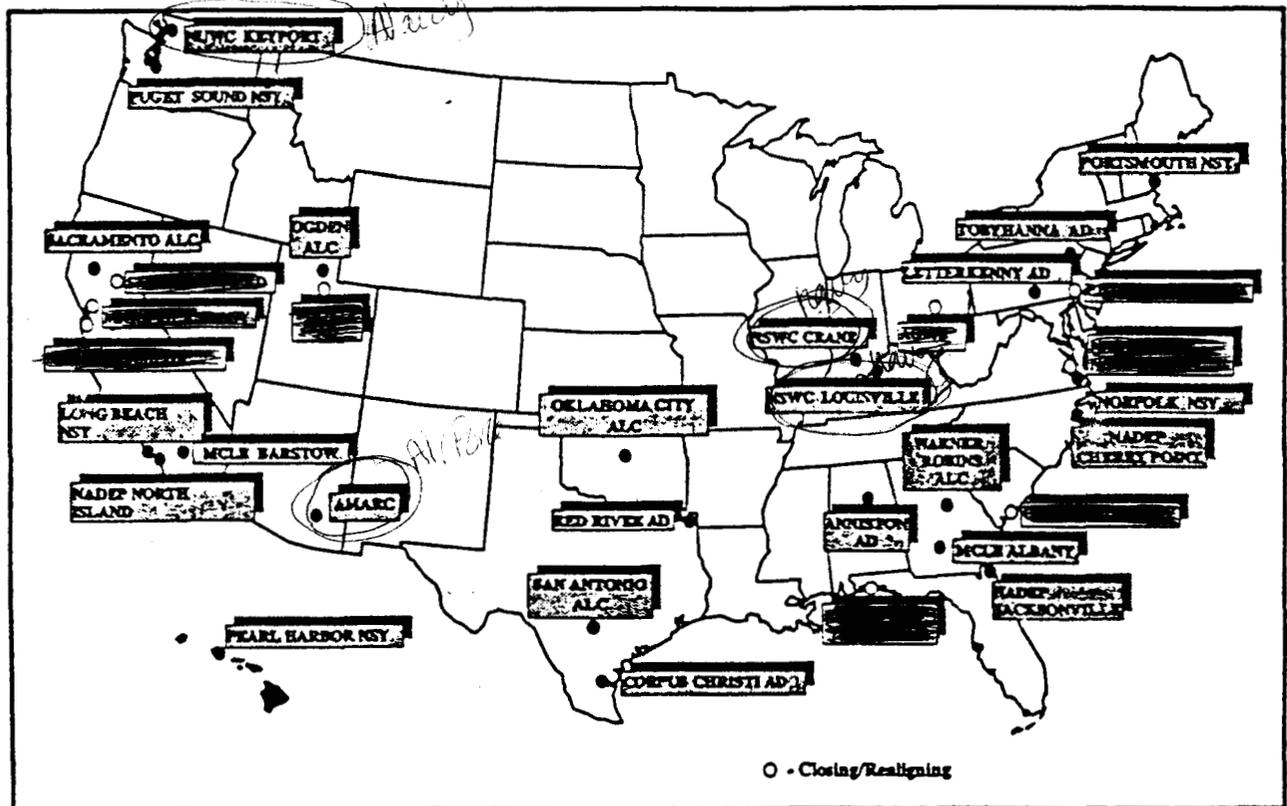


Figure 1-1. Major DoD Depot Maintenance Activities
(Employing More Than 400 Personnel)

There are currently 33 major maintenance depots under Service management. Figure 1-1 shows the geographic locations of each depot and indicates those that have been identified for realignment or closure. Two of the 33, Sacramento Army Depot and Philadelphia Naval Shipyard, are in the process of closing. Of the remaining 31 depot facilities, 7 are included in the President's final recommendation to Congress for closures and realignments as part of the BRAC 93 process. It should be noted that there are additional activities performing depot maintenance in the Services and in the Defense Logistics Agency. These activities are relatively small in terms of level of effort and often combine depot level maintenance with other maintenance and support activities.

Table 1-1 below indicates the impact, by Service, of actual/planned/recommended closings resulting from the BRAC Commissions of 1988, 1991 and 1993 as well as management actions taken under the CBP. The SecDef also recommended to the BRAC 93 Commission the closing of Letterkenny Army Depot, but the Commission did not concur with the recommendation. Additionally, the Air Force identified Sacramento ALC (SM-ALC) as a closure candidate for BRAC 93, but SecDef did not include SM-ALC in his final consolidated list of candidates.

ALC's

- Sacramento (McKellan)
- Ogden (Hill)
- Oklahoma City (Tinker)
- Robbins
- San Antonio (Kelly)

NAOEP's

- North Island
- Cherry Point
- Jacksonville

Army Depots

- Johanna
- Letter Kenny
- Amis Jan
- Red River
- Corpus Christi

Marine Corps

- Albany
- Barslow

Shipyards

- Portsmouth, NH
- Norfolk, Va
- Puget Sound, Wash
- Long Beach, Cal
- Pearl Harbor, HI

Ord

- NSWC Louisville, Ky
- NSWC Crane, Ar
- NSWC Kopart, Wash

Other

- AMARC

Depot Maintenance Missions Assigned to the Air Logistics Centers

Ogden ALC, Hill Air Force Base, Utah

The Ogden ALC repairs and modifies the F-4, F-16, and C-130 aircraft (a recent addition). The Center also maintains Air Force missile systems and components, including the Peacekeeper, Minuteman, Maverick, and Sidewinder. Ogden is the technology repair center¹ (TRC) for weapons, air munitions, landing gears, reconnaissance/photographic equipment, and training and simulation equipment.

Oklahoma City ALC, Tinker Air Force Base, Oklahoma

Oklahoma City ALC is the source of repair for the B-1B, B-52, C-135, and E-3 aircraft. The Center has also been assigned repair responsibility for the B-2 Stealth bomber. It is also one of the two Centers (San Antonio is the other) that repairs and overhauls jet engines. Oklahoma City is the TRC for automatic flight controls, airframe and engine-related components, engine instruments, and oxygen components.

Sacramento ALC, McClellan Air Force Base, California

Sacramento ALC is the designated source of repair for the F-111, A-7, and A-10 aircraft. The Center recently began F-15 modification work and has been assigned repair responsibility for the Advanced Tactical Fighter. Sacramento is the TRC for electrical components, flight control instruments, tactical shelters, and ground communications-electronics equipment.

San Antonio ALC, Kelly Air Force Base, Texas

The San Antonio ALC maintains and repairs the B-52 and C-5 aircraft. The Center has been designated the source of repair for the C-17 aircraft. The Center also repairs and overhauls a large number of engines and engine modules. The Center is the TRC for electronic aerospace ground equipment, electro-mechanical support equipment, nuclear components, and automatic test equipment.

Warner Robins ALC, Robins Air Force Base, Georgia

Warner Robins ALC repairs and modifies the F-15, C-141, and C-130 aircraft. The Center is the TRC for life support systems, propellers, and airborne electronics. The airborne electronics work load includes more than 300 avionics systems and almost 10,000 parts and components.

¹Under the technology repair center concept, selected homogeneous maintenance work loads are assigned to a single center rather than maintaining capabilities at multiple locations.

CURRENT POSTURE

MAJOR ORGANIC MAINTENANCE DEPOTS

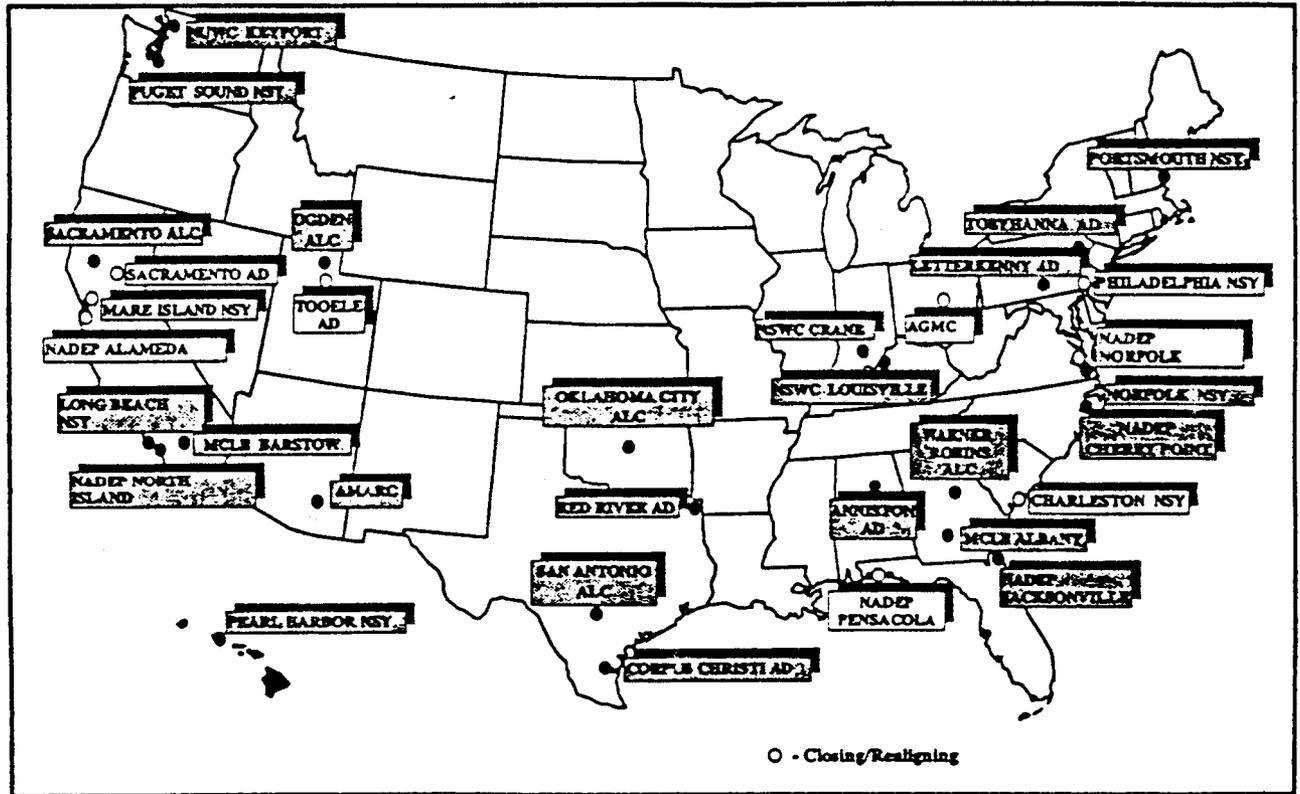


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3 open

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2

1,000 export orders.

The seven competitors and

marked funding for JPATS to meet the Air Force's schedule.

costs range from necessary refurbishment of the tanks to the purchase of fuel trucks, ammunition

McHale argues that if the tank transfer is approved in confer-

with objectivity, and casts great doubt on their credibility."

DoD Lab System May Be Focus of Base Closure Effort in '95

LABS, From Page 4

and industry officials said. First, they develop and preserve technologies that are critical to national security, in many instances where industry does not have the resources or interest.

In addition, the labs help maintain a technological expertise that make Pentagon officials smart buyers of defense weapons and equipment.

These missions have not changed, but many Pentagon and industry officials say the labs must be reduced and restructured to reflect the Pentagon's post-Cold War needs.

The report from the Defense Science Board, for example, recommended that the Pentagon double its planned cuts of lab personnel from 4 percent to 8 percent annually.

The personnel cuts would allow the labs to shift spending to industry, and would have the added benefit of helping maintain the defense technology base within the private sector.

One of the chief problems facing the labs is that the Defense Department no longer is the driving force behind all militarily critical technologies. In areas such as microelectronics, for example, the commercial sector has far outpaced the defense labs and will continue to do so.

As a result of the Defense Science Board report, Jones has Pentagon-industry teams assessing the capabilities of the defense labs to determine how much work could be shifted to industry, academia or other government labs.

Industry officials also said Pentagon officials like Jones should oversee this process to coordinate the reductions among the individual service labs and ensure that critical elements of defense research are not eliminated.

"I would not be happy if [lab cuts] were done on a service-by-service basis," Phil Selwyn, former head of the Office of Naval Technology and now vice president of Arete Associates, Arlington, Va., said July 27. "I think it is absolutely necessary that DoD manage this process. There is too much overlap in missions that it can only be dealt with in a cohesive manner."

The Pentagon's plan to shift work outside the labs

could be disrupted by cuts to university funding in the 1995 defense appropriations bill. House lawmakers in June cut in half the Pentagon's request for \$1.8 billion for university research.

However, Congress is expected to restore this funding in the final Senate and House conference bill.

The Institute for Defense Analyses, Arlington, Va., a government-funded research institution, is coordinating the Pentagon's study and will deliver its report to Jones in August.

This report, in turn, will form the basis of the Pentagon's recommendations to President Bill Clinton's review of all Defense Department, Energy Department and NASA laboratories.

The effort, which is being directed by the White House National Science and Technology Council, is re-examining the post-Cold War functions of these labs. The annual budgets of these three lab systems is estimated at \$18 billion.

The National Science and Technology Council is slated to deliver its report to Clinton April 15.

and the sale of a substantial business unit.

L BUSINESS

Resources and its Power subsidiary refunding to customers \$8 million in alleged damages related to a railroad leasing contract. The two also said they are to initiate talks with CSX to try to lower rates the railroad Virginia Power for hauling its power plants.

including Matra cut its stake in Orbital of Sterling to 8.53 by selling 654,000 shares Dec. 12 and Jan. 19 at \$16.75 to \$19.30 a share.

aid its fourth-quarter net loss 5 percent, to \$62 million. Revenue increased 6.8 percent to \$853 million. Profit from operations rose 28 percent, to \$37 million.

News services and staff reports

Has Cancer

prognosis. Bank Managing Director Robert Stern, who had been ousted at the end of January, was asked to stay on for another month as acting CEO. Stern, 68, succeeded Barabara as head of the bank. He had worked for 40 years at J.P. Morgan & Co., where he is chairman. The bank had undergone quadruple bypass surgery in the first half of 1993.

like Means Rising Starts

Bankers Association of America. Those rates climbed from 7.5 percent in late January 1994 to 9.1 percent last week, "they will flatten out again in the 9 to 9.4 percent range," he said. "Primary officials are most concerned about the rise in ARM rates, noting that it is used to finance about half of all new mortgages. With lower interest rates, the use of ARMs is expected to increase, particularly by first-time

Panel Urges Weapons Labs Be Transferred

2 Feb 95 m

By Daniel Sutherland and John Mintz
Washington Post Staff Writers

An independent federal task force yesterday recommended that the Energy Department turn over the nation's nuclear weapons-producing laboratories to a nonprofit corporation so they can be run like businesses.

The panel, headed by former Motorola Corp. chairman Robert W. Galvin, did not recommend dismantling the labs or the Energy Department, although some members of the Republican majority in Congress have expressed that desire.

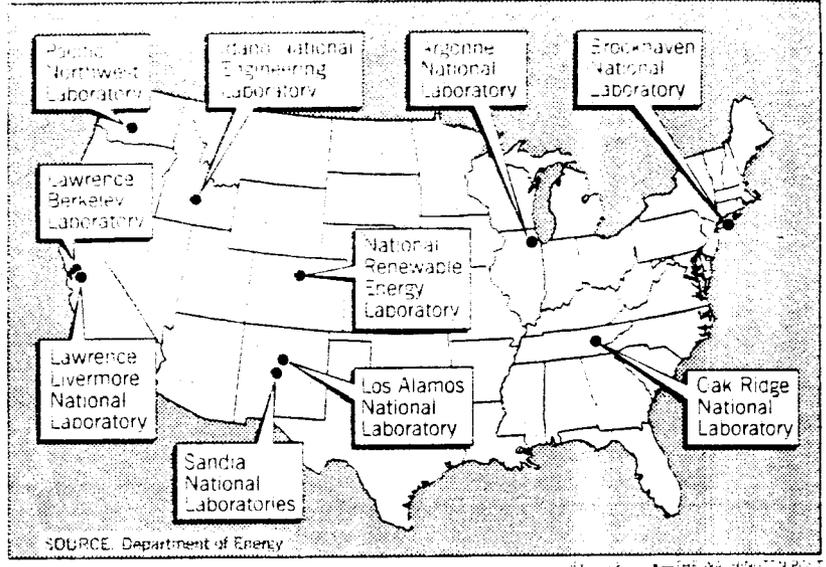
The task force said, however, that the labs are beset by increasing overhead costs, low morale and "gross inefficiencies" from excessive oversight by Congress and the Energy Department.

Energy Secretary Hazel O'Leary named the Galvin task force a year ago to advise the department on what to do with its weapons labs—Los Alamos, Lawrence Livermore and Sandia National Laboratory—and its seven other major labs, now that their work has tailed off with the Cold War's end.

The nation's nuclear stockpile has dropped to 3,500 weapons from 20,000 weapons. No new weapons are being manufactured.

The 10 labs examined by the panel employ about 50,000 people, with a budget of about \$6 billion a year. Most are managed by private corporations or universities, but they are funded by the federal government. The Galvin panel's main organizational recommendation was to "de-federalize" the labs—to make them "as close to corporatized as is imaginable."

THE LABS BEING STUDIED



SOURCE: Department of Energy

It suggested creating a nonprofit company to oversee the labs, with a board of trustees the president would select from the private sector.

At a news briefing on the report, Galvin went beyond the panel's criticism of excessive oversight by Congress and the Energy Department and urged that Congress and the Energy Department end their oversight.

"It's unrealistic," said former South Carolina Democratic congressman Butler Derrick, a member of an Energy Department advisory board. "You're dreaming if you think Congress is going to give you \$6 billion, cut you loose and say, 'Do what you want.'"

The Clinton administration has been trying to find new commercial work for the labs, a process called "technology transfer." The panel criticized these efforts as "unfocused."

"The laboratories are not now, nor will they become, cornucopias of relevant technology for a broad range of industries," the group said in its report.

"There are relatively few instances in which the laboratories have [unique] technology that is vital to industry."

O'Leary said yesterday she embraced and intended to implement "a great majority" of what the Galvin panel recommended.

Energy officials have said they hoped the panel would help the department take the politically difficult step of concentrating nuclear weapons work at one lab.

The work now is being done at Los Alamos in New Mexico and Lawrence Livermore near San Francisco.

The task force recommended transferring weapons work from Livermore to Los Alamos, but the panel rejected proposals to place the weapons labs under the Defense Department.

The panel reaffirmed the importance of the labs, saying that their research role is "part of an essential, fundamental cornerstone for continuing leadership by the United States."

The labs conduct long-term, high-risk research often beyond the financial reach of industry and universities.

The task force said the labs should focus more on the tasks of nuclear nonproliferation and the clean-up of radioactive and hazardous wastes.

Benefits of Banks' Resurgence May Spread to I

TRENDLINES, From D9

fund," FDIC Chairman Ricki Tigert Helfer said in a statement. "In terms of earnings, capital and problem assets, banks have never been in better shape."

Analysts and regulators attribute the recovery of the banking industry to a number of factors. Interest rates that remained low until last year made it cheap for banks to attract funds, overall growth in the economy has boosted loan demand and loan quality, and banks have tried to diversify their sources of income.

The difference between the interest rate banks have to pay to depositors and the rate they

estate. The banks were stuck with bad loans after developers, faced with demand for office space that did not meet their expectations, could not repay them.

"Prior to 1990, banking violated the fundamental rule of modern corporate finance, which is that if you are in more than one business, your prospects for being significantly harmed by any particular [line of business] are minimized," said Karen Shaw, president of ISD/Shaw Inc., a consulting firm that tracks the banking industry.

Bankers say they have learned from the real estate collapse. The industry has diversified its sources of income, earning money from fees for

The FDIC's p for public comm between 4 cents deposits, with m lower figure. Ins to the insurance giving weaker in improve their ba pay between 23

The bank insu contain funds eq assets before pr that goal someti

While the dro banks, it poses a

Senators Urge Linking Bases to Block Closures

■ **Military:** The 'Southwest Complex' would include Edwards Air Force Base and other state weapons-testing sites. East Coast lawmakers criticize the proposal.

By JACK CHEEVERS, TIMES STAFF WRITER *MT 8/24/94*

California's U.S. senators have urged the Pentagon to link Edwards Air Force Base and several other high-tech weapons-testing installations in a "Southwest Complex" that could help shield bases in the southwestern United States from defense cuts next year.

In a letter to Defense Secretary William J. Perry, Sens. Dianne Feinstein and Barbara Boxer said the Southwest Complex would save money, boost efficiency and promote interservice cooperation while "preserving and expanding the world-class military capabilities that currently exist in California, Utah, Arizona and other nearby states."

But the California senators face opposition from lawmakers representing Florida, Maryland and New York, where jobs at local bases and defense firms could be lost if Feinstein and Boxer prevail.

Other California bases that would be part of the Southwest Complex are the Point Mugu Naval Air weapons station in Ventura County and the China Lake Naval Air Weapons Station, Ft. Irwin Military Reservation and Twentynine Palms Marine Corps Base in San Bernardino County.

Bases in the Southwest have long been used to evaluate aircraft, missiles and other airborne weapons. Under the Southwest Complex plan, testing from other bases across the country would be consolidated in the West.

The military has made some effort to consolidate test and evaluation operations in recent years, and the services have engaged in some joint weapons tests. Navy cruise missiles launched from the Pacific Ocean are monitored en route to targets on land by microwave relays at Vandenberg Air Force Base near Lompoc.

Feinstein and Boxer's proposal for a Southwest Complex comes as members of Congress scramble to find ways to protect bases in their states from a new round of cuts expected to be recommended by the federal Base Realignment and Closures Commission in 1995.

Base closures and cutbacks from 1988 to 1993 eliminated about 200,000 military and civilian jobs in California, according to a recent state report. But military installations that perform weapons testing and research have been largely spared. The base closure commission is expected to take a hard look at such posts next year.

Feinstein and Boxer said bases that would make up the Southwest Complex have major advantages because they are located in areas that are largely free of residential encroachment and have access to vast air, sea and land test ranges. Edwards, located 100 miles northeast of Downtown Los Angeles, covers more than 300,000 acres on the western edge of the Mojave Desert.

Also, the bases are relatively close to one another as well as to defense contractors. The lawmakers said the Southwest Complex would save money, but a Feinstein spokesman said he did not know how much.

Aircraft and air-weapons testing is performed at bases in a number of states, and Feinstein and Boxer did not specify any posts outside California, Utah and Arizona that they believe should be cut to provide work for the Southwest Complex. But forming Southwestern bases into the nation's premier air-combat test complex would put pressure on the military to cut back or close bases elsewhere that perform similar work, and the Californians' proposal has been sharply criticized by East Coast lawmakers.

U.S. senators from Florida and New York angrily rebuked California lawmakers recently for urging Perry to ignore a study that the East Coast politicians said recommended closure of the air-combat test range at China Lake Naval Air Weapons Station, located near Ridgecrest.

Feinstein, Boxer and nine U.S. House members from California had urged Perry in a May 27 letter to overlook the study because it "may fail to accurately portray the costs and capabilities of California bases." The lawmakers also complained that previous defense cuts have hurt the state badly.

In an Aug. 11 letter, Florida Sens. Connie Mack and Bob Graham joined New York Sens. Daniel P. Moynihan and Alfonse D'Amato in warning Perry that the Californians were trying to inject politics into the base closure process.

The East Coast senators said the study concluded that taxpayers would save \$94 million over five years if the China Lake range is closed and another air-combat range over the Gulf of Mexico operated by Florida's Eglin Air Force Base is kept open.

"The proponents of a [Southwest Complex] would have you discard the magnificent capabilities of [Eglin] and attempt to duplicate them in the Western states at enormous and totally unnecessary cost to the taxpayer," the East Coast lawmakers said.

Jack Connell, who heads a private Ridgecrest-based group lobbying for the Southwest Complex, said both Eglin and Patuxent River Naval Air Warfare Center in Maryland perform test activities that could be done at Edwards, the Air Force's top flight-test center. Patuxent River is home to the Navy's main flight-test facility.

Connell said the Western bases have clear advantages because they have excellent flying weather, huge open spaces for aircraft and missile testing and, with relatively few homes nearby, plenty of room to expand.

"At Pax River, they have . . . home sites right up to the edge of the military reservation. You want to drop a bomb at Pax River and they just have an anchored target in the bay," said Connell, an ex-Navy test pilot.

Under Feinstein and Boxer's proposal, all armed services would be allowed to conduct flight tests at Edwards, an Air Force domain since 1946. The lawmakers also want to open Edwards' famed test pilot school—which has supplied dozens of skilled fliers for the U.S. astronaut corps—to other military branches.

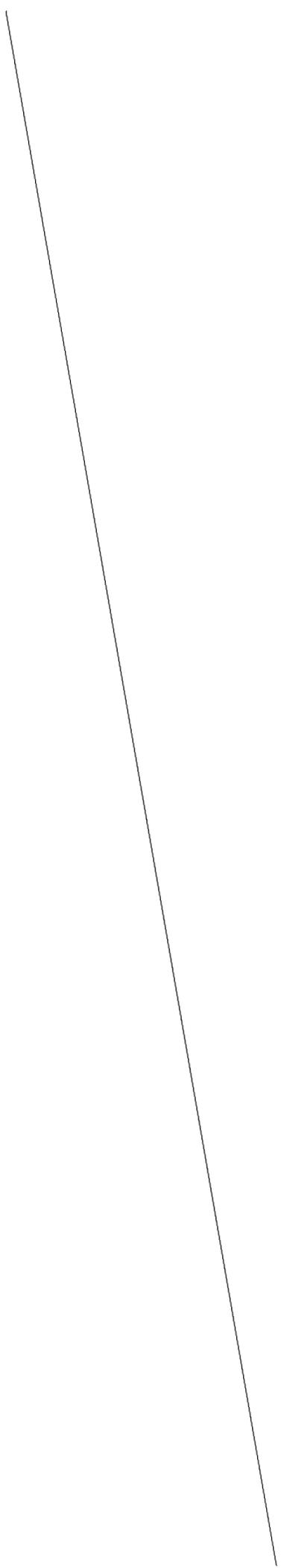
Charles (Pete) Adolph, a former top Pentagon test and evaluation official, said he favors the Southwest Complex because it would allow the Armed Forces to conduct more joint training exercises over a wide variety of terrain.

He said he believes that high-performance aircraft testing at Patuxent River should be moved to Edwards or China Lake, although the Navy should continue to test Navy aircraft. He said the Patuxent River test pilot school should be transferred to Edwards, China Lake or the National Test Pilot School in Mojave.

"The Navy and the Air Force have agreed for years that they can get by with one test pilot school," said Adolph. "But they've never agreed whether it should be at Pax River or Edwards."

With members of Congress jockeying to maintain bases in their districts, politics will play a major role in next year's base closure process, and proponents of the Southwest Complex acknowledge that East Coast lawmakers will pull out all the stops to thwart them.

"They're going to scream bloody murder," Connell said.



ANALYST NOTES
BRAC COMMISSION
BRAC 93 POTENTIAL ADD SCENARIOS
DEPOT MAINTENANCE

INTRODUCTION: On April 26, 1995, the BRAC Commission directed the Army to examine two scenarios that impact upon four Army maintenance depots. The depots impacted were Anniston with a directed realignment into Red River and the closure of Tobyhanna with the ground communications and electronics workload being transferred to Letterkenny. Visits were coordinated with one team visiting Red River for a meeting with Anniston (27-29 April) and a second meeting at Letterkenny with Tobyhanna (30 April-2 May). With a very restricted period to formulate data for a scenario, the results are to be considered approximate to frame these proposals for the BRAC Commission's Add hearing.

SCOPE: The scope of the analysis relates to the realignment of the Army's heavy combat vehicle maintenance workload into the Army's light combat vehicle depot facility and the closure of the Army's ground communication and electronics depot and consolidating that workload into the existing workloads at Letterkenny (Tactical Missile and artillery).

SCENARIO:

a) Realign Anniston Army Depot by transferring the heavy combat vehicle maintenance workload to Red River Army Depot. Transfer small arms repair workload and mission to Red River. Transfer missile maintenance workload to Letterkenny Army Depot. Enclave the ammunition storage mission and the chemical demil missions in place at Anniston.

b) Close Tobyhanna Army Depot and move the ground communications and electronics maintenance workload to Letterkenny Army Depot.

METHODOLOGY: The methodology used by the Army in its evaluation was to utilize the available existing data gathered throughout the BRAC 95 process and certified by the Army Materiel Command. The only deviation from the data was the usage of the latest Army Stationing and Installation Plan dated 18 November 1994. Data gathered from the on-site meetings at Red River and Letterkenny on personnel, facilities, equipment transfer, and workloads was utilized to determine estimated costs of the respective scenarios. Following review of the data by the Army Materiel Command and the Army TABS office, a COBRA was run for each scenario.

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

Starting Year : 1996
 Final Year : 2001
 ROI Year : 2005 (4 Years)

NPV in 2015(\$K): -233,769
 1-Time Cost(\$K): 128,421

Net Costs (\$K) Constant Dollars	1996						Total	Beyond
	1996	1997	1998	1999	2000	2001		
MilCon	3,121	0	16,825	17,119	0	0	37,065	0
Person	0	133	37	1,423	-4,955	-20,750	-24,111	-29,423
Overhd	1,950	1,698	1,193	5,492	4,681	-2,387	12,628	-3,774
Moving	0	1,116	45,718	10,739	13,793	2,938	74,304	0
Missio	0	0	0	0	0	0	0	0
Other	0	39	13	445	647	219	1,364	0
TOTAL	5,071	2,987	63,787	35,218	14,166	-19,980	101,250	-33,198

	1996	1997	1998	1999	2000	2001	Total
POSITIONS ELIMINATED							
Off	0	0	0	0	0	0	0
Enl	0	0	0	0	0	1	1
Civ	0	0	0	0	300	339	639
TOT	0	0	0	0	300	340	640

	1996	1997	1998	1999	2000	2001	Total
POSITIONS REALIGNED							
Off	0	0	0	0	0	0	0
Enl	0	0	0	0	0	0	0
Stu	0	0	0	0	0	0	0
Civ	0	61	21	688	700	0	1,470
TOT	0	61	21	688	700	0	1,470

Summary:

REALIGN ANNISTON ARMY DEPOT BY TRANSFERRING THE HEAVY COMBAT VEHICLE MAINTENANCE WORKLOAD TO RED RIVER ARMY DEPOT, TRANSFER SMALL ARMS REPAIR WORKLOAD AND MISSION TO RED RIVER, TRANSFER MISSILE MAINTENANCE WORKLOAD TO LETTERKENNY ARMY DEPOT, ENCLAVE AMMUNITION STORAGE AND CHEMICAL DEMIL MISSION AT ANNISTON.

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

Costs (\$K) Constant Dollars

	1996	1997	1998	1999	2000	2001	Total	Beyond
MilCon	3,121	0	16,825	17,119	0	0	37,065	0
Person	0	133	37	1,423	1,944	861	4,400	0
Overhd	1,950	1,721	1,459	6,109	9,666	7,985	28,890	6,736
Moving	0	1,116	45,718	10,739	13,793	2,938	74,304	0
Missio	0	0	0	0	0	0	0	0
Other	0	39	13	445	647	219	1,364	0
TOTAL	5,071	3,011	64,052	35,835	26,050	12,003	146,023	6,736

Savings (\$K) Constant Dollars

	1996	1997	1998	1999	2000	2001	Total	Beyond
MilCon	0	0	0	0	0	0	0	0
Person	0	0	0	0	6,900	21,611	28,511	29,423
Overhd	0	24	265	616	4,984	10,372	16,262	10,510
Moving	0	0	0	0	0	0	0	0
Missio	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
TOTAL	0	24	265	616	11,884	31,983	44,773	39,934

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

Year	Cost(\$)	Adjusted Cost(\$)	NPV(\$)
1996	5,071,597	5,003,269	5,003,269
1997	2,986,945	2,867,837	7,871,107
1998	63,787,070	59,604,366	67,475,473
1999	35,218,210	32,028,078	99,503,551
2000	14,166,324	12,538,308	112,041,859
2001	-19,980,062	-17,210,629	94,831,229
2002	-33,197,871	-27,830,970	67,000,259
2003	-33,197,871	-27,086,102	39,914,157
2004	-33,197,871	-26,361,170	13,552,988
2005	-33,197,871	-25,655,640	-12,102,652
2006	-33,197,871	-24,968,992	-37,071,644
2007	-33,197,871	-24,300,722	-61,372,367
2008	-33,197,871	-23,650,338	-85,022,705
2009	-33,197,871	-23,017,361	-108,040,066
2010	-33,197,871	-22,401,324	-130,441,390
2011	-33,197,871	-21,801,775	-152,243,166
2012	-33,197,871	-21,218,273	-173,461,439
2013	-33,197,871	-20,650,387	-194,111,827
2014	-33,197,871	-20,097,701	-214,209,527
2015	-33,197,871	-19,559,806	-233,769,333

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

Base: ANNISTON ARMY DEPOT, AL
 (All values in Dollars)

Category	Cost	Sub-Total
-----	----	-----
Construction		
Military Construction	0	
Family Housing Construction	0	
Information Management Account	0	
Land Purchases	0	
Total - Construction		0
Personnel		
Civilian RIF	2,511,491	
Civilian Early Retirement	873,502	
Civilian New Hires	0	
Eliminated Military PCS	4,381	
Unemployment	438,480	
Total - Personnel		3,827,854
Overhead		
Program Planning Support	6,413,090	
Mothball / Shutdown	4,875,000	
Total - Overhead		11,288,090
Moving		
Civilian Moving	23,206,037	
Civilian PPS	5,529,600	
Military Moving	0	
Freight	251,059	
One-Time Moving Costs	45,317,000	
Total - Moving		74,303,696
Other		
HAP / RSE	1,364,136	
Environmental Mitigation Costs	0	
One-Time Unique Costs	0	
Total - Other		1,364,136

Total One-Time Costs		90,783,776

One-Time Savings		
Military Construction Cost Avoidances	0	
Family Housing Cost Avoidances	0	
Military Moving	0	
Land Sales	0	
One-Time Moving Savings	0	
Environmental Mitigation Savings	0	
One-Time Unique Savings	0	

Total One-Time Savings		0

Total Net One-Time Costs		90,783,776

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

Base: RED RIVER ARMY DEPOT, TX
 (All values in Dollars)

Category	Cost	Sub-Total
-----	----	-----
Construction		
Military Construction	34,333,150	
Family Housing Construction	0	
Information Management Account	2,732,208	
Land Purchases	0	
Total - Construction		37,065,357
Personnel		
Civilian RIF	0	
Civilian Early Retirement	0	
Civilian New Hires	540,083	
Eliminated Military PCS	0	
Unemployment	0	
Total - Personnel		540,083
Overhead		
Program Planning Support	0	
Mothball / Shutdown	0	
Total - Overhead		0
Moving		
Civilian Moving	0	
Civilian PPS	0	
Military Moving	0	
Freight	0	
One-Time Moving Costs	0	
Total - Moving		0
Other		
HAP / RSE	0	
Environmental Mitigation Costs	0	
One-Time Unique Costs	0	
Total - Other		0

Total One-Time Costs		37,605,440

One-Time Savings		
Military Construction Cost Avoidances	0	
Family Housing Cost Avoidances	0	
Military Moving	0	
Land Sales	0	
One-Time Moving Savings	0	
Environmental Mitigation Savings	0	
One-Time Unique Savings	0	

Total One-Time Savings		0

Total Net One-Time Costs		37,605,440

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

Base: LETTERKENNY ARMY DEP, PA
 (All values in Dollars)

Category	Cost	Sub-Total
Construction		
Military Construction	0	
Family Housing Construction	0	
Information Management Account	0	
Land Purchases	0	
Total - Construction		0
Personnel		
Civilian RIF	0	
Civilian Early Retirement	0	
Civilian New Hires	0	
Eliminated Military PCS	0	
Unemployment	0	
Total - Personnel		0
Overhead		
Program Planning Support	0	
Mothball / Shutdown	0	
Total - Overhead		0
Moving		
Civilian Moving	0	
Civilian PPS	0	
Military Moving	0	
Freight	0	
One-Time Moving Costs	0	
Total - Moving		0
Other		
HAP / RSE	0	
Environmental Mitigation Costs	0	
One-Time Unique Costs	0	
Total - Other		0
Total One-Time Costs		
		0
One-Time Savings		
Military Construction Cost Avoidances	0	
Family housing Cost Avoidances	0	
Military Moving	0	
Land Sales	0	
One-Time Moving Savings	0	
Environmental Mitigation Savings	0	
One-Time Unique Savings	0	
		0
Total One-Time Savings		
		0
Total Net One-Time Costs		
		0

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

Base: BASE X, US
 (All values in Dollars)

Category	Cost	Sub-Total
Construction		
Military Construction	0	
Family Housing Construction	0	
Information Management Account	0	
Land Purchases	0	
Total - Construction		0
Personnel		
Civilian RIF	0	
Civilian Early Retirement	0	
Civilian New Hires	32,161	
Eliminated Military PCS	0	
Unemployment	0	
Total - Personnel		32,161
Overhead		
Program Planning Support	0	
Mothball / Shutdown	0	
Total - Overhead		0
Moving		
Civilian Moving	0	
Civilian PPS	0	
Military Moving	0	
Freight	0	
One-Time Moving Costs	0	
Total - Moving		0
Other		
HAP / RSE	0	
Environmental Mitigation Costs	0	
One-Time Unique Costs	0	
Total - Other		0
Total One-Time Costs		32,161
One-Time Savings		
Military Construction Cost Avoidances	0	
Family Housing Cost Avoidances	0	
Military Moving	0	
Land Sales	0	
One-Time Moving Savings	0	
Environmental Mitigation Savings	0	
One-Time Unique Savings	0	
Total One-Time Savings		0
Total Net One-Time Costs		32,161

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

All Costs in \$K

Base Name	Total MilCon	IMA Cost	Land Purch	Cost Avoid	Total Cost
ANNISTON ARMY DEPOT	0	0	0	0	0
RED RIVER ARMY DEPOT	34,333	2,732	0	0	37,065
LETTERKENNY ARMY DEP	0	0	0	0	0
BASE X	0	0	0	0	0
Totals:	34,333	2,732	0	0	37,065

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

MilCon for Base: RED RIVER ARMY DEPOT, TX

All Costs in \$K

Description:	MilCon Categ	Using Rehab	Rehab Cost*	New MilCon	New Cost*	Total Cost*
MAINT FACILITY SMALL ARMS	MAINT	0	0	59,000	9,026	9,026
MAINT FACILITY VEH MAINT FAC	MAINT	0	0	117,000	17,900	17,900
MAINT FACILITY TURB ENG FAC	MAINT	16,700	1,507	0	0	1,507
MAINT FACILITY TUR MAINT FAC	MAINT	28,000	2,527	0	0	2,527
MAINT FACILITY CLASS ARMOR	MAINT	0	0	3,420	523	523
MAINT FACILITY ENG DYNO	MAINT	31,560	2,849	0	0	2,849

Total Construction Cost:	34,333
+ Info Management Account:	2,732
+ Land Purchases:	0
- Construction Cost Avoid:	0
TOTAL:	37,065

* All MilCon Costs include Design, Site Preparation, Contingency Planning, and SIOH Costs where applicable.

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

PERSONNEL SUMMARY FOR: ANNISTON ARMY DEPOT, AL

BASE POPULATION (FY 1996):

Officers	Enlisted	Students	Civilians
7	5	0	3,432

FORCE STRUCTURE CHANGES:

	1996	1997	1998	1999	2000	2001	Total
Officers	0	0	0	0	0	0	0
Enlisted	0	0	0	0	0	0	0
Students	0	0	0	0	0	0	0
Civilians	0	-24	-24	-23	-23	-23	-117
TOTAL	0	-24	-24	-23	-23	-23	-117

BASE POPULATION (Prior to BRAC Action):

Officers	Enlisted	Students	Civilians
7	5	0	3,315

PERSONNEL REALIGNMENTS:

To Base: RED RIVER ARMY DEPOT, TX

	1996	1997	1998	1999	2000	2001	Total
Officers	0	0	0	0	0	0	0
Enlisted	0	0	0	0	0	0	0
Students	0	0	0	0	0	0	0
Civilians	0	0	0	688	700	0	1,388
TOTAL	0	0	0	688	700	0	1,388

To Base: BASE X, US

	1996	1997	1998	1999	2000	2001	Total
Officers	0	0	0	0	0	0	0
Enlisted	0	0	0	0	0	0	0
Students	0	0	0	0	0	0	0
Civilians	0	61	21	0	0	0	82
TOTAL	0	61	21	0	0	0	82

TOTAL PERSONNEL REALIGNMENTS (Out of ANNISTON ARMY DEPOT, AL):

	1996	1997	1998	1999	2000	2001	Total
Officers	0	0	0	0	0	0	0
Enlisted	0	0	0	0	0	0	0
Students	0	0	0	0	0	0	0
Civilians	0	61	21	688	700	0	1,470
TOTAL	0	61	21	688	700	0	1,470

SCENARIO POSITION CHANGES:

	1996	1997	1998	1999	2000	2001	Total
Officers	0	0	0	0	0	0	0
Enlisted	0	0	0	0	0	-1	-1
Civilians	0	0	0	0	-300	-339	-639
TOTAL	0	0	0	0	-300	-340	-640

BASE POPULATION (After BRAC Action):

Officers	Enlisted	Students	Civilians
7	4	0	1,206

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

PERSONNEL SUMMARY FOR: RED RIVER ARMY DEPOT, TX

BASE POPULATION (FY 1996):

Officers	Enlisted	Students	Civilians
9	5	0	3,665

FORCE STRUCTURE CHANGES:

	1996	1997	1998	1999	2000	2001	Total
Officers	0	0	0	0	0	0	0
Enlisted	0	0	0	0	0	0	0
Students	0	0	0	0	0	0	0
Civilians	0	-22	-80	-16	-15	-15	-148
TOTAL	0	-22	-80	-16	-15	-15	-148

BASE POPULATION (Prior to BRAC Action):

Officers	Enlisted	Students	Civilians
9	5	0	3,517

PERSONNEL REALIGNMENTS:

From Base: ANNISTON ARMY DEPOT, AL

	1996	1997	1998	1999	2000	2001	Total
Officers	0	0	0	0	0	0	0
Enlisted	0	0	0	0	0	0	0
Students	0	0	0	0	0	0	0
Civilians	0	0	0	688	700	0	1,388
TOTAL	0	0	0	688	700	0	1,388

TOTAL PERSONNEL REALIGNMENTS (Into RED RIVER ARMY DEPOT, TX):

	1996	1997	1998	1999	2000	2001	Total
Officers	0	0	0	0	0	0	0
Enlisted	0	0	0	0	0	0	0
Students	0	0	0	0	0	0	0
Civilians	0	0	0	688	700	0	1,388
TOTAL	0	0	0	688	700	0	1,388

BASE POPULATION (After BRAC Action):

Officers	Enlisted	Students	Civilians
9	5	0	4,905

PERSONNEL SUMMARY FOR: LETTERKENNY ARMY DEP, PA

BASE POPULATION (FY 1996):

Officers	Enlisted	Students	Civilians
18	42	0	3,795

FORCE STRUCTURE CHANGES:

	1996	1997	1998	1999	2000	2001	Total
Officers	0	0	0	0	0	0	0
Enlisted	0	10	0	0	0	0	10
Students	0	0	0	0	0	0	0
Civilians	0	179	-48	0	0	0	131
TOTAL	0	189	-48	0	0	0	141

BASE POPULATION (Prior to BRAC Action):

Officers	Enlisted	Students	Civilians
18	52	0	3,926

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

BASE POPULATION (After BRAC Action):

Officers	Enlisted	Students	Civilians
18	52	0	3,926

PERSONNEL SUMMARY FOR: BASE X, US

BASE POPULATION (FY 1996, Prior to BRAC Action):

Officers	Enlisted	Students	Civilians
752	4,208	1,121	2,709

PERSONNEL REALIGNMENTS:

From Base: ANNISTON ARMY DEPOT, AL

	1996	1997	1998	1999	2000	2001	Total
Officers	0	0	0	0	0	0	0
Enlisted	0	0	0	0	0	0	0
Students	0	0	0	0	0	0	0
Civilians	0	61	21	0	0	0	82
TOTAL	0	61	21	0	0	0	82

TOTAL PERSONNEL REALIGNMENTS (Into BASE X, US):

	1996	1997	1998	1999	2000	2001	Total
Officers	0	0	0	0	0	0	0
Enlisted	0	0	0	0	0	0	0
Students	0	0	0	0	0	0	0
Civilians	0	61	21	0	0	0	82
TOTAL	0	61	21	0	0	0	82

BASE POPULATION (After BRAC Action):

Officers	Enlisted	Students	Civilians
752	4,208	1,121	2,709

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

	Rate	1996	1997	1998	1999	2000	2001	Total
CIVILIAN POSITIONS REALIGNING OUT		0	61	21	688	700	0	1470
Early Retirement*	10.00%	0	6	2	69	70	0	147
Regular Retirement*	5.00%	0	3	1	34	35	0	73
Civilian Turnover*	15.00%	0	9	3	103	105	0	220
Civs Not Moving (RIFs)*+		0	4	1	41	42	0	88
Civilians Moving (the remainder)		0	39	14	441	448	0	942
Civilian Positions Available		0	22	7	247	252	0	528
CIVILIAN POSITIONS ELIMINATED		0	0	0	0	300	339	639
Early Retirement	10.00%	0	0	0	0	30	34	64
Regular Retirement	5.00%	0	0	0	0	15	17	32
Civilian Turnover	15.00%	0	0	0	0	45	51	96
Civs Not Moving (RIFs)*+		0	0	0	0	18	20	38
Priority Placement#	60.00%	0	0	0	0	180	203	383
Civilians Available to Move		0	0	0	0	12	14	26
Civilians Moving		0	0	0	0	12	0	12
Civilian RIFs (the remainder)		0	0	0	0	0	14	14
CIVILIAN POSITIONS REALIGNING IN		0	61	21	688	700	0	1470
Civilians Moving		0	39	14	441	460	0	954
New Civilians Hired		0	22	7	247	240	0	516
Other Civilian Additions		0	0	0	0	0	0	0
TOTAL CIVILIAN EARLY RETIREMENTS		0	6	2	69	100	34	211
TOTAL CIVILIAN RIFS		0	4	1	41	60	34	140
TOTAL CIVILIAN PRIORITY PLACEMENTS#		0	0	0	0	180	203	383
TOTAL CIVILIAN NEW HIRES		0	22	7	247	240	0	516

* Early Retirements, Regular Retirements, Civilian Turnover, and Civilians Not Willing to Move are not applicable for moves under fifty miles.

+ The Percentage of Civilians Not Willing to Move (Voluntary RIFs) varies from base to base.

Not all Priority Placements involve a Permanent Change of Station. The rate of PCS placements involving a PCS is 50.00%.

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

Base: ANNISTON ARMY DEPOT, AL	Rate	1996	1997	1998	1999	2000	2001	Total
CIVILIAN POSITIONS REALIGNING OUT								
Early Retirement*	10.00%	0	61	21	688	700	0	1470
Regular Retirement*	5.00%	0	6	2	69	70	0	147
Civilian Turnover*	15.00%	0	3	1	34	35	0	73
Civs Not Moving (RIFs)*	6.00%	0	9	3	103	105	0	220
Civilians Moving (the remainder)		0	4	1	41	42	0	88
Civilian Positions Available		0	39	14	441	448	0	942
		0	22	7	247	252	0	528
CIVILIAN POSITIONS ELIMINATED								
Early Retirement	10.00%	0	0	0	0	300	339	639
Regular Retirement	5.00%	0	0	0	0	30	34	64
Civilian Turnover	15.00%	0	0	0	0	15	17	32
Civs Not Moving (RIFs)*	6.00%	0	0	0	0	45	51	96
Priority Placement#	60.00%	0	0	0	0	18	20	38
Civilians Available to Move		0	0	0	0	180	203	383
Civilians Moving		0	0	0	0	12	14	26
Civilian RIFs (the remainder)		0	0	0	0	12	0	12
		0	0	0	0	0	14	14
CIVILIAN POSITIONS REALIGNING IN								
Civilians Moving		0	0	0	0	0	0	0
New Civilians Hired		0	0	0	0	0	0	0
Other Civilian Additions		0	0	0	0	0	0	0
TOTAL CIVILIAN EARLY RETIRMENTS								
		0	6	2	69	100	34	211
TOTAL CIVILIAN RIFs								
		0	4	1	41	60	34	140
TOTAL CIVILIAN PRIORITY PLACEMENTS#								
		0	0	0	0	180	203	383
TOTAL CIVILIAN NEW HIRES								
		0	0	0	0	0	0	0

* Early Retirements, Regular Retirements, Civilian Turnover, and Civilians Not Willing to Move are not applicable for moves under fifty miles.

Not all Priority Placements involve a Permanent Change of Station. The rate of PPS placements involving a PCS is 50.00%

Department : ARMY
Option Package : AN&RR-C
Scenario File : C:\COBRA\AN&RR-C.CBR
Std Fctrs File : C:\COBRA\SF7DEC.SFF

Base: RED RIVER ARMY DEPOT, TX Rate	1996	1997	1998	1999	2000	2001	Total
CIVILIAN POSITIONS REALIGNING OUT	0	0	0	0	0	0	0
Early Retirement*	10.00%	0	0	0	0	0	0
Regular Retirement*	5.00%	0	0	0	0	0	0
Civilian Turnover*	15.00%	0	0	0	0	0	0
Civs Not Moving (RIFs)*	6.00%	0	0	0	0	0	0
Civilians Moving (the remainder)		0	0	0	0	0	0
Civilian Positions Available		0	0	0	0	0	0
CIVILIAN POSITIONS ELIMINATED	0	0	0	0	0	0	0
Early Retirement	10.00%	0	0	0	0	0	0
Regular Retirement	5.00%	0	0	0	0	0	0
Civilian Turnover	15.00%	0	0	0	0	0	0
Civs Not Moving (RIFs)*	6.00%	0	0	0	0	0	0
Priority Placement#	60.00%	0	0	0	0	0	0
Civilians Available to Move		0	0	0	0	0	0
Civilians Moving		0	0	0	0	0	0
Civilian RIFs (the remainder)		0	0	0	0	0	0
CIVILIAN POSITIONS REALIGNING IN	0	0	0	688	700	0	1388
Civilians Moving		0	0	441	460	0	901
New Civilians Hired		0	0	247	240	0	487
Other Civilian Additions		0	0	0	0	0	0
TOTAL CIVILIAN EARLY RETIREMENTS		0	0	0	0	0	0
TOTAL CIVILIAN RIFS		0	0	0	0	0	0
TOTAL CIVILIAN PRIORITY PLACEMENTS#		0	0	0	0	0	0
TOTAL CIVILIAN NEW HIRES		0	0	247	240	0	487

* Early Retirements, Regular Retirements, Civilian Turnover, and Civilians Not Willing to Move are not applicable for moves under fifty miles.

Not all Priority Placements involve a Permanent Change of Station. The rate of PPS placements involving a PCS is 50.00%

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

Base: LETTERKENNY ARMY DEP, PA Rate	1996	1997	1998	1999	2000	2001	Total
CIVILIAN POSITIONS REALIGNING OUT	0	0	0	0	0	0	0
Early Retirement* 10.00%	0	0	0	0	0	0	0
Regular Retirement* 5.00%	0	0	0	0	0	0	0
Civilian Turnover* 15.00%	0	0	0	0	0	0	0
Civs Not Moving (RIFs)* 6.00%	0	0	0	0	0	0	0
Civilians Moving (the remainder)	0	0	0	0	0	0	0
Civilian Positions Available	0	0	0	0	0	0	0
CIVILIAN POSITIONS ELIMINATED	0	0	0	0	0	0	0
Early Retirement 10.00%	0	0	0	0	0	0	0
Regular Retirement 5.00%	0	0	0	0	0	0	0
Civilian Turnover 15.00%	0	0	0	0	0	0	0
Civs Not Moving (RIFs)* 6.00%	0	0	0	0	0	0	0
Priority Placement# 60.00%	0	0	0	0	0	0	0
Civilians Available to Move	0	0	0	0	0	0	0
Civilians Moving	0	0	0	0	0	0	0
Civilian RIFs (the remainder)	0	0	0	0	0	0	0
CIVILIAN POSITIONS REALIGNING IN	0	0	0	0	0	0	0
Civilians Moving	0	0	0	0	0	0	0
New Civilians Hired	0	0	0	0	0	0	0
Other Civilian Additions	0	0	0	0	0	0	0
TOTAL CIVILIAN EARLY RETIREMENTS	0	0	0	0	0	0	0
TOTAL CIVILIAN RIFs	0	0	0	0	0	0	0
TOTAL CIVILIAN PRIORITY PLACEMENTS#	0	0	0	0	0	0	0
TOTAL CIVILIAN NEW HIRES	0	0	0	0	0	0	0

* Early Retirements, Regular Retirements, Civilian Turnover, and Civilians Not Willing to Move are not applicable for moves under fifty miles.

Not all Priority Placements involve a Permanent Change of Station. The rate of PPS placements involving a PCS is 50.00%

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

Base: BASE X, US	Rate	1996	1997	1998	1999	2000	2001	Total
CIVILIAN POSITIONS REALIGNING OUT								
Early Retirement*	10.00%	0	0	0	0	0	0	0
Regular Retirement*	5.00%	0	0	0	0	0	0	0
Civilian Turnover*	15.00%	0	0	0	0	0	0	0
Civs Not Moving (RIFs)*	6.00%	0	0	0	0	0	0	0
Civilians Moving (the remainder)		0	0	0	0	0	0	0
Civilian Positions Available		0	0	0	0	0	0	0
CIVILIAN POSITIONS ELIMINATED								
Early Retirement	10.00%	0	0	0	0	0	0	0
Regular Retirement	5.00%	0	0	0	0	0	0	0
Civilian Turnover	15.00%	0	0	0	0	0	0	0
Civs Not Moving (RIFs)*	6.00%	0	0	0	0	0	0	0
Priority Placement#	60.00%	0	0	0	0	0	0	0
Civilians Available to Move		0	0	0	0	0	0	0
Civilians Moving		0	0	0	0	0	0	0
Civilian RIFs (the remainder)		0	0	0	0	0	0	0
CIVILIAN POSITIONS REALIGNING IN								
Civilians Moving		0	61	21	0	0	0	82
New Civilians Hired		0	39	14	0	0	0	53
Other Civilian Additions		0	22	7	0	0	0	29
TOTAL CIVILIAN EARLY RETIREMENTS		0	0	0	0	0	0	0
TOTAL CIVILIAN RIFS		0	0	0	0	0	0	0
TOTAL CIVILIAN PRIORITY PLACEMENTS#		0	0	0	0	0	0	0
TOTAL CIVILIAN NEW HIRES		0	22	7	0	0	0	29

* Early Retirements, Regular Retirements, Civilian Turnover, and Civilians Not Willing to Move are not applicable for moves under fifty miles.

Not all Priority Placements involve a Permanent Change of Station. The rate of PPS placements involving a PCS is 50.00%

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

Base: ANNISTON ARMY DEPOT, AL

Year	Pers Moved In		MilCon TimePhase	Pers Moved Total	Out/Eliminated Percent	ShutDn TimePhase
	Total	Percent				
1996	0	0.00%	33.33%	0	0.00%	0.00%
1997	0	0.00%	16.67%	61	2.89%	2.89%
1998	0	0.00%	16.67%	21	1.00%	1.00%
1999	0	0.00%	16.67%	688	32.61%	32.61%
2000	0	0.00%	16.67%	1,000	47.39%	47.39%
2001	0	0.00%	0.00%	340	16.11%	16.11%
TOTALS	0	0.00%	100.00%	2110	100.00%	100.00%

Base: RED RIVER ARMY DEPOT, TX

Year	Pers Moved In		MilCon TimePhase	Pers Moved Total	Out/Eliminated Percent	ShutDn TimePhase
	Total	Percent				
1996	0	0.00%	0.00%	0	0.00%	16.67%
1997	0	0.00%	0.00%	0	0.00%	16.67%
1998	0	0.00%	49.57%	0	0.00%	16.67%
1999	688	49.57%	50.43%	0	0.00%	16.67%
2000	700	50.43%	0.00%	0	0.00%	16.67%
2001	0	0.00%	0.00%	0	0.00%	16.67%
TOTALS	1388	100.00%	100.00%	0	0.00%	100.00%

Base: LETTERKENNY ARMY DEP, PA

Year	Pers Moved In		MilCon TimePhase	Pers Moved Total	Out/Eliminated Percent	ShutDn TimePhase
	Total	Percent				
1996	0	0.00%	33.33%	0	0.00%	16.67%
1997	0	0.00%	16.67%	0	0.00%	16.67%
1998	0	0.00%	16.67%	0	0.00%	16.67%
1999	0	0.00%	16.67%	0	0.00%	16.67%
2000	0	0.00%	16.67%	0	0.00%	16.67%
2001	0	0.00%	0.00%	0	0.00%	16.67%
TOTALS	0	0.00%	100.00%	0	0.00%	100.00%

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

Base: BASE X, US

Year	Pers Moved In		MilCon TimePhase	Pers Moved Out/Eliminated		ShutDn TimePhase
	Total	Percent		Total	Percent	
1996	0	0.00%	74.39%	0	0.00%	16.67%
1997	61	74.39%	25.61%	0	0.00%	16.67%
1998	21	25.61%	0.00%	0	0.00%	16.67%
1999	0	0.00%	0.00%	0	0.00%	16.67%
2000	0	0.00%	0.00%	0	0.00%	16.67%
2001	0	0.00%	0.00%	0	0.00%	16.67%
TOTALS	82	100.00%	100.00%	0	0.00%	100.00%

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

ONE-TIME COSTS ----(\$K)----	1996 ----	1997 ----	1998 ----	1999 ----	2000 ----	2001 ----	Total ----
CONSTRUCTION							
MILCON	3,121	0	15,471	15,741	0	0	34,333
Fam Housing	0	0	0	0	0	0	0
Land Purch	0	0	0	0	0	0	0
O&M							
CIV SALARY							
Civ RIF	0	72	18	735	1,076	610	2,511
Civ Retire	0	25	8	286	414	141	873
CIV MOVING							
Per Diem	0	133	48	1,016	1,060	0	2,257
POV Miles	0	9	3	43	45	0	101
Home Purch	0	365	131	3,886	4,054	0	8,436
HHG	0	279	100	2,930	3,056	0	6,365
Misc	0	27	10	309	322	0	668
House Hunt	0	111	40	756	788	0	1,695
PPS	0	0	0	0	2,592	2,937	5,529
RITA	0	181	65	1,683	1,755	0	3,684
FREIGHT							
Packing	0	10	3	109	114	0	237
Freight	0	1	0	6	6	0	14
Vehicles	0	0	0	0	0	0	0
Driving	0	0	0	0	0	0	0
Unemployment	0	12	3	128	188	106	438
OTHER							
Program Plan	1,950	1,463	1,097	823	617	463	6,413
Shutdown	0	141	48	1,589	2,310	785	4,875
New Hire	0	24	8	274	266	0	572
1-Time Move	0	0	45,317	0	0	0	45,317
MIL PERSONNEL							
MIL MOVING							
Per Diem	0	0	0	0	0	0	0
POV Miles	0	0	0	0	0	0	0
HHG	0	0	0	0	0	0	0
Misc	0	0	0	0	0	0	0
OTHER							
Elim PCS	0	0	0	0	0	4	4
OTHER							
HAP / RSE	0	39	13	445	647	219	1,364
Environmental	0	0	0	0	0	0	0
Info Manage	0	0	1,354	1,378	0	0	2,732
1-Time Other	0	0	0	0	0	0	0
TOTAL ONE-TIME	5,071	2,893	63,739	32,138	19,312	5,267	128,421

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

RECURRINGCOSTS	1996	1997	1998	1999	2000	2001	Total	Beyond
-----(\$K)-----	----	----	----	----	----	----	-----	-----
FAM HOUSE OPS	0	0	0	0	0	0	0	0
O&M								
RPMA	-0	-0	155	312	312	312	1,091	312
BOS	0	118	158	3,384	6,426	6,424	16,510	6,424
Unique Operat	0	0	0	0	0	0	0	0
Civ Salary	0	0	0	0	0	0	0	0
CHAMPUS	0	0	0	0	0	0	0	0
Caretaker	0	0	0	0	0	0	0	0
MIL PERSONNEL								
Off Salary	0	0	0	0	0	0	0	0
Enl Salary	0	0	0	0	0	0	0	0
House Allow	0	0	0	0	0	0	0	0
OTHER								
Mission	0	0	0	0	0	0	0	0
Misc Recur	0	0	0	0	0	0	0	0
Unique Other	0	0	0	0	0	0	0	0
TOTAL RECUR	-0	118	313	3,696	6,738	6,736	17,602	6,736
TOTAL COST	5,071	3,011	64,052	35,835	26,050	12,003	146,023	6,736
ONE-TIME SAVES	1996	1997	1998	1999	2000	2001	Total	
-----(\$K)-----	----	----	----	----	----	----	-----	
CONSTRUCTION								
MILCON	0	0	0	0	0	0	0	
Fam Housing	0	0	0	0	0	0	0	
O&M								
1-Time Move	0	0	0	0	0	0	0	
MIL PERSONNEL								
Mil Moving	0	0	0	0	0	0	0	
OTHER								
Land Sales	0	0	0	0	0	0	0	
Environmental	0	0	0	0	0	0	0	
1-Time Other	0	0	0	0	0	0	0	
TOTAL ONE-TIME	0	0	0	0	0	0	0	
RECURRINGSAVES	1996	1997	1998	1999	2000	2001	Total	Beyond
-----(\$K)-----	----	----	----	----	----	----	-----	-----
FAM HOUSE OPS	0	0	0	0	0	0	0	0
O&M								
RPMA	0	24	56	334	1,005	1,545	2,964	1,684
BOS	0	0	209	262	3,979	6,627	13,297	6,627
Unique Operat	0	0	0	0	0	0	0	0
Civ Salary	0	0	0	0	6,900	21,596	28,496	29,393
CHAMPUS	0	0	0	0	0	0	0	0
MIL PERSONNEL								
Off Salary	0	0	0	0	0	0	0	0
Enl Salary	0	0	0	0	0	15	15	31
House Allow	0	0	0	0	0	0	0	0
OTHER								
Procurement	0	0	0	0	0	0	0	0
Mission	0	0	0	0	0	0	0	0
Misc Recur	0	0	0	0	0	0	0	0
Unique Other	0	0	0	0	0	0	0	0
TOTAL RECUR	0	24	265	616	11,884	31,983	44,773	39,934
TOTAL SAVINGS	0	24	265	616	11,884	31,983	44,773	39,934

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

ONE-TIME NET -----(\$K)-----	1996	1997	1998	1999	2000	2001	Total	
CONSTRUCTION								
MILCON	3,121	0	15,471	15,741	0	0	34,333	
Fam Housing	0	0	0	0	0	0	0	
O&M								
Civ Retir/RIF	0	96	26	1,021	1,490	751	3,385	
Civ Moving	0	1,116	401	10,739	13,793	2,937	28,987	
Other	1,950	1,641	46,473	2,815	3,382	1,355	57,616	
MIL PERSONNEL								
Mil Moving	0	0	0	0	0	4	4	
OTHER								
HAP / RSE	0	39	13	445	647	219	1,364	
Environmental	0	0	0	0	0	0	0	
Info Manage	0	0	1,354	1,378	0	0	2,732	
1-Time Other	0	0	0	0	0	0	0	
Land	0	0	0	0	0	0	0	
TOTAL ONE-TIME	5,071	2,893	63,739	32,138	19,312	5,267	128,421	
RECURRING NET -----(\$K)-----	1996	1997	1998	1999	2000	2001	Total	Beyond
FAM HOUSE OPS	0	0	0	0	0	0	0	0
O&M								
RPMA	-0	-24	99	-22	-692	-1,233	-1,873	-1,372
BOS	0	118	-51	3,102	2,447	-2,402	3,213	-2,402
Unique Operat	0	0	0	0	0	0	0	0
Caretaker	0	0	0	0	0	0	0	0
Civ Salary	0	0	0	0	-6,900	-21,596	-28,496	-29,393
CHAMPUS	0	0	0	0	0	0	0	0
MIL PERSONNEL								
Mil Salary	0	0	0	0	0	-15	-15	-31
House Allow	0	0	0	0	0	0	0	0
OTHER								
Procurement	0	0	0	0	0	0	0	0
Mission	0	0	0	0	0	0	0	0
Misc Recur	0	0	0	0	0	0	0	0
Unique Other	0	0	0	0	0	0	0	0
TOTAL RECUR	-0	94	48	3,080	-5,140	-25,247	-27,177	-33,195
TOTAL NET COST	5,071	2,987	63,787	35,218	14,166	-19,980	101,250	-33,195

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

Base: ANNISTON ARMY DEPOT, AL

ONE-TIME COSTS	1996	1997	1998	1999	2000	2001	Total
-----(\$K)-----	----	----	----	----	----	----	-----
CONSTRUCTION							
MILCON	0	0	0	0	0	0	0
Fam Housing	0	0	0	0	0	0	0
Land Purch	0	0	0	0	0	0	0
O&M							
CIV SALARY							
Civ RIFs	0	72	18	735	1,076	610	2,511
Civ Retire	0	25	8	286	414	141	873
CIV MOVING							
Per Diem	0	133	48	1,016	1,060	0	2,257
POV Miles	0	9	3	43	45	0	101
Home Purch	0	365	131	3,886	4,054	0	8,436
HHG	0	279	100	2,930	3,056	0	6,365
Misc	0	27	10	309	322	0	668
House Hunt	0	111	40	756	788	0	1,695
PPS	0	0	0	0	2,592	2,937	5,529
RITA	0	181	65	1,683	1,755	0	3,684
FREIGHT							
Packing	0	10	3	109	114	0	237
Freight	0	1	0	6	6	0	14
Vehicles	0	0	0	0	0	0	0
Driving	0	0	0	0	0	0	0
Unemployment	0	12	3	128	188	106	438
OTHER							
Program Plan	1,950	1,463	1,097	823	617	463	6,413
Shutdown	0	141	48	1,589	2,310	785	4,875
New Hires	0	0	0	0	0	0	0
1-Time Move	0	0	45,317	0	0	0	45,317
MIL PERSONNEL							
MIL MOVING							
Per Diem	0	0	0	0	0	0	0
POV Miles	0	0	0	0	0	0	0
HHG	0	0	0	0	0	0	0
Misc	0	0	0	0	0	0	0
OTHER							
Elim PCS	0	0	0	0	0	4	4
OTHER							
HAP / RSE	0	35	13	445	647	219	1,364
Environmental	0	0	0	0	0	0	0
Info Manage	0	0	0	0	0	0	0
1-Time Other	0	0	0	0	0	0	0
TOTAL ONE-TIME	1,950	2,858	46,906	14,745	19,046	5,267	90,784

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

Base: ANNISTON ARMY DEPOT, AL

RECURRING COSTS -----(\$K)-----	1996	1997	1998	1999	2000	2001	Total	Beyond
FAM HOUSE OPS	0	0	0	0	0	0	0	0
O&M								
RPMA	0	0	0	0	0	0	0	0
BOS	0	0	0	0	0	0	0	0
Unique Operat	0	0	0	0	0	0	0	0
Civ Salary	0	0	0	0	0	0	0	0
CHAMPUS	0	0	0	0	0	0	0	0
Caretaker	0	0	0	0	0	0	0	0
MIL PERSONNEL								
Off Salary	0	0	0	0	0	0	0	0
Enl Salary	0	0	0	0	0	0	0	0
House Allow	0	0	0	0	0	0	0	0
OTHER								
Mission	0	0	0	0	0	0	0	0
Misc Recur	0	0	0	0	0	0	0	0
Unique Other	0	0	0	0	0	0	0	0
TOTAL RECUR	0	0	0	0	0	0	0	0

TOTAL COSTS 1,950 2,868 46,906 14,745 19,046 5,267 90,784 0

ONE-TIME SAVES -----(\$K)-----	1996	1997	1998	1999	2000	2001	Total	Beyond
CONSTRUCTION								
MILCON	0	0	0	0	0	0	0	0
Fam Housing	0	0	0	0	0	0	0	0
O&M								
1-Time Move	0	0	0	0	0	0	0	0
MIL PERSONNEL								
Mil Moving	0	0	0	0	0	0	0	0
OTHER								
Land Sales	0	0	0	0	0	0	0	0
Environmental	0	0	0	0	0	0	0	0
1-Time Other	0	0	0	0	0	0	0	0
TOTAL ONE-TIME	0	0	0	0	0	0	0	0

RECURRING SAVES -----(\$K)-----	1996	1997	1998	1999	2000	2001	Total	Beyond
FAM HOUSE OPS	0	0	0	0	0	0	0	0
O&M								
RPMA	0	24	56	334	1,005	1,545	2,964	1,684
BOS	0	0	209	282	3,979	6,627	13,297	6,627
Unique Operat	0	0	0	0	0	0	0	0
Civ Salary	0	0	0	0	6,900	21,596	28,496	29,393
CHAMPUS	0	0	0	0	0	0	0	0
MIL PERSONNEL								
Off Salary	0	0	0	0	0	0	0	0
Enl Salary	0	0	0	0	0	15	15	31
House Allow	0	0	0	0	0	0	0	0
OTHER								
Procurement	0	0	0	0	0	0	0	0
Mission	0	0	0	0	0	0	0	0
Misc Recur	0	0	0	0	0	0	0	0
Unique Other	0	0	0	0	0	0	0	0
TOTAL RECUR	0	24	265	616	11,884	31,983	44,773	39,934

TOTAL SAVINGS 0 24 265 616 11,884 31,983 44,773 39,934

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

Base: ANNISTON ARMY DEPOT, AL

ONE-TIME NET -----(\$K)-----	1996	1997	1998	1999	2000	2001	Total	
CONSTRUCTION								
MILCON	0	0	0	0	0	0	0	
Fam Housing	0	0	0	0	0	0	0	
O&M								
Civ Retir/RIF	0	96	26	1,021	1,490	751	3,385	
Civ Moving	0	1,116	401	10,739	13,793	2,937	28,987	
Other	1,950	1,616	46,466	2,541	3,115	1,355	57,043	
MIL PERSONNEL								
Mil Moving	0	0	0	0	0	4	4	
OTHER								
HAP / RSE	0	39	13	445	647	219	1,364	
Environmental	0	0	0	0	0	0	0	
Info Manage	0	0	0	0	0	0	0	
1-Time Other	0	0	0	0	0	0	0	
Land	0	0	0	0	0	0	0	
TOTAL ONE-TIME	1,950	2,868	46,906	14,745	19,046	5,267	90,784	
RECURRING NET -----(\$K)-----	1996	1997	1998	1999	2000	2001	Total	Beyond
FAM HOUSE OPS	0	0	0	0	0	0	0	0
O&M								
RPMA	-0	-24	-56	-334	-1,005	-1,545	-2,964	-1,684
BOS	0	0	-209	-282	-3,979	-8,827	-13,297	-8,827
Unique Operat	0	0	0	0	0	0	0	0
Caretaker	0	0	0	0	0	0	0	0
Civ Salary	0	0	0	0	-6,900	-21,596	-28,496	-29,393
CHAMPUS	0	0	0	0	0	0	0	0
MIL PERSONNEL								
Mil Salary	0	0	0	0	0	-15	-15	-31
House Allow	0	0	0	0	0	0	0	0
OTHER								
Procurement	0	0	0	0	0	0	0	0
Mission	0	0	0	0	0	0	0	0
Misc Recur	0	0	0	0	0	0	0	0
Unique Other	0	0	0	0	0	0	0	0
TOTAL RECUR	-0	-24	-265	-616	-11,884	-31,983	-44,773	-39,934
TOTAL NET COST	1,950	2,844	46,641	14,129	7,162	-26,716	46,011	-39,934

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

Base: RED RIVER ARMY DEPOT, TX	1996	1997	1998	1999	2000	2001	Total
ONE-TIME COSTS	-----	-----	-----	-----	-----	-----	-----
-----(\$K)-----	-----	-----	-----	-----	-----	-----	-----
CONSTRUCTION							
MILCON	3,121	0	15,471	15,741	0	0	34,333
Fam Housing	0	0	0	0	0	0	0
Land Purch	0	0	0	0	0	0	0
O&M							
CIV SALARY							
Civ RIFs	0	0	0	0	0	0	0
Civ Retire	0	0	0	0	0	0	0
CIV MOVING							
Per Diem	0	0	0	0	0	0	0
POV Miles	0	0	0	0	0	0	0
Home Purch	0	0	0	0	0	0	0
HHG	0	0	0	0	0	0	0
Misc	0	0	0	0	0	0	0
House Hunt	0	0	0	0	0	0	0
PPS	0	0	0	0	0	0	0
RITA	0	0	0	0	0	0	0
FREIGHT							
Packing	0	0	0	0	0	0	0
Freight	0	0	0	0	0	0	0
Vehicles	0	0	0	0	0	0	0
Driving	0	0	0	0	0	0	0
Unemployment	0	0	0	0	0	0	0
OTHER							
Program Plan	0	0	0	0	0	0	0
Shutdown	0	0	0	0	0	0	0
New Hires	0	0	0	274	266	0	540
1-Time Move	0	0	0	0	0	0	0
MIL PERSONNEL							
MIL MOVING							
Per Diem	0	0	0	0	0	0	0
POV Miles	0	0	0	0	0	0	0
HHG	0	0	0	0	0	0	0
Misc	0	0	0	0	0	0	0
OTHEP							
Elim PCS	0	0	0	0	0	0	0
OTHER							
HAP / RSE	0	0	0	0	0	0	0
Environmental	0	0	0	0	0	0	0
Info Manage	0	0	1,354	1,378	0	0	2,732
1-Time Other	0	0	0	0	0	0	0
TOTAL ONE-TIME	3,121	0	16,825	17,393	266	0	37,605

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

Base: RED RIVER ARMY DEPOT, TX

ONE-TIME NET -----(\$K)-----	1996	1997	1998	1999	2000	2001	Total	
CONSTRUCTION								
MILCON	3,121	0	15,471	15,741	0	0	34,333	
Fam Housing	0	0	0	0	0	0	0	
O&M								
Civ Retir/RIF	0	0	0	0	0	0	0	
Civ Moving	0	0	0	0	0	0	0	
Other	0	0	0	274	266	0	540	
MIL PERSONNEL								
Mil Moving	0	0	0	0	0	0	0	
OTHER								
HAP / RSE	0	0	0	0	0	0	0	
Environmental	0	0	0	0	0	0	0	
Info Manage	0	0	1,354	1,378	0	0	2,732	
1-Time Other	0	0	0	0	0	0	0	
Land	0	0	0	0	0	0	0	
TOTAL ONE-TIME	3,121	0	16,825	17,393	266	0	37,605	
RECURRING NET -----(\$K)-----	1996	1997	1998	1999	2000	2001	Total	Beyond
FAM HOUSE OPS	0	0	0	0	0	0	0	0
O&M								
RPMA	-0	-0	155	312	312	312	1,091	312
BOS	0	0	0	3,226	6,268	6,266	15,759	6,266
Unique Operat	0	0	0	0	0	0	0	0
Caretaker	0	0	0	0	0	0	0	0
Civ Salary	0	0	0	0	0	0	0	0
CHAMPUS	0	0	0	0	0	0	0	0
MIL PERSONNEL								
Mil Salary	0	0	0	0	0	0	0	0
House Allow	0	0	0	0	0	0	0	0
OTHER								
Procurement	0	0	0	0	0	0	0	0
Mission	0	0	0	0	0	0	0	0
Misc Recur	0	0	0	0	0	0	0	0
Unique Other	0	0	0	0	0	0	0	0
TOTAL RECUR	-0	-0	155	3,538	6,580	6,576	16,850	6,576
TOTAL NET COST	3,121	-0	16,980	20,931	6,846	6,576	54,455	6,576

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

Base: LETTERKENNY ARMY DEP, PA

ONE-TIME COSTS	1996	1997	1998	1999	2000	2001	Total
-----(\$K)-----	----	----	----	----	----	----	-----
CONSTRUCTION							
MILCON	0	0	0	0	0	0	0
Fam Housing	0	0	0	0	0	0	0
Land Purch	0	0	0	0	0	0	0
O&M							
CIV SALARY							
Civ RIFs	0	0	0	0	0	0	0
Civ Retire	0	0	0	0	0	0	0
CIV MOVING							
Per Diem	0	0	0	0	0	0	0
POV Miles	0	0	0	0	0	0	0
Home Purch	0	0	0	0	0	0	0
HHG	0	0	0	0	0	0	0
Misc	0	0	0	0	0	0	0
House Hunt	0	0	0	0	0	0	0
PPS	0	0	0	0	0	0	0
RITA	0	0	0	0	0	0	0
FREIGHT							
Packing	0	0	0	0	0	0	0
Freight	0	0	0	0	0	0	0
Vehicles	0	0	0	0	0	0	0
Driving	0	0	0	0	0	0	0
Unemployment	0	0	0	0	0	0	0
OTHER							
Program Plan	0	0	0	0	0	0	0
Shutdown	0	0	0	0	0	0	0
New Hires	0	0	0	0	0	0	0
1-Time Move	0	0	0	0	0	0	0
MIL PERSONNEL							
MIL MOVING							
Per Diem	0	0	0	0	0	0	0
POV Miles	0	0	0	0	0	0	0
HHG	0	0	0	0	0	0	0
Misc	0	0	0	0	0	0	0
OTHER							
Elim PCS	0	0	0	0	0	0	0
OTHER							
HAP / RSE	0	0	0	0	0	0	0
Environmental	0	0	0	0	0	0	0
Info Manage	0	0	0	0	0	0	0
1-Time Other	0	0	0	0	0	0	0
TOTAL ONE-TIME	0	0	0	0	0	0	0

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

Base: BASE X, US ONE-TIME COSTS ----(\$K)----	1996	1997	1998	1999	2000	2001	Total
CONSTRUCTION							
MILCON	0	0	0	0	0	0	0
Fam Housing	0	0	0	0	0	0	0
Land Purch	0	0	0	0	0	0	0
O&M							
CIV SALARY							
Civ RIFs	0	0	0	0	0	0	0
Civ Retire	0	0	0	0	0	0	0
CIV MOVING							
Per Diem	0	0	0	0	0	0	0
POV Miles	0	0	0	0	0	0	0
Home Purch	0	0	0	0	0	0	0
HHG	0	0	0	0	0	0	0
Misc	0	0	0	0	0	0	0
House Hunt	0	0	0	0	0	0	0
PPS	0	0	0	0	0	0	0
RITA	0	0	0	0	0	0	0
FREIGHT							
Packing	0	0	0	0	0	0	0
Freight	0	0	0	0	0	0	0
Vehicles	0	0	0	0	0	0	0
Driving	0	0	0	0	0	0	0
Unemployment	0	0	0	0	0	0	0
OTHER							
Program Plan	0	0	0	0	0	0	0
Shutdown	0	0	0	0	0	0	0
New Hires	0	24	8	0	0	0	32
1-Time Move	0	0	0	0	0	0	0
MIL PERSONNEL							
MIL MOVING							
Per Diem	0	0	0	0	0	0	0
POV Miles	0	0	0	0	0	0	0
HHG	0	0	0	0	0	0	0
Misc	0	0	0	0	0	0	0
OTHER							
Elim PCS	0	0	0	0	0	0	0
OTHER							
HAP / RSE	0	0	0	0	0	0	0
Environmental	0	0	0	0	0	0	0
Info Manage	0	0	0	0	0	0	0
1-Time Other	0	0	0	0	0	0	0
TOTAL ONE-TIME	0	24	8	0	0	0	32

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

Base: BASE X, US

ONE-TIME NET -----(\$K)-----	1996	1997	1998	1999	2000	2001	Total	
CONSTRUCTION								
MILCON	0	0	0	0	0	0	0	
Fam Housing	0	0	0	0	0	0	0	
O&M								
Civ Retir/RIF	0	0	0	0	0	0	0	
Civ Moving	0	0	0	0	0	0	0	
Other	0	24	8	0	0	0	32	
MIL PERSONNEL								
Mil Moving	0	0	0	0	0	0	0	
OTHER								
HAP / RSE	0	0	0	0	0	0	0	
Environmental	0	0	0	0	0	0	0	
Info Manage	0	0	0	0	0	0	0	
1-Time Other	0	0	0	0	0	0	0	
Land	0	0	0	0	0	0	0	
TOTAL ONE-TIME	0	24	8	0	0	0	32	
RECURRING NET -----(\$K)-----	1996	1997	1998	1999	2000	2001	Total	Beyond
FAM HOUSE OPS	0	0	0	0	0	0	0	0
O&M								
RPMA	0	0	0	0	0	0	0	0
BOS	0	118	158	158	158	158	751	158
Unique Operat	0	0	0	0	0	0	0	0
Caretaker	0	0	0	0	0	0	0	0
Civ Salary	0	0	0	0	0	0	0	0
CHAMPUS	0	0	0	0	0	0	0	0
MIL PERSONNEL								
Mil Salary	0	0	0	0	0	0	0	0
House Allow	0	0	0	0	0	0	0	0
OTHER								
Procurement	0	0	0	0	0	0	0	0
Mission	0	0	0	0	0	0	0	0
Misc Recur	0	0	0	0	0	0	0	0
Unique Other	0	0	0	0	0	0	0	0
TOTAL RECUR	0	118	158	158	158	158	751	158
TOTAL NET COST	0	142	166	158	158	158	783	158

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

Base	Personnel		SF		
	Change	%Change	Change	%Change	Chg/Per
ANNISTON ARMY DEPOT	-2,110	-63%	-3,900,000	-46%	1,848
RED RIVER ARMY DEPOT	1,388	39%	179,420	2%	129
LETTERKENNY ARMY DEP	0	0%	0	0%	0
BASE X	82	1%	0	0%	0

Base	RPMA(\$)			BOS(\$)		
	Change	%Change	Chg/Per	Change	%Change	Chg/Per
ANNISTON ARMY DEPOT	-1,683,838	-44%	798	-8,826,697	-42%	4,183
RED RIVER ARMY DEPOT	312,141	2%	225	6,265,781	20%	4,514
LETTERKENNY ARMY DEP	0	0%	0	0	0%	0
BASE X	0	0%	0	158,323	1%	1,931

Base	RPMABOS(\$)		
	Change	%Change	Chg/Per
ANNISTON ARMY DEPOT	-10,510,535	-42%	4,981
RED RIVER ARMY DEPOT	6,577,922	14%	4,739
LETTERKENNY ARMY DEP	0	0%	0
BASE X	158,323	0%	1,931

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

Net Change(\$K)	1996	1997	1998	1999	2000	2001	Total	Beyond
RPMA Change	-0	-24	99	-22	-692	-1,233	-1,873	-1,372
BOS Change	0	118	-51	3,102	2,447	-2,402	3,213	-2,402
Housing Change	0	0	0	0	0	0	0	0
TOTAL CHANGES	-0	94	48	3,080	1,754	-3,636	1,340	-3,774

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

INPUT SCREEN ONE - GENERAL SCENARIO INFORMATION

Model Year One : FY 1996

Model does Time-Phasing of Construction/Shutdown: Yes

Base Name	Strategy:
ANNISTON ARMY DEPOT, AL	Realignment
RED RIVER ARMY DEPOT, TX	Realignment
LETTERKENNY ARMY DEP, PA	Realignment
BASE X, US	Realignment

Summary:

REALIGN ANNISTON ARMY DEPOT BY TRANSFERRING THE HEAVY COMBAT VEHICLE MAINTENANCE WORKLOAD TO RED RIVER ARMY DEPOT, TRANSFER SMALL ARMS REPAIR WORKLOAD AND MISSION TO RED RIVER, TRANSFER MISSILE MAINTENANCE WORKLOAD TO LETTERKENNY ARMY DEPOT, ENCLAVE AMMUNITION STORAGE AND CHEMICAL DEMIL MISSION AT ANNISTON.

INPUT SCREEN TWO - DISTANCE TABLE

From Base:	To Base:	Distance:
ANNISTON ARMY DEPOT, AL	RED RIVER ARMY DEPOT, TX	546 mi
ANNISTON ARMY DEPOT, AL	LETTERKENNY ARMY DEP, PA	729 mi
ANNISTON ARMY DEPOT, AL	BASE X, US	1,340 mi
RED RIVER ARMY DEPOT, TX	LETTERKENNY ARMY DEP, PA	1,164 mi
RED RIVER ARMY DEPOT, TX	BASE X, US	1,340 mi
LETTERKENNY ARMY DEP, PA	BASE X, US	1,340 mi

INPUT SCREEN THREE - MOVEMENT TABLE

Transfers from ANNISTON ARMY DEPOT, AL to RED RIVER ARMY DEPOT, TX

	1996	1997	1998	1999	2000	2001
Officer Positions:	0	0	0	0	0	0
Enlisted Positions:	0	0	0	0	0	0
Civilian Positions:	0	0	0	688	700	0
Student Positions:	0	0	0	0	0	0
Missn Eqpt (tons):	0	0	0	0	0	0
Suppt Eqpt (tons):	0	0	0	0	0	0
Mil Light Vehic (tons):	0	0	0	0	0	0
Heavy/Spec Vehic (tons):	0	0	0	0	0	0

Transfers from ANNISTON ARMY DEPOT, AL to BASE X, US

	1996	1997	1998	1999	2000	2001
Officer Positions:	0	0	0	0	0	0
Enlisted Positions:	0	0	0	0	0	0
Civilian Positions:	0	61	21	0	0	0
Student Positions:	0	0	0	0	0	0
Missn Eqpt (tons):	0	0	0	0	0	0
Suppt Eqpt (tons):	0	0	0	0	0	0
Mil Light Vehic (tons):	0	0	0	0	0	0
Heavy/Spec Vehic (tons):	0	0	0	0	0	0

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

INPUT SCREEN FOUR - STATIC BASE INFORMATION

Name: ANNISTON ARMY DEPOT, AL

Total Officer Employees:	7	RPMA Non-Payroll (\$K/Year):	3,862
Total Enlisted Employees:	5	Communications (\$K/Year):	818
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	20,987
Total Civilian Employees:	3,432	BOS Payroll (\$K/Year):	10,848
Mil Families Living On Base:	0.0%	Family Housing (\$K/Year):	36
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.77
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	8,482	CHAMPUS Shift to Medicare:	0.0%
Officer VHA (\$/Month):	0	Activity Code:	01012
Enlisted VHA (\$/Month):	0		
Per Diem Rate (\$/Day):	68	Homeowner Assistance Program:	Yes
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

Name: RED RIVER ARMY DEPOT, TX

Total Officer Employees:	9	RPMA Non-Payroll (\$K/Year):	14,500
Total Enlisted Employees:	5	Communications (\$K/Year):	850
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	32,450
Total Civilian Employees:	3,665	BOS Payroll (\$K/Year):	13,250
Mil Families Living On Base:	100.0%	Family Housing (\$K/Year):	446
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.94
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	7,745	CHAMPUS Shift to Medicare:	0.0%
Officer VHA (\$/Month):	21	Activity Code:	48515
Enlisted VHA (\$/Month):	2		
Per Diem Rate (\$/Day):	73	Homeowner Assistance Program:	No
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

Name: LETTERKENNY ARMY DEP, PA

Total Officer Employees:	1E	RPMA Non-Payroll (\$K/Year):	6,000
Total Enlisted Employees:	42	Communications (\$K/Year):	600
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	34,800
Total Civilian Employees:	3,795	BOS Payroll (\$K/Year):	14,200
Mil Families Living On Base:	100.0%	Family Housing (\$K/Year):	330
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	1.02
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	8,336	CHAMPUS Shift to Medicare:	0.0%
Officer VHA (\$/Month):	0	Activity Code:	42345
Enlisted VHA (\$/Month):	1		
Per Diem Rate (\$/Day):	66	Homeowner Assistance Program:	No
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

Name: BASE X, US

Total Officer Employees:	752	RPMA Non-Payroll (\$K/Year):	11,891
Total Enlisted Employees:	4,208	Communications (\$K/Year):	1,514
Total Student Employees:	1,121	BOS Non-Payroll (\$K/Year):	29,982
Total Civilian Employees:	2,709	BOS Payroll (\$K/Year):	21,877
Mil Families Living On Base:	55.0%	Family Housing (\$K/Year):	8,151
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	1.09
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	6,091	CHAMPUS Shift to Medicare:	0.0%
Officer VHA (\$/Month):	178	Activity Code:	BASEX
Enlisted VHA (\$/Month):	132		
Per Diem Rate (\$/Day):	101	Homeowner Assistance Program:	No
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

INPUT SCREEN FIVE - DYNAMIC BASE INFORMATION

Name: ANNISTON ARMY DEPOT, AL	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	45,317	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	0%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	0%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	3,900	Perc Family Housing ShutDown:				0.0%

Name: RED RIVER ARMY DEPOT, TX	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	0%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	0%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0	Perc Family Housing ShutDown:				0.0%

Name: LETTERKENNY ARMY DEP, PA	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	0%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	0%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0	Perc Family Housing ShutDown:				0.0%

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

INPUT SCREEN FIVE - DYNAMIC BASE INFORMATION

Name: BASE X, US	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqcd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	0%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	0%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0	Perc Family Housing ShutDown:				0.0%

INPUT SCREEN SIX - BASE PERSONNEL INFORMATION

Name: ANNISTON ARMY DEPOT, AL	1996	1997	1998	1999	2000	2001
Off Force Struc Change:	0	0	0	0	0	0
Enl Force Struc Change:	0	0	0	0	0	0
Civ Force Struc Change:	0	-24	-24	-23	-23	-23
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	0	0	0	0	0	0
Enl Scenario Change:	0	0	0	0	0	-1
Civ Scenario Change:	0	0	0	0	-300	-335
Off Change(No Sal Save):	0	0	0	0	0	0
Enl Change(No Sal Save):	0	0	0	0	0	0
Civ Change(No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

Name: RED RIVER ARMY DEPOT, TX	1996	1997	1998	1999	2000	2001
Off Force Struc Change:	0	0	0	0	0	0
Enl Force Struc Change:	0	0	0	0	0	0
Civ Force Struc Change:	0	-22	-80	-16	-15	-15
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	0	0	0	0	0	0
Enl Scenario Change:	0	0	0	0	0	0
Civ Scenario Change:	0	0	0	0	0	0
Off Change(No Sal Save):	0	0	0	0	0	0
Enl Change(No Sal Save):	0	0	0	0	0	0
Civ Change(No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

INPUT SCREEN SIX - BASE PERSONNEL INFORMATION

Name:	1996	1997	1998	1999	2000	2001
LETTERKENNY ARMY DEP, PA						
Off Force Struc Change:	0	0	0	0	0	0
Enl Force Struc Change:	0	10	0	0	0	0
Civ Force Struc Change:	0	179	-48	0	0	0
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	0	0	0	0	0	0
Enl Scenario Change:	0	0	0	0	0	0
Civ Scenario Change:	0	0	0	0	0	0
Off Change(No Sal Save):	0	0	0	0	0	0
Enl Change(No Sal Save):	0	0	0	0	0	0
Civ Change(No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

INPUT SCREEN SEVEN - BASE MILITARY CONSTRUCTION INFORMATION

Name: RED RIVER ARMY DEPOT, TX

Description	Categ	New MilCon	Rehab MilCon	Total Cost(\$K)
MAINT FACILITY SMALL ARMS	MAINT	59,000	0	0
MAINT FACILITY VEH MAINT FAC	MAINT	117,000	0	0
MAINT FACILITY TURB ENG FAC	MAINT	0	16,700	0
MAINT FACILITY TUR MAINT FAC	MAINT	0	28,000	0
MAINT FACILITY CLASS ARMOR	MAINT	3,420	0	0
MAINT FACILITY ENG DYNO	MAINT	0	31,560	0

STANDARD FACTORS SCREEN ONE - PERSONNEL

Percent Officers Married:	77.00%	Civ Early Retire Pay Factor:	9.00%
Percent Enlisted Married:	58.50%	Priority Placement Service:	60.00%
Enlisted Housing MilCon:	91.00%	PPS Actions Involving PCS:	50.00%
Officer Salary(\$/Year):	67,948.00	Civilian PCS Costs (\$):	28,800.00
Off BAQ with Dependents(\$):	7,717.00	Civilian New Hire Cost(\$):	1,109.00
Enlisted Salary(\$/Year):	30,860.00	Nat Median Home Price(\$):	114,600.00
Enl BAQ with Dependents(\$):	5,223.00	Home Sale Reimburse Rate:	10.00%
Avg Unemploy Cost(\$/Week):	174.00	Max Home Sale Reimburs(\$):	22,385.00
Unemployment Eligibility(Weeks):	18	Home Purch Reimburse Rate:	5.00%
Civilian Salary(\$/Year):	45,998.00	Max Home Purch Reimburs(\$):	11,191.00
Civilian Turnover Rate:	15.00%	Civilian Homeowning Rate:	64.00%
Civilian Early Retire Rate:	10.00%	HAP Home Value Reimburse Rate:	22.90%
Civilian Regular Retire Rate:	5.00%	HAP Homeowner Receiving Rate:	5.00%
Civilian RIF Pay Factor:	39.00%	RSE Home Value Reimburse Rate:	19.00%
SF File Desc:	SF7DEC.SFF	RSE Homeowner Receiving Rate:	12.00%

Department : ARMY
 Option Package : AN&RR-C
 Scenario File : C:\COBRA\AN&RR-C.CBR
 Std Fctrs File : C:\COBRA\SF7DEC.SFF

STANDARD FACTORS SCREEN TWO - FACILITIES

RPMA Building SF Cost Index:	0.93	Rehab vs. New MilCon Cost:	59.00%
BOS Index (RPMA vs population):	0.54	Info Management Account:	15.00%
(Indices are used as exponents)			
Program Management Factor:	10.00%	MilCon Design Rate:	10.00%
Caretaker Admin(SF/Care):	162.00	MilCon SIOH Rate:	6.00%
Mothball Cost (\$/SF):	1.25	MilCon Contingency Plan Rate:	7.00%
Avg Bachelor Quarters(SF):	388.00	MilCon Site Preparation Rate:	24.00%
Avg Family Quarters(SF):	1,819.00	Discount Rate for NPV.RPT/ROI:	2.75%
APPDET.RPT Inflation Rates:		Inflation Rate for NPV.RPT/ROI:	0.00%
1996: 2.90% 1997: 3.00% 1998: 3.00%		1999: 3.00% 2000: 3.00% 2001: 3.00%	

STANDARD FACTORS SCREEN THREE - TRANSPORTATION

Material/Assigned Person(Lb):	710	Equip Pack & Crate(\$/Ton):	284.00
HHG Per Off Family (Lb):	14,500.00	Mil Light Vehicle(\$/Mile):	0.09
HHG Per Enl Family (Lb):	9,000.00	Heavy/Spec Vehicle(\$/Mile):	0.09
HHG Per Mil Single (Lb):	6,400.00	POV Reimbursement(\$/Mile):	0.18
HHG Per Civilian (Lb):	18,000.00	Avg Mil Tour Length (Years):	2.90
Total HHG Cost (\$/100Lb):	35.00	Routine PCS(\$/Pers/Tour):	4,665.00
Air Transport (\$/Pass Mile):	0.20	One-Time Off PCS Cost(\$):	6,134.00
Misc Exp (\$/Direct Employ):	700.00	One-Time Enl PCS Cost(\$):	4,381.00

STANDARD FACTORS SCREEN FOUR - MILITARY CONSTRUCTION

Category	UM	\$/UM	Category	UM	\$/UM
Horizontal	(SY)	38	APPLIED INSTR	(SF)	114
Waterfront	(LF)	0	LABS (RDT&E)	(SF)	175
Air Operations	(SF)	130	CHILD CARE CENTER	(SF)	120
Operational	(SF)	119	PRODUCTION FAC	(SF)	100
Administrative	(SF)	106	PHYSICAL FITNESS FAC	(SF)	128
School Buildings	(SF)	104	2+2 BACHQ	(EA)	19,140
Maintenance Shops	(SF)	108	Optional Category G	()	0
Bachelor Quarters	(EA)	46,227	Optional Category H	()	0
Family Quarters	(EA)	96,040	Optional Category I	()	0
Covered Storage	(SF)	60	Optional Category J	()	0
Dining Facilities	(SF)	180	Optional Category K	()	0
Recreation Facilities	(SF)	0	Optional Category L	()	0
Communications Facil	(SF)	0	Optional Category M	()	0
Shipyard Maintenance	(SF)	0	Optional Category N	()	0
RDT & E Facilities	(SF)	139	Optional Category O	()	0
POL Storage	(BL)	0	Optional Category P	()	0
Ammunition Storage	(SF)	0	Optional Category Q	()	0
Medical Facilities	(SF)	0	Optional Category R	()	0
Environmental	()	0			

ANNISTON ARMY DEPOT - 1996 ASIP PERSONNEL
 18115194

	OFFICER	ENLIST	CIVILIAN	OTHER	TOTAL
TDA UNITS	7	5	3411		
OTHER			21	477	
STUDENTS					
	7	5	3432	477	

FORCE STRUCTURE CHANGES

	1997	1998	1999	2000	2001
OFFICER					
ENLIST					
CIVILIAN	- 24	- 24	- 23	- 23	- 23
OTHER :					
BOTTOM LINE	- 24	- 24	- 23	- 23	- 23

OFFICER - ENLISTED - CIVILIAN

ENCLAVE AT ARMISTON

	1996	1997	1998	1999	2000
DINER 3. ATL W0741G ARMY DEP W0LXAA DCA - ASD 10LX01				0-0-3 0-0-573 0-0-17	
ACT/SA MED DEPT W120704 CNO USA CMIC-BIO W4M101 CSA 10LX02				0-0-12 1-0-99 0-0-1	
DEF PRINT SER 10LX03 CTR USA MIL HIST W34U!N				0-0-3 0-0-4	

ELIMINATE

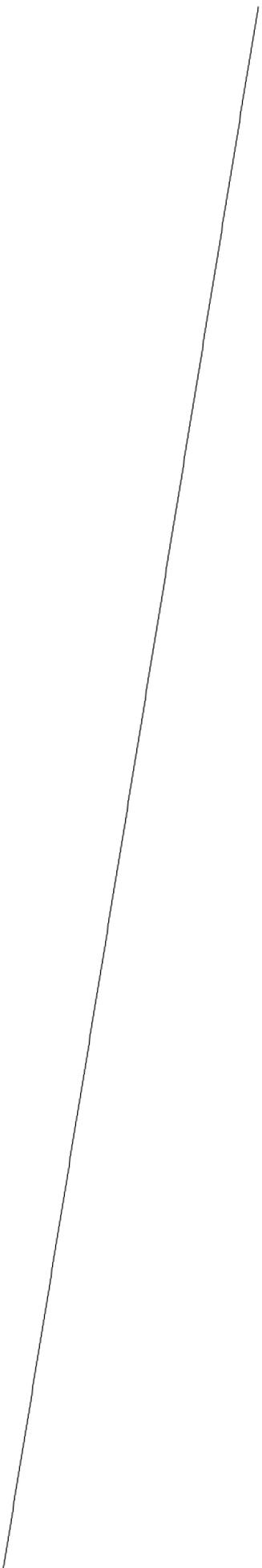
	1996	1997	1998	1999	2000
ARMY DEP W0LXAA		0-0-300	0-1-339		

DEFENSE LOGISTICS AGENCY

	OFFICER	ENLIST	CIVILIAN	OTHER
W1B608 DLA DEPOT	1		(275)	
CIVILIANS WERE LEFT				
WAF ASIA IN ERROR				
DLA NOT INCLUDED				

BASE POPULATION

	OFFICER	ENLIST	CIVILIAN	OTHER
	?			477
				477



COBRA REALIGNMENT SUMMARY (COBRA v5.08) - Page 1/2
 Data As Of 15:52 01/12/1995, Report Created 15:22 04/14/1995

Department : Air Force
 Option Package : Kelly-Alt 4
 Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY004.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

Starting Year : 1996
 Final Year : 1999
 ROI Year : 2000 (1 Year)

NPV in 2015(\$K):-2,763,527
 1-Time Cost(\$K): 560,638

Net Costs (\$K) Constant Dollars	1996						Total	Beyond
	1996	1997	1998	1999	2000	2001		
MilCon	28,409	25,409	25,409	25,409	0	0	104,638	0
Person	-20,025	-76,190	-131,241	-186,230	-222,667	-222,667	-859,020	-222,667
Overhd	5,075	2,211	-5,086	-10,324	-21,700	-21,700	-51,525	-21,700
Moving	63,563	64,844	63,555	63,537	0	0	255,500	0
Missio	0	0	0	0	0	0	0	0
Other	36,214	36,215	36,213	35,143	-2,140	-2,140	139,505	0
TOTAL	113,236	52,489	-11,149	-72,465	-246,506	-246,506	-410,901	-244,366

	1996	1997	1998	1999	2000	2001	Total
POSITIONS ELIMINATED							
Off	57	58	57	58	0	0	230
Enl	170	170	170	169	0	0	679
Civ	967	967	967	966	0	0	3,867
TOT	1,194	1,195	1,194	1,193	0	0	4,776

	1996	1997	1998	1999	2000	2001	Total
POSITIONS REALIGNED							
Off	20	503	19	19	0	0	561
Enl	173	2,739	172	174	0	0	3,258
Stu	0	0	0	0	0	0	0
Civ	1,773	3,747	1,773	1,774	0	0	9,067
TOT	1,966	6,989	1,964	1,967	0	0	12,886

Summary:

Assumptions: COMMISSION ALTERNATIVE 2 - SENSITIVITY ON POS ELIM & PHASING.
 Kelly AFB closes, Air Intelligence Agency remains and is attached to Lackland AFB. AFRES C-5As and ANG F-16s cantoned at Lackland AFB.
 SA-ALC workload transferred to OC-ALC (89%), OO-ALC (10%) & WR-ALC (1%).
 Tenants with specified gaining locations moved to their respective sites.
 Remaining tenants and base population moved to Base X. Retain housing at Kelly, and build 93 MFH units at Tinker. Used updated manpower sheet from AF/PEP resulting in an add'l 44 eliminations. ELIMINATED 25% OF CIVS, 4 YR CL.

Department : Air Force
 Option Package : Kelly-Alt 4
 Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY004.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

Costs (\$K) Constant Dollars	Constant Dollars						Total	Beyond
	1996	1997	1998	1999	2000	2001		
MilCon	28,409	25,409	25,409	25,409	0	0	104,638	0
Person	9,303	23,647	24,367	25,108	16,536	16,536	115,497	16,536
Overhd	7,297	9,410	11,037	12,680	8,071	8,071	56,565	8,071
Moving	63,866	65,148	63,855	63,840	0	0	256,710	0
Missio	0	0	0	0	0	0	0	0
Other	36,214	36,215	36,213	36,213	0	0	144,855	0
TOTAL	145,089	159,831	160,882	163,251	24,607	24,607	678,267	24,607

Savings (\$K) Constant Dollars	Constant Dollars						Total	Beyond
	1996	1997	1998	1999	2000	2001		
MilCon	0	0	0	0	0	0	0	0
Person	29,328	99,837	155,609	211,339	239,203	239,203	974,517	239,203
Overhd	2,222	7,199	16,123	23,004	29,771	29,771	108,090	29,771
Moving	303	304	300	303	0	0	1,210	0
Missio	0	0	0	0	0	0	0	0
Other	0	0	0	1,070	2,140	2,140	5,350	0
TOTAL	31,853	107,341	172,031	235,716	271,113	271,113	1,089,168	268,973

INPUT DATA REPORT (COBRA v5.08)
Data As Of 15:52 01/12/1995, Report Created 15:22 04/14/1995

Department : Air Force
Option Package : Kelly-Alt 4
Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY004.CBR
Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

INPUT SCREEN ONE - GENERAL SCENARIO INFORMATION

Model Year One : FY 1996

Model does Time-Phasing of Construction/Shutdown: No

Base Name	Strategy:
-----	-----
HILL, UT	Realignment
KELLY, TX	Deactivates in FY 1999
MCCLELLAN, CA	Realignment
ROBINS, GA	Realignment
TINKER, OK	Realignment
LACKLAND, TX	Realignment
BASE X	Realignment

Summary:

Assumptions: COMMISSION ALTERNATIVE 2 - SENSITIVITY ON POS ELIM & PHASING.
Kelly AFB closes, Air Intelligence Agency remains and is attached to Lackland AFB. AFRES C-5As and ANG F-16s cantoned at Lackland AFB. SA-ALC workload transferred to OC-ALC (89%), OO-ALC (10%) & WR-ALC (1%). Tenants with specified gaining locations moved to their respective sites. Remaining tenants and base population moved to Base X. Retain housing at Kelly, and build 93 MFH units at Tinker. Used updated manpower sheet from AF/PEP resulting in an add'l 44 eliminations. ELIMINATED 25% OF CIVS, 4 YR CL.

INPUT SCREEN TWO - DISTANCE TABLE

From Base:	To Base:	Distance:
-----	-----	-----
HILL, UT	KELLY, TX	1,363 mi
KELLY, TX	MCCLELLAN, CA	1,733 mi
KELLY, TX	ROBINS, GA	1,045 mi
KELLY, TX	TINKER, OK	488 mi
KELLY, TX	LACKLAND, TX	1 mi
KELLY, TX	BASE X	1,000 mi

INPUT SCREEN THREE - MOVEMENT TABLE

Transfers from KELLY, TX to HILL, UT

	1996	1997	1998	1999	2000	2001
	----	----	----	----	----	----
Officer Positions:	1	1	0	0	0	0
Enlisted Positions:	1	0	0	0	0	0
Civilian Positions:	128	129	128	129	0	0
Student Positions:	0	0	0	0	0	0
Missn Eqpt (tons):	0	0	0	0	0	0
Suppt Eqpt (tons):	0	0	0	0	0	0
Military Light Vehicles:	15	15	15	16	0	0
Heavy/Special Vehicles:	28	28	28	28	0	0

Transfers from KELLY, TX to ROBINS, GA

	1996	1997	1998	1999	2000	2001
	----	----	----	----	----	----
Officer Positions:	0	0	0	0	0	0
Enlisted Positions:	0	0	0	0	0	0
Civilian Positions:	13	13	13	13	0	0
Student Positions:	0	0	0	0	0	0
Missn Eqpt (tons):	0	0	0	0	0	0
Suppt Eqpt (tons):	0	0	0	0	0	0
Military Light Vehicles:	0	0	0	0	0	0
Heavy/Special Vehicles:	0	0	0	0	0	0

Department : Air Force
 Option Package : Kelly-Alt 4
 Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY004.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

INPUT SCREEN THREE - MOVEMENT TABLE

Transfers from KELLY, TX to TINKER, OK

	1996	1997	1998	1999	2000	2001
	----	----	----	----	----	----
Officer Positions:	4	4	4	3	0	0
Enlisted Positions:	2	2	2	3	0	0
Civilian Positions:	1,143	1,143	1,143	1,144	0	0
Student Positions:	0	0	0	0	0	0
Missn Eqpt (tons):	0	0	0	0	0	0
Suppt Eqpt (tons):	0	0	0	0	0	0
Military Light Vehicles:	124	124	124	125	0	0
Heavy/Special Vehicles:	227	227	227	226	0	0

Transfers from KELLY, TX to LACKLAND, TX

	1996	1997	1998	1999	2000	2001
	----	----	----	----	----	----
Officer Positions:	0	482	0	0	0	0
Enlisted Positions:	0	2,566	0	0	0	0
Civilian Positions:	0	1,973	0	0	0	0
Student Positions:	0	0	0	0	0	0
Missn Eqpt (tons):	0	0	0	0	0	0
Suppt Eqpt (tons):	0	0	0	0	0	0
Military Light Vehicles:	0	0	0	0	0	0
Heavy/Special Vehicles:	0	0	0	0	0	0

Transfers from KELLY, TX to BASE X

	1996	1997	1998	1999	2000	2001
	----	----	----	----	----	----
Officer Positions:	15	16	15	16	0	0
Enlisted Positions:	170	171	170	171	0	0
Civilian Positions:	489	489	489	488	0	0
Student Positions:	0	0	0	0	0	0
Missn Eqpt (tons):	0	0	0	0	0	0
Suppt Eqpt (tons):	0	0	0	0	0	0
Military Light Vehicles:	0	0	0	0	0	0
Heavy/Special Vehicles:	0	0	0	0	0	0

INPUT SCREEN FOUR - STATIC BASE INFORMATION

Name: HILL, UT

Total Officer Employees:	617	RPMA Non-Payroll (\$K/Year):	6,020
Total Enlisted Employees:	3,949	Communications (\$K/Year):	2,402
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	16,024
Total Civilian Employees:	8,691	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	31.0%	Family Housing (\$K/Year):	9,588
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.91
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	13,772	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	0	Activity Code:	38
Enlisted VHA (\$/Month):	26		
Per Diem Rate (\$/Day):	98	Homeowner Assistance Program:	No
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

Department : Air Force
 Option Package : Kelly-Alt 4
 Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY004.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

INPUT SCREEN FOUR - STATIC BASE INFORMATION

Name: KELLY, TX

Total Officer Employees:	843	RPMA Non-Payroll (\$K/Year):	16,993
Total Enlisted Employees:	4,166	Communications (\$K/Year):	3,681
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	13,945
Total Civilian Employees:	14,095	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	14.0%	Family Housing (\$K/Year):	2,870
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.84
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	16,316	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	106	Activity Code:	43
Enlisted VHA (\$/Month):	80		
Per Diem Rate (\$/Day):	97	Homeowner Assistance Program:	Yes
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

Name: MCCLELLAN, CA

Total Officer Employees:	449	RPMA Non-Payroll (\$K/Year):	5,663
Total Enlisted Employees:	2,325	Communications (\$K/Year):	2,978
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	21,097
Total Civilian Employees:	8,882	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	32.0%	Family Housing (\$K/Year):	6,330
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	1.24
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	11,516	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	168	Activity Code:	58
Enlisted VHA (\$/Month):	126		
Per Diem Rate (\$/Day):	101	Homeowner Assistance Program:	No
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

Name: ROBINS, GA

Total Officer Employees:	739	RPMA Non-Payroll (\$K/Year):	6,147
Total Enlisted Employees:	3,269	Communications (\$K/Year):	3,887
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	21,001
Total Civilian Employees:	11,119	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	54.0%	Family Housing (\$K/Year):	6,225
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.85
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	13,709	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	56	Activity Code:	76
Enlisted VHA (\$/Month):	35		
Per Diem Rate (\$/Day):	69	Homeowner Assistance Program:	No
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

Name: TINKER, OK

Total Officer Employees:	1,430	RPMA Non-Payroll (\$K/Year):	3,616
Total Enlisted Employees:	5,995	Communications (\$K/Year):	6,714
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	26,012
Total Civilian Employees:	11,678	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	7.5%	Family Housing (\$K/Year):	3,068
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.90
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	14,607	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	16	Activity Code:	83
Enlisted VHA (\$/Month):	19		
Per Diem Rate (\$/Day):	77	Homeowner Assistance Program:	No
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

Department : Air Force
 Option Package : Kelly-Alt 4
 Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY004.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

INPUT SCREEN FOUR - STATIC BASE INFORMATION

Name: LACKLAND, TX

Total Officer Employees:	1,812	RPMA Non-Payroll (\$K/Year):	6,730
Total Enlisted Employees:	9,837	Communications (\$K/Year):	663
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	2,411
Total Civilian Employees:	2,728	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	21.0%	Family Housing (\$K/Year):	3,991
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.84
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	10,008	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	106	Activity Code:	46
Enlisted VHA (\$/Month):	80		
Per Diem Rate (\$/Day):	97	Homeowner Assistance Program:	No
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

Name: BASE X

Total Officer Employees:	739	RPMA Non-Payroll (\$K/Year):	6,147
Total Enlisted Employees:	3,269	Communications (\$K/Year):	3,887
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	21,001
Total Civilian Employees:	11,119	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	54.0%	Family Housing (\$K/Year):	6,225
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	1.00
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	13,709	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	56	Activity Code:	999999
Enlisted VHA (\$/Month):	35		
Per Diem Rate (\$/Day):	69	Homeowner Assistance Program:	No
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

INPUT SCREEN FIVE - DYNAMIC BASE INFORMATION

Name: HILL, UT

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	25%	25%	25%	25%	0%	0%
Shutdown Schedule (%):	25%	25%	25%	25%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0					Perc Family Housing ShutDown: 0.0%

Department : Air Force
 Option Package : Kelly-Alt 4
 Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY004.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

INPUT SCREEN FIVE - DYNAMIC BASE INFORMATION

Name: KELLY, TX

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	34,106	34,106	34,106	34,105	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	24,486	24,486	24,486	24,485	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	-1,070	-2,140	-2,140
Construction Schedule(%):	25%	25%	25%	25%	0%	0%
Shutdown Schedule (%):	25%	25%	25%	25%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	13,316					0.0%
						Perc Family Housing ShutDown:

Name: MCCLELLAN, CA

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	25%	25%	25%	25%	0%	0%
Shutdown Schedule (%):	25%	25%	25%	25%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0					0.0%
						Perc Family Housing ShutDown:

Name: ROBINS, GA

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	25%	25%	25%	25%	0%	0%
Shutdown Schedule (%):	25%	25%	25%	25%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0					0.0%
						Perc Family Housing ShutDown:

Department : Air Force
 Option Package : Kelly-Alt 4
 Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY004.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

INPUT SCREEN FIVE - DYNAMIC BASE INFORMATION

Name: TINKER, OK

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	25%	25%	25%	25%	0%	0%
Shutdown Schedule (%):	25%	25%	25%	25%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0	Perc Family Housing ShutDown:				0.0%

Name: LACKLAND, TX

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	100%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	100%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0	Perc Family Housing ShutDown:				0.0%

Name: BASE X

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	25%	25%	25%	25%	0%	0%
Shutdown Schedule (%):	25%	25%	25%	25%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0	Perc Family Housing ShutDown:				0.0%

Department : Air Force
 Option Package : Kelly-Alt 4
 Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY004.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

INPUT SCREEN SIX - BASE PERSONNEL INFORMATION

Name: HILL, UT

	1996	1997	1998	1999	2000	2001
Off Force Struc Change:	4	5	4	5	0	0
Enl Force Struc Change:	66	66	66	67	0	0
Civ Force Struc Change:	-176	-176	-176	-177	0	0
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	0	0	0	0	0	0
Enl Scenario Change:	0	0	0	0	0	0
Civ Scenario Change:	0	0	0	0	0	0
Off Change(No Sal Save):	0	0	0	0	0	0
Enl Change(No Sal Save):	0	0	0	0	0	0
Civ Change(No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

INPUT SCREEN SIX - BASE PERSONNEL INFORMATION

Name: KELLY, TX

	1996	1997	1998	1999	2000	2001
Off Force Struc Change:	-13	-13	-13	-13	0	0
Enl Force Struc Change:	-57	-57	-57	-58	0	0
Civ Force Struc Change:	-290	-290	-290	-291	0	0
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	-57	-58	-57	-58	0	0
Enl Scenario Change:	-170	-170	-170	-169	0	0
Civ Scenario Change:	-967	-967	-967	-966	0	0
Off Change(No Sal Save):	0	0	0	0	0	0
Enl Change(No Sal Save):	0	0	0	0	0	0
Civ Change(No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

Name: MCCLELLAN, CA

	1996	1997	1998	1999	2000	2001
Off Force Struc Change:	-3	-3	-3	-2	0	0
Enl Force Struc Change:	-46	-46	-46	-46	0	0
Civ Force Struc Change:	-83	-84	-83	-84	0	0
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	0	0	0	0	0	0
Enl Scenario Change:	0	0	0	0	0	0
Civ Scenario Change:	0	0	0	0	0	0
Off Change(No Sal Save):	0	0	0	0	0	0
Enl Change(No Sal Save):	0	0	0	0	0	0
Civ Change(No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

Name: ROBINS, GA

	1996	1997	1998	1999	2000	2001
Off Force Struc Change:	65	66	65	66	0	0
Enl Force Struc Change:	125	126	125	126	0	0
Civ Force Struc Change:	-312	-312	-312	-313	0	0
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	0	0	0	0	0	0
Enl Scenario Change:	0	0	0	0	0	0
Civ Scenario Change:	0	0	0	0	0	0
Off Change(No Sal Save):	0	0	0	0	0	0
Enl Change(No Sal Save):	0	0	0	0	0	0
Civ Change(No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

Department : Air Force
 Option Package : Kelly-Alt 4
 Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY004.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

INPUT SCREEN SIX - BASE PERSONNEL INFORMATION

Name: TINKER, OK

	1996	1997	1998	1999	2000	2001
Off Force Struc Change:	-38	-38	-38	-37	0	0
Enl Force Struc Change:	-17	-17	-17	-17	0	0
Civ Force Struc Change:	-182	-183	-182	-183	0	0
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	0	0	0	0	0	0
Enl Scenario Change:	0	0	0	0	0	0
Civ Scenario Change:	0	0	0	0	0	0
Off Change(No Sal Save):	0	0	0	0	0	0
Enl Change(No Sal Save):	0	0	0	0	0	0
Civ Change(No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

Name: BASE X

	1996	1997	1998	1999	2000	2001
Off Force Struc Change:	65	66	65	66	0	0
Enl Force Struc Change:	125	126	125	126	0	0
Civ Force Struc Change:	-312	-312	-312	-313	0	0
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	0	0	0	0	0	0
Enl Scenario Change:	0	0	0	0	0	0
Civ Scenario Change:	0	0	0	0	0	0
Off Change(No Sal Save):	0	0	0	0	0	0
Enl Change(No Sal Save):	0	0	0	0	0	0
Civ Change(No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

INPUT SCREEN SEVEN - BASE MILITARY CONSTRUCTION INFORMATION

Name: HILL, UT

Description	Categ	New MilCon	Rehab MilCon	Total Cost(\$K)
Cold Storage	MAINT	30,000	0	500

Name: TINKER, OK

Description	Categ	New MilCon	Rehab MilCon	Total Cost(\$K)
Bldg 214 GTE Test Fa	MAINT	12,950	0	647
Fuel/Air Fac	MAINT	5,200	0	1,048
Bldg 3902 Fuel Test	MAINT	16,000	0	1,632
Bldg 3703 Test Cell	OTHER	0	5,000	5,000
ALC C-5 Facilities	OTHER	326,000	0	52,111
MFH	FAMLQ	93	0	12,130
Renovate Test Cells	OTHER	0	0	8,700
New/Renovate Admin	OTHER	20,103	282,624	19,870

Name: LACKLAND, TX

Description	Categ	New MilCon	Rehab MilCon	Total Cost(\$K)
Utilities	OTHER	0	0	2,500
Security, Fencing	OTHER	0	0	500

Department : Air Force
 Option Package : Kelly-Alt 4
 Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY004.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

STANDARD FACTORS SCREEN ONE - PERSONNEL

Percent Officers Married:	76.80%	Civ Early Retire Pay Factor:	9.00%
Percent Enlisted Married:	66.90%	Priority Placement Service:	60.00%
Enlisted Housing MilCon:	80.00%	PPS Actions Involving PCS:	50.00%
Officer Salary(\$/Year):	78,668.00	Civilian PCS Costs (\$):	28,800.00
Off BAQ with Dependents(\$):	7,073.00	Civilian New Hire Cost(\$):	4,000.00
Enlisted Salary(\$/Year):	36,148.00	Nat Median Home Price(\$):	114,600.00
Enl BAQ with Dependents(\$):	5,162.00	Home Sale Reimburse Rate:	10.00%
Avg Unemploy Cost(\$/Week):	174.00	Max Home Sale Reimburs(\$):	22,385.00
Unemployment Eligibility(Weeks):	18	Home Purch Reimburse Rate:	5.00%
Civilian Salary(\$/Year):	46,642.00	Max Home Purch Reimburs(\$):	11,191.00
Civilian Turnover Rate:	15.00%	Civilian Homeowning Rate:	64.00%
Civilian Early Retire Rate:	10.00%	HAP Home Value Reimburse Rate:	22.90%
Civilian Regular Retire Rate:	5.00%	HAP Homeowner Receiving Rate:	5.00%
Civilian RIF Pay Factor:	39.00%	RSE Home Value Reimburse Rate:	0.00%
SF File Desc:	Depot Factors	RSE Homeowner Receiving Rate:	0.00%

STANDARD FACTORS SCREEN TWO - FACILITIES

RPMA Building SF Cost Index:	0.93	Rehab vs. New MilCon Cost:	0.00%
BOS Index (RPMA vs population):	0.54	Info Management Account:	0.00%
(Indices are used as exponents)		MilCon Design Rate:	0.00%
Program Management Factor:	10.00%	MilCon SIOH Rate:	0.00%
Caretaker Admin(SF/Care):	162.00	MilCon Contingency Plan Rate:	0.00%
Mothball Cost (\$/SF):	1.25	MilCon Site Preparation Rate:	0.00%
Avg Bachelor Quarters(SF):	256.00	Discount Rate for NPV.RPT/ROI:	2.75%
Avg Family Quarters(SF):	1,320.00	Inflation Rate for NPV.RPT/ROI:	0.00%
APPDET.RPT Inflation Rates:			
1996: 0.00% 1997: 2.90% 1998: 3.00%		1999: 3.00% 2000: 3.00% 2001: 3.00%	

STANDARD FACTORS SCREEN THREE - TRANSPORTATION

Material/Assigned Person(Lb):	710	Equip Pack & Crate(\$/Ton):	284.00
HHG Per Off Family (Lb):	14,500.00	Mil Light Vehicle(\$/Mile):	0.43
HHG Per Enl Family (Lb):	9,000.00	Heavy/Spec Vehicle(\$/Mile):	1.40
HHG Per Mil Single (Lb):	6,400.00	POV Reimbursement(\$/Mile):	0.18
HHG Per Civilian (Lb):	18,000.00	Avg Mil Tour Length (Years):	4.10
Total HHG Cost (\$/100Lb):	35.00	Routine PCS(\$/Pers/Tour):	6,437.00
Air Transport (\$/Pass Mile):	0.20	One-Time Off PCS Cost(\$):	9,142.00
Misc Exp (\$/Direct Employ):	700.00	One-Time Enl PCS Cost(\$):	5,761.00

STANDARD FACTORS SCREEN FOUR - MILITARY CONSTRUCTION

Category	UM	\$/UM	Category	UM	\$/UM
Horizontal	(SY)	0	Optional Category A	()	0
Waterfront	(LF)	0	Optional Category B	()	0
Air Operations	(SF)	0	Optional Category C	()	0
Operational	(SF)	0	Optional Category D	()	0
Administrative	(SF)	0	Optional Category E	()	0
School Buildings	(SF)	0	Optional Category F	()	0
Maintenance Shops	(SF)	0	Optional Category G	()	0
Bachelor Quarters	(SF)	0	Optional Category H	()	0
Family Quarters	(EA)	0	Optional Category I	()	0
Covered Storage	(SF)	0	Optional Category J	()	0
Dining Facilities	(SF)	0	Optional Category K	()	0
Recreation Facilities	(SF)	0	Optional Category L	()	0
Communications Facil	(SF)	0	Optional Category M	()	0
Shipyards Maintenance	(SF)	0	Optional Category N	()	0
RDT & E Facilities	(SF)	0	Optional Category O	()	0
POL Storage	(BL)	0	Optional Category P	()	0
Ammunition Storage	(SF)	0	Optional Category Q	()	0
Medical Facilities	(SF)	0	Optional Category R	()	0
Environmental	()	0			

Department : Air Force
Option Package : Kelly-Alt 4
Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY004.CBR
Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

EXPLANATORY NOTES (INPUT SCREEN NINE)

1. Changed phasing of eliminations and movements from 6 yrs to 4 yrs.
2. Changed profile from 5,10,25,30,25,5 to 25,25,25,25.
3. Changed milcon construction and facilities shutdown schedules from 6 yrs to 4 yrs. Profile to 25% per year.
4. Left Kelly to Lackland transfer 100% transfer in year 2.
5. Force structure changes moved from year 2 to 4 yrs at 25% per year.
6. Changed 1-Time Unique and 1-Time Moving Costs from occurring over 6 yrs to occurring over 4 yrs at 25% per year of total cost.
7. Changed personnel eliminated from 7% to 25%.
8. Changed total officers eliminated from 60 to 230.
9. Changed total enlisted eliminated from 177 to 679.
10. Changed total civilians eliminated from 1008 to 3867.
11. This run represents a change from the Baseline case which is the Air Force "Decision" COBRA on a full closure of Kelly. Tenants are moved in their entirety with exception of enlisted from Kelly to Lackland of 2796 to 2566.

Department : Air Force
 Option Package : Kelly-Alt 3
 Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY003.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

Starting Year : 1996
 Final Year : 1999
 ROI Year : 2001 (2 Years)

NPV in 2015(\$K):-1,522,636
 1-Time Cost(\$K): 571,312

Net Costs (\$K) Constant Dollars	1996		1997		1998		1999		2000		2001		Total	Beyond
	1996	1997	1998	1999	2000	2001	Total	Beyond						
MilCon	28,409	25,409	25,409	25,409	0	0	104,638	0	104,638	0	0	104,638	0	
Person	-8,927	-42,633	-75,234	-107,824	-133,069	-133,069	-500,756	-133,069	-133,069	-133,069	-133,069	-500,756	-133,069	
Overhd	5,686	3,252	-3,703	-8,380	-20,311	-20,311	-43,766	-20,311	-20,311	-20,311	-20,311	-43,766	-20,311	
Moving	66,174	67,494	66,179	66,203	0	0	266,051	0	0	0	0	266,051	0	
Missio	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other	36,189	36,191	36,190	35,120	-2,140	-2,140	139,411	0	0	0	0	139,411	0	
TOTAL	127,532	89,714	48,842	10,528	-155,520	-155,520	-34,423	-153,380	-155,520	-155,520	-155,520	-34,423	-153,380	

	1996	1997	1998	1999	2000	2001	Total
POSITIONS ELIMINATED							
Off	35	34	35	34	0	0	138
Enl	102	102	102	101	0	0	407
Civ	580	580	580	580	0	0	2,320
TOT	717	716	717	715	0	0	2,865

	1996	1997	1998	1999	2000	2001	Total
POSITIONS REALIGNED							
Off	41	525	42	45	0	0	653
Enl	182	2,980	182	186	0	0	3,530
Stu	0	0	0	0	0	0	0
Civ	2,160	4,133	2,160	2,159	0	0	10,612
TOT	2,383	7,638	2,384	2,390	0	0	14,795

Summary:

Assumptions: COMMISSION ALTERNATIVE 2 - SENSITIVITY ON POS ELIM & PHASING.
 Kelly AFB closes, Air Intelligence Agency remains and is attached to Lackland AFB. AFRES C-5As and ANG F-16s cantoned at Lackland AFB.
 SA-ALC workload transferred to OC-ALC (89%), OO-ALC (10%) & WR-ALC (1%).
 Tenants with specified gaining locations moved to their respective sites.
 Remaining tenants and base population moved to Base X. Retain housing at Kelly, and build 93 MFH units at Tinker. Used updated manpower sheet from AF/PEP resulting in an add'l 44 eliminations. ELIMINATED 15% OF CIVS, 4 YR CL.

Department : Air Force
 Option Package : Kelly-Alt 3
 Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY003.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

	Costs (\$K) Constant Dollars						Total	Beyond
	1996	1997	1998	1999	2000	2001		
MilCon	28,409	25,409	25,409	25,409	0	0	104,638	0
Person	9,418	24,794	25,647	26,492	17,936	17,936	122,223	17,936
Overhd	7,664	10,150	12,109	14,069	9,460	9,460	62,912	9,460
Moving	66,524	67,851	66,531	66,565	0	0	267,472	0
Missio	0	0	0	0	0	0	0	0
Other	36,189	36,191	36,190	36,190	0	0	144,761	0
TOTAL	148,206	164,395	165,886	168,726	27,396	27,396	702,006	27,396

	Savings (\$K) Constant Dollars						Total	Beyond
	1996	1997	1998	1999	2000	2001		
MilCon	0	0	0	0	0	0	0	0
Person	18,345	67,427	100,881	134,316	151,005	151,005	622,979	151,005
Overhd	1,979	6,898	15,811	22,449	29,771	29,771	106,679	29,771
Moving	350	356	352	363	0	0	1,421	0
Missio	0	0	0	0	0	0	0	0
Other	0	0	0	1,070	2,140	2,140	5,350	0
TOTAL	20,674	74,681	117,044	158,198	182,916	182,916	736,429	180,776

Department : Air Force
 Option Package : Kelly-Alt 3
 Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY003.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

INPUT SCREEN THREE - MOVEMENT TABLE

Transfers from KELLY, TX to TINKER, OK

	1996	1997	1998	1999	2000	2001
	----	----	----	----	----	----
Officer Positions:	24	24	24	25	0	0
Enlisted Positions:	11	12	11	12	0	0
Civilian Positions:	1,487	1,487	1,487	1,488	0	0
Student Positions:	0	0	0	0	0	0
Missn Eqpt (tons):	0	0	0	0	0	0
Suppt Eqpt (tons):	0	0	0	0	0	0
Military Light Vehicles:	124	124	124	125	0	0
Heavy/Special Vehicles:	227	227	227	226	0	0

Transfers from KELLY, TX to LACKLAND, TX

	1996	1997	1998	1999	2000	2001
	----	----	----	----	----	----
Officer Positions:	0	482	0	0	0	0
Enlisted Positions:	0	2,796	0	0	0	0
Civilian Positions:	0	1,973	0	0	0	0
Student Positions:	0	0	0	0	0	0
Missn Eqpt (tons):	0	0	0	0	0	0
Suppt Eqpt (tons):	0	0	0	0	0	0
Military Light Vehicles:	0	0	0	0	0	0
Heavy/Special Vehicles:	0	0	0	0	0	0

Transfers from KELLY, TX to BASE X

	1996	1997	1998	1999	2000	2001
	----	----	----	----	----	----
Officer Positions:	15	16	15	16	0	0
Enlisted Positions:	170	171	170	171	0	0
Civilian Positions:	489	489	489	488	0	0
Student Positions:	0	0	0	0	0	0
Missn Eqpt (tons):	0	0	0	0	0	0
Suppt Eqpt (tons):	0	0	0	0	0	0
Military Light Vehicles:	0	0	0	0	0	0
Heavy/Special Vehicles:	0	0	0	0	0	0

INPUT SCREEN FOUR - STATIC BASE INFORMATION

Name: HILL, UT

Total Officer Employees:	617	RPMA Non-Payroll (\$K/Year):	6,020
Total Enlisted Employees:	3,949	Communications (\$K/Year):	2,402
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	16,024
Total Civilian Employees:	8,691	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	31.0%	Family Housing (\$K/Year):	9,588
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.91
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	13,772	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	0	Activity Code:	38
Enlisted VHA (\$/Month):	26		
Per Diem Rate (\$/Day):	98	Homeowner Assistance Program:	No
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

Department : Air Force
 Option Package : Kelly-Alt 3
 Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY003.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

INPUT SCREEN FOUR - STATIC BASE INFORMATION

Name: KELLY, TX

Total Officer Employees:	843	RPMA Non-Payroll (\$K/Year):	16,993
Total Enlisted Employees:	4,166	Communications (\$K/Year):	3,681
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	13,945
Total Civilian Employees:	14,095	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	14.0%	Family Housing (\$K/Year):	2,870
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.84
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	16,316	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	106	Activity Code:	43
Enlisted VHA (\$/Month):	80		
Per Diem Rate (\$/Day):	97	Homeowner Assistance Program:	Yes
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

Name: MCCLELLAN, CA

Total Officer Employees:	449	RPMA Non-Payroll (\$K/Year):	5,663
Total Enlisted Employees:	2,325	Communications (\$K/Year):	2,978
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	21,097
Total Civilian Employees:	8,882	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	32.0%	Family Housing (\$K/Year):	6,330
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	1.24
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	11,516	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	168	Activity Code:	58
Enlisted VHA (\$/Month):	126		
Per Diem Rate (\$/Day):	101	Homeowner Assistance Program:	No
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

Name: ROBINS, GA

Total Officer Employees:	739	RPMA Non-Payroll (\$K/Year):	6,147
Total Enlisted Employees:	3,269	Communications (\$K/Year):	3,887
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	21,001
Total Civilian Employees:	11,119	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	54.0%	Family Housing (\$K/Year):	6,225
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.85
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	13,709	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	56	Activity Code:	76
Enlisted VHA (\$/Month):	35		
Per Diem Rate (\$/Day):	69	Homeowner Assistance Program:	No
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

Name: TINKER, OK

Total Officer Employees:	1,430	RPMA Non-Payroll (\$K/Year):	3,616
Total Enlisted Employees:	5,995	Communications (\$K/Year):	6,714
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	26,012
Total Civilian Employees:	11,678	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	7.5%	Family Housing (\$K/Year):	3,068
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.90
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	14,607	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	16	Activity Code:	83
Enlisted VHA (\$/Month):	19		
Per Diem Rate (\$/Day):	77	Homeowner Assistance Program:	No
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

Department : Air Force
 Option Package : Kelly-Alt 3
 Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY003.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

INPUT SCREEN FOUR - STATIC BASE INFORMATION

Name: LACKLAND, TX

Total Officer Employees:	1,812	RPMA Non-Payroll (\$K/Year):	6,730
Total Enlisted Employees:	9,837	Communications (\$K/Year):	663
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	2,411
Total Civilian Employees:	2,728	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	21.0%	Family Housing (\$K/Year):	3,991
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.84
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	10,008	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	106	Activity Code:	46
Enlisted VHA (\$/Month):	80	Homeowner Assistance Program:	No
Per Diem Rate (\$/Day):	97	Unique Activity Information:	No
Freight Cost (\$/Ton/Mile):	0.07		

Name: BASE X

Total Officer Employees:	739	RPMA Non-Payroll (\$K/Year):	6,147
Total Enlisted Employees:	3,269	Communications (\$K/Year):	3,887
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	21,001
Total Civilian Employees:	11,119	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	54.0%	Family Housing (\$K/Year):	6,225
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	1.00
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	13,709	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	56	Activity Code:	999999
Enlisted VHA (\$/Month):	35	Homeowner Assistance Program:	No
Per Diem Rate (\$/Day):	69	Unique Activity Information:	No
Freight Cost (\$/Ton/Mile):	0.07		

INPUT SCREEN FIVE - DYNAMIC BASE INFORMATION

Name: HILL, UT

	1996	1997	1998	1999	2000	2001
	----	----	----	----	----	----
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqrd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	25%	25%	25%	25%	0%	0%
Shutdown Schedule (%):	25%	25%	25%	25%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0		Perc Family Housing ShutDown:		0.0%	

Department : Air Force
 Option Package : Kelly-Alt 3
 Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY003.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

INPUT SCREEN FIVE - DYNAMIC BASE INFORMATION

Name: TINKER, OK

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	25%	25%	25%	25%	0%	0%
Shutdown Schedule (%):	25%	25%	25%	25%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0					0.0%
						Perc Family Housing ShutDown:

Name: LACKLAND, TX

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	100%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	100%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0					0.0%
						Perc Family Housing ShutDown:

Name: BASE X

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	25%	25%	25%	25%	0%	0%
Shutdown Schedule (%):	25%	25%	25%	25%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0					0.0%
						Perc Family Housing ShutDown:

Department : Air Force
 Option Package : Kelly-Alt 3
 Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY003.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

INPUT SCREEN SIX - BASE PERSONNEL INFORMATION

Name: HILL, UT

	1996	1997	1998	1999	2000	2001
Off Force Struc Change:	4	5	4	5	0	0
Enl Force Struc Change:	66	66	66	67	0	0
Civ Force Struc Change:	-176	-176	-176	-177	0	0
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	0	0	0	0	0	0
Enl Scenario Change:	0	0	0	0	0	0
Civ Scenario Change:	0	0	0	0	0	0
Off Change(No Sal Save):	0	0	0	0	0	0
Enl Change(No Sal Save):	0	0	0	0	0	0
Civ Change(No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

INPUT SCREEN SIX - BASE PERSONNEL INFORMATION

Name: KELLY, TX

	1996	1997	1998	1999	2000	2001
Off Force Struc Change:	-13	-13	-13	-13	0	0
Enl Force Struc Change:	-57	-57	-57	-58	0	0
Civ Force Struc Change:	-290	-290	-290	-291	0	0
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	-35	-34	-35	-34	0	0
Enl Scenario Change:	-102	-102	-102	-101	0	0
Civ Scenario Change:	-580	-580	-580	-580	0	0
Off Change(No Sal Save):	0	0	0	0	0	0
Enl Change(No Sal Save):	0	0	0	0	0	0
Civ Change(No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

Name: MCCLELLAN, CA

	1996	1997	1998	1999	2000	2001
Off Force Struc Change:	-3	-3	-3	-2	0	0
Enl Force Struc Change:	-46	-46	-46	-46	0	0
Civ Force Struc Change:	-83	-84	-83	-84	0	0
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	0	0	0	0	0	0
Enl Scenario Change:	0	0	0	0	0	0
Civ Scenario Change:	0	0	0	0	0	0
Off Change(No Sal Save):	0	0	0	0	0	0
Enl Change(No Sal Save):	0	0	0	0	0	0
Civ Change(No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

Name: ROBINS, GA

	1996	1997	1998	1999	2000	2001
Off Force Struc Change:	65	66	65	66	0	0
Enl Force Struc Change:	125	126	125	126	0	0
Civ Force Struc Change:	-312	-312	-312	-313	0	0
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	0	0	0	0	0	0
Enl Scenario Change:	0	0	0	0	0	0
Civ Scenario Change:	0	0	0	0	0	0
Off Change(No Sal Save):	0	0	0	0	0	0
Enl Change(No Sal Save):	0	0	0	0	0	0
Civ Change(No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

Department : Air Force
 Option Package : Kelly-Alt 3
 Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY003.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

INPUT SCREEN SIX - BASE PERSONNEL INFORMATION

Name: TINKER, OK

	1996	1997	1998	1999	2000	2001
Off Force Struc Change:	-38	-38	-38	-37	0	0
Enl Force Struc Change:	-17	-17	-17	-17	0	0
Civ Force Struc Change:	-182	-183	-182	-183	0	0
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	0	0	0	0	0	0
Enl Scenario Change:	0	0	0	0	0	0
Civ Scenario Change:	0	0	0	0	0	0
Off Change(No Sal Save):	0	0	0	0	0	0
Enl Change(No Sal Save):	0	0	0	0	0	0
Civ Change(No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

Name: BASE X

	1996	1997	1998	1999	2000	2001
Off Force Struc Change:	65	66	65	66	0	0
Enl Force Struc Change:	125	126	125	126	0	0
Civ Force Struc Change:	-312	-312	-312	-313	0	0
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	0	0	0	0	0	0
Enl Scenario Change:	0	0	0	0	0	0
Civ Scenario Change:	0	0	0	0	0	0
Off Change(No Sal Save):	0	0	0	0	0	0
Enl Change(No Sal Save):	0	0	0	0	0	0
Civ Change(No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

INPUT SCREEN SEVEN - BASE MILITARY CONSTRUCTION INFORMATION

Name: HILL, UT

Description	Categ	New MilCon	Rehab MilCon	Total Cost(\$K)
Cold Storage	MAINT	30,000	0	500

Name: TINKER, OK

Description	Categ	New MilCon	Rehab MilCon	Total Cost(\$K)
Bldg 214 GTE Test Fa	MAINT	12,950	0	647
Fuel/Air Fac	MAINT	5,200	0	1,048
Bldg 3902 Fuel Test	MAINT	16,000	0	1,632
Bldg 3703 Test Cell	OTHER	0	5,000	5,000
ALC C-5 Facilities	OTHER	326,000	0	52,111
MFH	FAMLQ	93	0	12,130
Renovate Test Cells	OTHER	0	0	8,700
New/Renovate Admin	OTHER	20,103	282,624	19,870

Name: LACKLAND, TX

Description	Categ	New MilCon	Rehab MilCon	Total Cost(\$K)
Utilities	OTHER	0	0	2,500
Security, Fencing	OTHER	0	0	500

Department : Air Force
 Option Package : Kelly-Alt 3
 Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY003.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

STANDARD FACTORS SCREEN ONE - PERSONNEL

Percent Officers Married:	76.80%	Civ Early Retire Pay Factor:	9.00%
Percent Enlisted Married:	66.90%	Priority Placement Service:	60.00%
Enlisted Housing MilCon:	80.00%	PPS Actions Involving PCS:	50.00%
Officer Salary(\$/Year):	78,668.00	Civilian PCS Costs (\$):	28,800.00
Off BAQ with Dependents(\$):	7,073.00	Civilian New Hire Cost(\$):	4,000.00
Enlisted Salary(\$/Year):	36,148.00	Nat Median Home Price(\$):	114,600.00
Enl BAQ with Dependents(\$):	5,162.00	Home Sale Reimburse Rate:	10.00%
Avg Unemploy Cost(\$/Week):	174.00	Max Home Sale Reimburs(\$):	22,385.00
Unemployment Eligibility(Weeks):	18	Home Purch Reimburse Rate:	5.00%
Civilian Salary(\$/Year):	46,642.00	Max Home Purch Reimburs(\$):	11,191.00
Civilian Turnover Rate:	15.00%	Civilian Homeowning Rate:	64.00%
Civilian Early Retire Rate:	10.00%	HAP Home Value Reimburse Rate:	22.90%
Civilian Regular Retire Rate:	5.00%	HAP Homeowner Receiving Rate:	5.00%
Civilian RIF Pay Factor:	39.00%	RSE Home Value Reimburse Rate:	0.00%
SF File Desc:	Depot Factors	RSE Homeowner Receiving Rate:	0.00%

STANDARD FACTORS SCREEN TWO - FACILITIES

RPMA Building SF Cost Index:	0.93	Rehab vs. New MilCon Cost:	0.00%
BOS Index (RPMA vs population):	0.54	Info Management Account:	0.00%
(Indices are used as exponents)		MilCon Design Rate:	0.00%
Program Management Factor:	10.00%	MilCon SIOH Rate:	0.00%
Caretaker Admin(SF/Care):	162.00	MilCon Contingency Plan Rate:	0.00%
Mothball Cost (\$/SF):	1.25	MilCon Site Preparation Rate:	0.00%
Avg Bachelor Quarters(SF):	256.00	Discount Rate for NPV.RPT/ROI:	2.75%
Avg Family Quarters(SF):	1,320.00	Inflation Rate for NPV.RPT/ROI:	0.00%
APPDET.RPT Inflation Rates:			
1996: 0.00% 1997: 2.90% 1998: 3.00%		1999: 3.00% 2000: 3.00% 2001: 3.00%	

STANDARD FACTORS SCREEN THREE - TRANSPORTATION

Material/Assigned Person(Lb):	710	Equip Pack & Crate(\$/Ton):	284.00
HHG Per Off Family (Lb):	14,500.00	Mil Light Vehicle(\$/Mile):	0.43
HHG Per Enl Family (Lb):	9,000.00	Heavy/Spec Vehicle(\$/Mile):	1.40
HHG Per Mil Single (Lb):	6,400.00	POV Reimbursement(\$/Mile):	0.18
HHG Per Civilian (Lb):	18,000.00	Avg Mil Tour Length (Years):	4.10
Total HHG Cost (\$/100Lb):	35.00	Routine PCS(\$/Pers/Tour):	6,437.00
Air Transport (\$/Pass Mile):	0.20	One-Time Off PCS Cost(\$):	9,142.00
Misc Exp (\$/Direct Employ):	700.00	One-Time Enl PCS Cost(\$):	5,761.00

STANDARD FACTORS SCREEN FOUR - MILITARY CONSTRUCTION

Category	UM	\$/UM	Category	UM	\$/UM
-----	--	----	-----	--	----
Horizontal	(SY)	0	Optional Category A	()	0
Waterfront	(LF)	0	Optional Category B	()	0
Air Operations	(SF)	0	Optional Category C	()	0
Operational	(SF)	0	Optional Category D	()	0
Administrative	(SF)	0	Optional Category E	()	0
School Buildings	(SF)	0	Optional Category F	()	0
Maintenance Shops	(SF)	0	Optional Category G	()	0
Bachelor Quarters	(SF)	0	Optional Category H	()	0
Family Quarters	(EA)	0	Optional Category I	()	0
Covered Storage	(SF)	0	Optional Category J	()	0
Dining Facilities	(SF)	0	Optional Category K	()	0
Recreation Facilities	(SF)	0	Optional Category L	()	0
Communications Facil	(SF)	0	Optional Category M	()	0
Shipyard Maintenance	(SF)	0	Optional Category N	()	0
RDT & E Facilities	(SF)	0	Optional Category O	()	0
POL Storage	(BL)	0	Optional Category P	()	0
Ammunition Storage	(SF)	0	Optional Category Q	()	0
Medical Facilities	(SF)	0	Optional Category R	()	0
Environmental	()	0			

Department : Air Force
Option Package : Kelly-Alt 3
Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY003.CBR
Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

EXPLANATORY NOTES (INPUT SCREEN NINE)

1. Changed phasing of eliminations and movements from 6 yrs to 4 yrs.
2. Changed profile from 5,10,25,30,25,5 to 25,25,25,25.
3. Changed milcon construction and facilities shutdown schedules from 6 yrs to 4 yrs. Profile to 25% per year.
4. Left Kelly to Lackland transfer 100% transfer in year 2.
5. Force structure changes moved from year 2 to 4 yrs at 25% per year.
6. Changed 1-Time Unique and 1-Time Moving Costs from occurring over 6 yrs to occurring over 4 yrs at 25% per year of total cost.

Department : Air Force
 Option Package : Kelly-Alt 2
 Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY002.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

Starting Year : 1996
 Final Year : 2001
 ROI Year : 2005 (4 Years)

NPV in 2015(\$K):-1,102,157
 1-Time Cost(\$K): 571,999

Net Costs (\$K)	Constant Dollars						Total	Beyond
	1996	1997	1998	1999	2000	2001		
MilCon	26,377	12,196	16,262	22,360	11,180	16,262	104,638	0
Person	1,214	-349	4,443	6,840	6,367	-58,626	-40,111	-134,042
Overhd	1,806	5,127	-485	-842	-2,614	-11,342	-8,349	-20,309
Moving	12,104	25,567	60,610	72,713	60,613	34,418	266,025	0
Missio	0	0	0	0	0	0	0	0
Other	5,644	11,290	28,225	32,799	26,085	35,366	139,411	0
TOTAL	77,146	53,832	109,054	133,871	101,631	16,078	461,613	-154,351

	1996	1997	1998	1999	2000	2001	Total
POSITIONS ELIMINATED							
Off	0	0	0	0	0	138	138
Enl	0	0	0	0	0	407	407
Civ	0	0	0	0	0	2,320	2,320
TOT	0	0	0	0	0	2,865	2,865

	1996	1997	1998	1999	2000	2001	Total
POSITIONS REALIGNED							
Off	9	499	44	52	44	5	653
Enl	36	2,870	184	221	185	34	3,530
Stu	0	0	0	0	0	0	0
Civ	432	2,838	2,160	2,592	2,160	430	10,612
TOT	477	6,207	2,388	2,865	2,389	469	14,795

Summary:

Assumptions: COMMISSION ALTERNATIVE 2 - SENSITIVITY ON POS ELIMINATED.
 Kelly AFB closes, Air Intelligence Agency remains and is attached to Lackland AFB. AFRES C-5As and ANG F-16s cantoned at Lackland AFB.
 SA-ALC workload transferred to OC-ALC (89%), OO-ALC (10%) & WR-ALC (1%).
 Tenants with specified gaining locations moved to their respective sites.
 Remaining tenants and base population moved to Base X. Retain housing at Kelly, and build 93 MFH units at Tinker. Used updated manpower sheet from AF/PEP resulting in an add'l 44 eliminations. ELIMINATED 15% OF CIVILIANS.

Department : Air Force
 Option Package : Kelly-Alt 2
 Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY002.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

Costs (\$K) Constant Dollars

	1996	1997	1998	1999	2000	2001	Total	Beyond
	----	----	----	----	----	----	----	----
MilCon	26,377	12,196	16,262	22,360	11,180	16,262	104,638	0
Person	1,510	17,757	22,673	25,071	24,598	26,493	118,102	17,966
Overhd	1,806	6,855	6,980	10,037	12,987	14,204	52,869	9,460
Moving	12,175	25,710	60,967	73,142	60,972	34,479	267,446	0
Missio	0	0	0	0	0	0	0	0
Other	5,644	11,290	28,225	33,869	28,225	37,506	144,761	0
TOTAL	47,512	73,808	135,108	164,479	137,962	128,945	687,815	27,427

Savings (\$K) Constant Dollars

	1996	1997	1998	1999	2000	2001	Total	Beyond
	----	----	----	----	----	----	----	----
MilCon	0	0	0	0	0	0	0	0
Person	295	18,105	18,231	18,231	18,231	85,120	158,213	152,009
Overhd	0	1,727	7,465	10,879	15,601	25,546	61,218	29,769
Moving	71	143	358	429	359	61	1,421	0
Missio	0	0	0	0	0	0	0	0
Other	0	0	0	1,070	2,140	2,140	5,350	0
TOTAL	366	19,976	26,053	30,608	36,331	112,867	226,202	181,778

INPUT DATA REPORT (COBRA v5.08)
Data As Of 15:52 01/12/1995, Report Created 13:30 04/14/1995

Department : Air Force
Option Package : Kelly-Alt 2
Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY002.CBR
Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

INPUT SCREEN ONE - GENERAL SCENARIO INFORMATION

Model Year One : FY 1996

Model does Time-Phasing of Construction/Shutdown: No

Base Name	Strategy:
-----	-----
HILL, UT	Realignment
KELLY, TX	Deactivates in FY 2001
MCCLELLAN, CA	Realignment
ROBINS, GA	Realignment
TINKER, OK	Realignment
LACKLAND, TX	Realignment
BASE X	Realignment

Summary:

Assumptions: COMMISSION ALTERNATIVE 2 - SENSITIVITY ON POS ELIMINATED.
Kelly AFB closes, Air Intelligence Agency remains and is attached to Lackland AFB. AFRES C-5As and ANG F-16s cantoned at Lackland AFB. SA-ALC workload transferred to OC-ALC (89%), OO-ALC (10%) & WR-ALC (1%). Tenants with specified gaining locations moved to their respective sites. Remaining tenants and base population moved to Base X. Retain housing at Kelly, and build 93 MFH units at Tinker. Used updated manpower sheet from AF/PEP resulting in an add'l 44 eliminations. ELIMINATED 15% OF CIVILIANS.

INPUT SCREEN TWO - DISTANCE TABLE

From Base:	To Base:	Distance:
-----	-----	-----
HILL, UT	KELLY, TX	1,363 mi
KELLY, TX	MCCLELLAN, CA	1,733 mi
KELLY, TX	ROBINS, GA	1,045 mi
KELLY, TX	TINKER, OK	488 mi
KELLY, TX	LACKLAND, TX	1 mi
KELLY, TX	BASE X	1,000 mi

INPUT SCREEN THREE - MOVEMENT TABLE

Transfers from KELLY, TX to HILL, UT

	1996	1997	1998	1999	2000	2001
	----	----	----	----	----	----
Officer Positions:	1	1	3	4	2	0
Enlisted Positions:	0	1	1	2	1	0
Civilian Positions:	33	67	167	200	167	34
Student Positions:	0	0	0	0	0	0
Missn Eqpt (tons):	0	0	0	0	0	0
Suppt Eqpt (tons):	0	0	0	0	0	0
Military Light Vehicles:	3	6	15	18	16	3
Heavy/Special Vehicles:	6	11	28	34	28	5

Transfers from KELLY, TX to ROBINS, GA

	1996	1997	1998	1999	2000	2001
	----	----	----	----	----	----
Officer Positions:	0	0	0	0	1	0
Enlisted Positions:	0	0	0	0	1	0
Civilian Positions:	3	7	17	20	17	3
Student Positions:	0	0	0	0	0	0
Missn Eqpt (tons):	0	0	0	0	0	0
Suppt Eqpt (tons):	0	0	0	0	0	0
Military Light Vehicles:	0	0	0	0	0	0
Heavy/Special Vehicles:	0	0	0	0	0	0

Department : Air Force
 Option Package : Kelly-Alt 2
 Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY002.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

INPUT SCREEN THREE - MOVEMENT TABLE

Transfers from KELLY, TX to TINKER, OK

	1996	1997	1998	1999	2000	2001
Officer Positions:	5	10	25	29	25	3
Enlisted Positions:	2	5	12	14	12	1
Civilian Positions:	298	595	1,487	1,785	1,487	297
Student Positions:	0	0	0	0	0	0
Missn Eqpt (tons):	0	0	0	0	0	0
Suppt Eqpt (tons):	0	0	0	0	0	0
Military Light Vehicles:	25	50	124	149	124	25
Heavy/Special Vehicles:	45	91	227	272	227	45

Transfers from KELLY, TX to LACKLAND, TX

	1996	1997	1998	1999	2000	2001
Officer Positions:	0	482	0	0	0	0
Enlisted Positions:	0	2,796	0	0	0	0
Civilian Positions:	0	1,973	0	0	0	0
Student Positions:	0	0	0	0	0	0
Missn Eqpt (tons):	0	0	0	0	0	0
Suppt Eqpt (tons):	0	0	0	0	0	0
Military Light Vehicles:	0	0	0	0	0	0
Heavy/Special Vehicles:	0	0	0	0	0	0

Transfers from KELLY, TX to BASE X

	1996	1997	1998	1999	2000	2001
Officer Positions:	3	6	16	19	16	2
Enlisted Positions:	34	68	171	205	171	33
Civilian Positions:	98	196	489	587	489	96
Student Positions:	0	0	0	0	0	0
Missn Eqpt (tons):	0	0	0	0	0	0
Suppt Eqpt (tons):	0	0	0	0	0	0
Military Light Vehicles:	0	0	0	0	0	0
Heavy/Special Vehicles:	0	0	0	0	0	0

INPUT SCREEN FOUR - STATIC BASE INFORMATION

Name: HILL, UT

Total Officer Employees:	617	RPMA Non-Payroll (\$K/Year):	6,020
Total Enlisted Employees:	3,949	Communications (\$K/Year):	2,402
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	16,024
Total Civilian Employees:	8,691	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	31.0%	Family Housing (\$K/Year):	9,588
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.91
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	13,772	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	0	Activity Code:	38
Enlisted VHA (\$/Month):	26		
Per Diem Rate (\$/Day):	98	Homeowner Assistance Program:	No
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

Department : Air Force
 Option Package : Kelly-Alt 2
 Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY002.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

INPUT SCREEN FOUR - STATIC BASE INFORMATION

Name: KELLY, TX

Total Officer Employees:	843	RPMA Non-Payroll (\$K/Year):	16,993
Total Enlisted Employees:	4,166	Communications (\$K/Year):	3,681
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	13,945
Total Civilian Employees:	14,095	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	14.0%	Family Housing (\$K/Year):	2,870
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.84
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	16,316	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	106	Activity Code:	43
Enlisted VHA (\$/Month):	80		
Per Diem Rate (\$/Day):	97	Homeowner Assistance Program:	Yes
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

Name: MCCLELLAN, CA

Total Officer Employees:	449	RPMA Non-Payroll (\$K/Year):	5,663
Total Enlisted Employees:	2,325	Communications (\$K/Year):	2,978
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	21,097
Total Civilian Employees:	8,882	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	32.0%	Family Housing (\$K/Year):	6,330
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	1.24
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	11,516	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	168	Activity Code:	58
Enlisted VHA (\$/Month):	126		
Per Diem Rate (\$/Day):	101	Homeowner Assistance Program:	No
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

Name: ROBINS, GA

Total Officer Employees:	739	RPMA Non-Payroll (\$K/Year):	6,147
Total Enlisted Employees:	3,269	Communications (\$K/Year):	3,887
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	21,001
Total Civilian Employees:	11,119	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	54.0%	Family Housing (\$K/Year):	6,225
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.85
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	13,709	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	56	Activity Code:	76
Enlisted VHA (\$/Month):	35		
Per Diem Rate (\$/Day):	69	Homeowner Assistance Program:	No
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

Name: TINKER, OK

Total Officer Employees:	1,430	RPMA Non-Payroll (\$K/Year):	3,616
Total Enlisted Employees:	5,995	Communications (\$K/Year):	6,714
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	26,012
Total Civilian Employees:	11,678	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	7.5%	Family Housing (\$K/Year):	3,068
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.90
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	14,607	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	16	Activity Code:	83
Enlisted VHA (\$/Month):	19		
Per Diem Rate (\$/Day):	77	Homeowner Assistance Program:	No
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

Department : Air Force
 Option Package : Kelly-Alt 2
 Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY002.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

INPUT SCREEN FOUR - STATIC BASE INFORMATION

Name: LACKLAND, TX

Total Officer Employees:	1,812	RPMA Non-Payroll (\$K/Year):	6,730
Total Enlisted Employees:	9,837	Communications (\$K/Year):	663
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	2,411
Total Civilian Employees:	2,728	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	21.0%	Family Housing (\$K/Year):	3,991
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.84
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	10,008	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	106	Activity Code:	46
Enlisted VHA (\$/Month):	80	Homeowner Assistance Program:	No
Per Diem Rate (\$/Day):	97	Unique Activity Information:	No
Freight Cost (\$/Ton/Mile):	0.07		

Name: BASE X

Total Officer Employees:	739	RPMA Non-Payroll (\$K/Year):	6,147
Total Enlisted Employees:	3,269	Communications (\$K/Year):	3,887
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	21,001
Total Civilian Employees:	11,119	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	54.0%	Family Housing (\$K/Year):	6,225
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	1.00
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	13,709	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	56	Activity Code:	999999
Enlisted VHA (\$/Month):	35	Homeowner Assistance Program:	No
Per Diem Rate (\$/Day):	69	Unique Activity Information:	No
Freight Cost (\$/Ton/Mile):	0.07		

INPUT SCREEN FIVE - DYNAMIC BASE INFORMATION

Name: HILL, UT

	1996	1997	1998	1999	2000	2001
	----	----	----	----	----	----
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqcd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	23%	12%	16%	22%	11%	16%
Shutdown Schedule (%):	100%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0	Perc Family Housing ShutDown:				0.0%

Department : Air Force
 Option Package : Kelly-Alt 2
 Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY002.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

INPUT SCREEN FIVE - DYNAMIC BASE INFORMATION

Name: TINKER, OK

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqcd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	23%	12%	16%	22%	11%	16%
Shutdown Schedule (%):	100%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0	Perc Family Housing ShutDown:				0.0%

Name: LACKLAND, TX

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqcd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	100%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	100%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0	Perc Family Housing ShutDown:				0.0%

Name: BASE X

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqcd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	100%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	100%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0	Perc Family Housing ShutDown:				0.0%

Department : Air Force
 Option Package : Kelly-Alt 2
 Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY002.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

INPUT SCREEN SIX - BASE PERSONNEL INFORMATION

Name: HILL, UT

	1996	1997	1998	1999	2000	2001
Off Force Struc Change:	0	18	0	0	0	0
Enl Force Struc Change:	0	265	0	0	0	0
Civ Force Struc Change:	0	-705	0	0	0	0
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	0	0	0	0	0	0
Enl Scenario Change:	0	0	0	0	0	0
Civ Scenario Change:	0	0	0	0	0	0
Off Change(No Sal Save):	0	0	0	0	0	0
Enl Change(No Sal Save):	0	0	0	0	0	0
Civ Change(No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

INPUT SCREEN SIX - BASE PERSONNEL INFORMATION

Name: KELLY, TX

	1996	1997	1998	1999	2000	2001
Off Force Struc Change:	0	-52	0	0	0	0
Enl Force Struc Change:	0	-229	0	0	0	0
Civ Force Struc Change:	0	-1,163	0	0	0	0
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	0	0	0	0	0	-138
Enl Scenario Change:	0	0	0	0	0	-407
Civ Scenario Change:	0	0	0	0	0	-2,320
Off Change(No Sal Save):	0	0	0	0	0	0
Enl Change(No Sal Save):	0	0	0	0	0	0
Civ Change(No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

Name: MCCLELLAN, CA

	1996	1997	1998	1999	2000	2001
Off Force Struc Change:	0	-11	0	0	0	0
Enl Force Struc Change:	0	-184	0	0	0	0
Civ Force Struc Change:	0	-334	0	0	0	0
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	0	0	0	0	0	0
Enl Scenario Change:	0	0	0	0	0	0
Civ Scenario Change:	0	0	0	0	0	0
Off Change(No Sal Save):	0	0	0	0	0	0
Enl Change(No Sal Save):	0	0	0	0	0	0
Civ Change(No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

Name: ROBINS, GA

	1996	1997	1998	1999	2000	2001
Off Force Struc Change:	0	262	0	0	0	0
Enl Force Struc Change:	0	502	0	0	0	0
Civ Force Struc Change:	0	-1,249	0	0	0	0
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	0	0	0	0	0	0
Enl Scenario Change:	0	0	0	0	0	0
Civ Scenario Change:	0	0	0	0	0	0
Off Change(No Sal Save):	0	0	0	0	0	0
Enl Change(No Sal Save):	0	0	0	0	0	0
Civ Change(No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

Department : Air Force
 Option Package : Kelly-Alt 2
 Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY002.CBR
 Std Ctrrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

INPUT SCREEN SIX - BASE PERSONNEL INFORMATION

Name: TINKER, OK

	1996	1997	1998	1999	2000	2001
Off Force Struc Change:	0	-151	0	0	0	0
Enl Force Struc Change:	0	-68	0	0	0	0
Civ Force Struc Change:	0	-730	0	0	0	0
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	0	0	0	0	0	0
Enl Scenario Change:	0	0	0	0	0	0
Civ Scenario Change:	0	0	0	0	0	0
Off Change(No Sal Save):	0	0	0	0	0	0
Enl Change(No Sal Save):	0	0	0	0	0	0
Civ Change(No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

Name: BASE X

	1996	1997	1998	1999	2000	2001
Off Force Struc Change:	0	262	0	0	0	0
Enl Force Struc Change:	0	502	0	0	0	0
Civ Force Struc Change:	0	-1,249	0	0	0	0
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	0	0	0	0	0	0
Enl Scenario Change:	0	0	0	0	0	0
Civ Scenario Change:	0	0	0	0	0	0
Off Change(No Sal Save):	0	0	0	0	0	0
Enl Change(No Sal Save):	0	0	0	0	0	0
Civ Change(No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

INPUT SCREEN SEVEN - BASE MILITARY CONSTRUCTION INFORMATION

Name: HILL, UT

Description	Categ	New MilCon	Rehab MilCon	Total Cost(\$K)
Cold Storage	MAINT	30,000	0	500

Name: TINKER, OK

Description	Categ	New MilCon	Rehab MilCon	Total Cost(\$K)
Bldg 214 GTE Test Fa	MAINT	12,950	0	647
Fuel/Air Fac	MAINT	5,200	0	1,048
Bldg 3902 Fuel Test	MAINT	16,000	0	1,632
Bldg 3703 Test Cell	OTHER	0	5,000	5,000
ALC C-5 Facilities	OTHER	326,000	0	52,111
MFH	FAMLQ	93	0	12,130
Renovate Test Cells	OTHER	0	0	8,700
New/Renovate Admin	OTHER	20,103	282,624	19,870

Name: LACKLAND, TX

Description	Categ	New MilCon	Rehab MilCon	Total Cost(\$K)
Utilities	OTHER	0	0	2,500
Security, Fencing	OTHER	0	0	500

Department : Air Force
 Option Package : Kelly-Alt 2
 Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY002.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

STANDARD FACTORS SCREEN ONE - PERSONNEL

Percent Officers Married:	76.80%	Civ Early Retire Pay Factor:	9.00%
Percent Enlisted Married:	66.90%	Priority Placement Service:	60.00%
Enlisted Housing MilCon:	80.00%	PPS Actions Involving PCS:	50.00%
Officer Salary(\$/Year):	78,668.00	Civilian PCS Costs (\$):	28,800.00
Off BAQ with Dependents(\$):	7,073.00	Civilian New Hire Cost(\$):	4,000.00
Enlisted Salary(\$/Year):	36,148.00	Nat Median Home Price(\$):	114,600.00
Enl BAQ with Dependents(\$):	5,162.00	Home Sale Reimburse Rate:	10.00%
Avg Unemploy Cost(\$/Week):	174.00	Max Home Sale Reimburs(\$):	22,385.00
Unemployment Eligibility(Weeks):	18	Home Purch Reimburse Rate:	5.00%
Civilian Salary(\$/Year):	46,642.00	Max Home Purch Reimburs(\$):	11,191.00
Civilian Turnover Rate:	15.00%	Civilian Homeowning Rate:	64.00%
Civilian Early Retire Rate:	10.00%	HAP Home Value Reimburse Rate:	22.90%
Civilian Regular Retire Rate:	5.00%	HAP Homeowner Receiving Rate:	5.00%
Civilian RIF Pay Factor:	39.00%	RSE Home Value Reimburse Rate:	0.00%
SF File Desc: Depot Factors		RSE Homeowner Receiving Rate:	0.00%

STANDARD FACTORS SCREEN TWO - FACILITIES

RPMA Building SF Cost Index:	0.93	Rehab vs. New MilCon Cost:	0.00%
BOS Index (RPMA vs population):	0.54	Info Management Account:	0.00%
(Indices are used as exponents)		MilCon Design Rate:	0.00%
Program Management Factor:	10.00%	MilCon SIOH Rate:	0.00%
Caretaker Admin(SF/Care):	162.00	MilCon Contingency Plan Rate:	0.00%
Mothball Cost (\$/SF):	1.25	MilCon Site Preparation Rate:	0.00%
Avg Bachelor Quarters(SF):	256.00	Discount Rate for NPV.RPT/ROI:	2.75%
Avg Family Quarters(SF):	1,320.00	Inflation Rate for NPV.RPT/ROI:	0.00%
APPDET.RPT Inflation Rates:			
1996: 0.00% 1997: 2.90% 1998: 3.00%		1999: 3.00% 2000: 3.00% 2001: 3.00%	

STANDARD FACTORS SCREEN THREE - TRANSPORTATION

Material/Assigned Person(Lb):	710	Equip Pack & Crate(\$/Ton):	284.00
HHG Per Off Family (Lb):	14,500.00	Mil Light Vehicle(\$/Mile):	0.43
HHG Per Enl Family (Lb):	9,000.00	Heavy/Spec Vehicle(\$/Mile):	1.40
HHG Per Mil Single (Lb):	6,400.00	POV Reimbursement(\$/Mile):	0.18
HHG Per Civilian (Lb):	18,000.00	Avg Mil Tour Length (Years):	4.10
Total HHG Cost (\$/100Lb):	35.00	Routine PCS(\$/Pers/Tour):	6,437.00
Air Transport (\$/Pass Mile):	0.20	One-Time Off PCS Cost(\$):	9,142.00
Misc Exp (\$/Direct Employ):	700.00	One-Time Enl PCS Cost(\$):	5,761.00

STANDARD FACTORS SCREEN FOUR - MILITARY CONSTRUCTION

Category	UM	\$/UM	Category	UM	\$/UM
Horizontal	(SY)	0	Optional Category A	()	0
Waterfront	(LF)	0	Optional Category B	()	0
Air Operations	(SF)	0	Optional Category C	()	0
Operational	(SF)	0	Optional Category D	()	0
Administrative	(SF)	0	Optional Category E	()	0
School Buildings	(SF)	0	Optional Category F	()	0
Maintenance Shops	(SF)	0	Optional Category G	()	0
Bachelor Quarters	(SF)	0	Optional Category H	()	0
Family Quarters	(EA)	0	Optional Category I	()	0
Covered Storage	(SF)	0	Optional Category J	()	0
Dining Facilities	(SF)	0	Optional Category K	()	0
Recreation Facilities	(SF)	0	Optional Category L	()	0
Communications Facil	(SF)	0	Optional Category M	()	0
Shipyard Maintenance	(SF)	0	Optional Category N	()	0
RDT & E Facilities	(SF)	0	Optional Category O	()	0
POL Storage	(BL)	0	Optional Category P	()	0
Ammunition Storage	(SF)	0	Optional Category Q	()	0
Medical Facilities	(SF)	0	Optional Category R	()	0
Environmental	()	0			

Department : Air Force
Option Package : Kelly-Alt 2
Scenario File : C:\COBRA95\CROSS\DBCRC\KELLY002.CBR
Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

EXPLANATORY NOTES (INPUT SCREEN NINE)

1. Changed movements of officers from Kelly to Hill from 19 to 11.
2. Changed movement of enlisted from Kelly to Hill from 28 to 5.
3. Changed movement of civilians from Kelly to Hill from 800 to 668.
4. Changed movement of officers from Kelly to Robins from 2 to 1.
5. Changed movement of enlisted from Kelly to Robins from 3 to 1.
6. Changed movement of civilians from Kelly to Robins from 80 to 67.
7. Changed movement of officers from Kelly to Tinker from 166 to 97.
8. Changed movement of enlisted from Kelly to Tinker from 251 to 46.
9. Changed movement of civilians from Kelly to Tinker from 7116 to 5949.
10. Changed officers eliminated at Kelly from 60 to 138.
11. Changed enlisted eliminated at Kelly from 177 to 407.
12. Changed civilians eliminated at Kelly from 1008 to 2320.
13. Left everything else the same. The result of these changes are to go from approximately 7% reduction in personnel at Kelly to 15% overall. Phasing of movements and eliminations still occurs in 6 yrs at a 5,10,25,30,25,5 pace.

COBRA REALIGNMENT SUMMARY (COBRA v5.08) - Page 1/2
 Data As Of 15:52 01/12/1995, Report Created 15:28 04/14/1995

Department : Air Force
 Option Package : Kelly AFB-Option 1
 Scenario File : C:\COBRA95\CROSS\DBCRC\KE1-0119.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

Starting Year : 1996
 Final Year : 2001
 ROI Year : 2010 (9 Years)

NPV in 2015(\$K): -282,587
 1-Time Cost(\$K): 582,061

Net Costs (\$K) Constant Dollars	1996						Total	Beyond
	1996	1997	1998	1999	2000	2001		
MilCon	26,377	12,196	16,262	22,360	11,180	16,262	104,638	0
Person	1,314	44	5,849	8,784	8,439	-23,621	810	-57,336
Overhd	1,881	5,302	-82	-367	-2,384	-9,858	-5,508	-19,024
Moving	13,244	27,757	66,148	79,388	66,154	22,904	275,596	0
Missio	0	0	0	0	0	0	0	0
Other	5,698	11,396	28,489	33,116	26,349	34,363	139,411	0
TOTAL	48,514	56,696	116,667	143,282	109,738	40,049	514,947	-76,360

	1996	1997	1998	1999	2000	2001	Total
POSITIONS ELIMINATED							
Off	0	0	0	0	0	60	60
Enl	0	0	0	0	0	177	177
Civ	0	0	0	0	0	1,008	1,008
TOT	0	0	0	0	0	1,245	1,245

	1996	1997	1998	1999	2000	2001	Total
POSITIONS REALIGNED							
Off	13	507	63	75	64	9	731
Enl	49	2,893	242	291	242	43	3,760
Stu	0	0	0	0	0	0	0
Civ	498	2,969	2,488	2,986	2,488	495	11,924
TOT	560	6,369	2,793	3,352	2,794	547	16,415

Summary:

Assumptions:

Kelly AFB closes, Air Intelligence Agency remains and is attached to Lackland AFB. AFRES C-5As and ANG F-16s cantoned at Lackland AFB. SA-ALC workload transferred to OC-ALC (89%), OO-ALC (10%) & WR-ALC (1%). Tenants with specified gaining locations moved to their respective sites. Remaining tenants and base population moved to Base X. Retain housing at Kelly, and build 93 MFH units at Tinker. Used updated manpower sheet from AF/PEP resulting in an add'l 44 eliminations.

Department : Air Force
 Option Package : Kelly AFB-Option 1
 Scenario File : C:\COBRA95\CROSS\DBCRC\KE1-0119.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

Costs (\$K)	Constant Dollars						Total	Beyond
	1996	1997	1998	1999	2000	2001		
MilCon	26,377	12,196	16,262	22,360	11,180	16,262	104,638	0
Person	1,722	18,250	24,080	27,015	26,670	23,676	121,414	19,028
Overhd	1,881	7,072	7,535	10,971	14,216	15,489	57,165	10,745
Moving	13,341	27,949	66,627	79,963	66,634	22,986	277,500	0
Missio	0	0	0	0	0	0	0	0
Other	5,698	11,396	28,489	34,186	28,489	36,503	144,761	0
TOTAL	49,020	76,863	142,994	174,496	147,190	114,916	705,478	29,773

Savings (\$K)	Constant Dollars						Total	Beyond
	1996	1997	1998	1999	2000	2001		
MilCon	0	0	0	0	0	0	0	0
Person	408	18,206	18,231	18,231	18,231	47,297	120,604	76,364
Overhd	0	1,769	7,617	11,338	16,600	25,347	62,673	29,769
Moving	97	191	479	575	480	82	1,904	0
Missio	0	0	0	0	0	0	0	0
Other	0	0	0	1,070	2,140	2,140	5,350	0
TOTAL	506	20,167	26,327	31,214	37,451	74,866	190,531	106,133

INPUT DATA REPORT (COBRA v5.08)
 Data As Of 15:52 01/12/1995, Report Created 15:28 04/14/1995

Department : Air Force
 Option Package : Kelly AFB-Option 1
 Scenario File : C:\COBRA95\CROSS\DBCRC\KE1-0119.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

INPUT SCREEN ONE - GENERAL SCENARIO INFORMATION

Model Year One : FY 1996

Model does Time-Phasing of Construction/Shutdown: No

Base Name	Strategy:
-----	-----
HILL, UT	Realignment
KELLY, TX	Deactivates in FY 2001
MCCLELLAN, CA	Realignment
ROBINS, GA	Realignment
TINKER, OK	Realignment
LACKLAND, TX	Realignment
BASE X	Realignment

Summary:

Assumptions:

Kelly AFB closes, Air Intelligence Agency remains and is attached to Lackland AFB. AFRES C-5As and ANG F-16s cantoned at Lackland AFB. SA-ALC workload transferred to OC-ALC (89%), OO-ALC (10%) & WR-ALC (1%). Tenants with specified gaining locations moved to their respective sites. Remaining tenants and base population moved to Base X. Retain housing at Kelly, and build 93 MFH units at Tinker. Used updated manpower sheet from AF/PEP resulting in an add'l 44 eliminations.

INPUT SCREEN TWO - DISTANCE TABLE

From Base:	To Base:	Distance:
-----	-----	-----
HILL, UT	KELLY, TX	1,363 mi
KELLY, TX	MCCLELLAN, CA	1,733 mi
KELLY, TX	ROBINS, GA	1,045 mi
KELLY, TX	TINKER, OK	488 mi
KELLY, TX	LACKLAND, TX	1 mi
KELLY, TX	BASE X	1,000 mi

INPUT SCREEN THREE - MOVEMENT TABLE

Transfers from KELLY, TX to HILL, UT

	1996	1997	1998	1999	2000	2001
Officer Positions:	1	2	5	6	5	0
Enlisted Positions:	2	3	7	9	7	0
Civilian Positions:	40	80	200	240	200	40
Student Positions:	0	0	0	0	0	0
Missn Eqpt (tons):	0	0	0	0	0	0
Suppt Eqpt (tons):	0	0	0	0	0	0
Military Light Vehicles:	3	6	15	18	16	3
Heavy/Special Vehicles:	6	11	28	34	28	5

Transfers from KELLY, TX to ROBINS, GA

	1996	1997	1998	1999	2000	2001
Officer Positions:	0	0	0	0	1	1
Enlisted Positions:	0	0	1	1	1	0
Civilian Positions:	4	8	20	24	20	4
Student Positions:	0	0	0	0	0	0
Missn Eqpt (tons):	0	0	0	0	0	0
Suppt Eqpt (tons):	0	0	0	0	0	0
Military Light Vehicles:	0	0	0	0	0	0
Heavy/Special Vehicles:	0	0	0	0	0	0

Department : Air Force
 Option Package : Kelly AFB-Option 1
 Scenario File : C:\COBRA95\CROSS\DBCRC\KE1-0119.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

INPUT SCREEN THREE - MOVEMENT TABLE

Transfers from KELLY, TX to TINKER, OK

	1996	1997	1998	1999	2000	2001
Officer Positions:	9	17	42	50	42	6
Enlisted Positions:	13	26	63	76	63	10
Civilian Positions:	356	712	1,779	2,135	1,779	355
Student Positions:	0	0	0	0	0	0
Missn Eqpt (tons):	0	0	0	0	0	0
Suppt Eqpt (tons):	0	0	0	0	0	0
Military Light Vehicles:	25	50	124	149	124	25
Heavy/Special Vehicles:	45	91	227	272	227	45

Transfers from KELLY, TX to LACKLAND, TX

	1996	1997	1998	1999	2000	2001
Officer Positions:	0	482	0	0	0	0
Enlisted Positions:	0	2,796	0	0	0	0
Civilian Positions:	0	1,973	0	0	0	0
Student Positions:	0	0	0	0	0	0
Missn Eqpt (tons):	0	0	0	0	0	0
Suppt Eqpt (tons):	0	0	0	0	0	0
Military Light Vehicles:	0	0	0	0	0	0
Heavy/Special Vehicles:	0	0	0	0	0	0

Transfers from KELLY, TX to BASE X

	1996	1997	1998	1999	2000	2001
Officer Positions:	3	6	16	19	16	2
Enlisted Positions:	34	68	171	205	171	33
Civilian Positions:	98	196	489	587	489	96
Student Positions:	0	0	0	0	0	0
Missn Eqpt (tons):	0	0	0	0	0	0
Suppt Eqpt (tons):	0	0	0	0	0	0
Military Light Vehicles:	0	0	0	0	0	0
Heavy/Special Vehicles:	0	0	0	0	0	0

INPUT SCREEN FOUR - STATIC BASE INFORMATION

Name: HILL, UJ

Total Officer Employees:	617	RPMA Non-Payroll (\$K/Year):	6,020
Total Enlisted Employees:	3,949	Communications (\$K/Year):	2,402
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	16,024
Total Civilian Employees:	8,691	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	31.0%	Family Housing (\$K/Year):	9,588
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.91
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	13,772	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	0	Activity Code:	38
Enlisted VHA (\$/Month):	26		
Per Diem Rate (\$/Day):	98	Homeowner Assistance Program:	No
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

Department : Air Force
 Option Package : Kelly AFB-Option 1
 Scenario File : C:\COBRA95\CROSS\DBCRC\KE1-0119.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

INPUT SCREEN FOUR - STATIC BASE INFORMATION

Name: KELLY, TX

Total Officer Employees:	843	RPMA Non-Payroll (\$K/Year):	16,993
Total Enlisted Employees:	4,166	Communications (\$K/Year):	3,681
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	13,945
Total Civilian Employees:	14,095	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	14.0%	Family Housing (\$K/Year):	2,870
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.84
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	16,316	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	106	Activity Code:	43
Enlisted VHA (\$/Month):	80		
Per Diem Rate (\$/Day):	97	Homeowner Assistance Program:	Yes
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

Name: MCCLELLAN, CA

Total Officer Employees:	449	RPMA Non-Payroll (\$K/Year):	5,663
Total Enlisted Employees:	2,325	Communications (\$K/Year):	2,978
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	21,097
Total Civilian Employees:	8,882	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	32.0%	Family Housing (\$K/Year):	6,330
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	1.24
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	11,516	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	168	Activity Code:	58
Enlisted VHA (\$/Month):	126		
Per Diem Rate (\$/Day):	101	Homeowner Assistance Program:	No
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

Name: ROBINS, GA

Total Officer Employees:	739	RPMA Non-Payroll (\$K/Year):	6,147
Total Enlisted Employees:	3,269	Communications (\$K/Year):	3,887
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	21,001
Total Civilian Employees:	11,119	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	54.0%	Family Housing (\$K/Year):	6,225
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.85
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	13,709	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	56	Activity Code:	76
Enlisted VHA (\$/Month):	35		
Per Diem Rate (\$/Day):	69	Homeowner Assistance Program:	No
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

Name: TINKER, OK

Total Officer Employees:	1,430	RPMA Non-Payroll (\$K/Year):	3,616
Total Enlisted Employees:	5,995	Communications (\$K/Year):	6,714
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	26,012
Total Civilian Employees:	11,678	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	7.5%	Family Housing (\$K/Year):	3,068
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.90
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	14,607	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	16	Activity Code:	83
Enlisted VHA (\$/Month):	19		
Per Diem Rate (\$/Day):	77	Homeowner Assistance Program:	No
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

Department : Air Force
 Option Package : Kelly AFB-Option 1
 Scenario File : C:\COBRA95\CROSS\DBCRC\KE1-0119.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

INPUT SCREEN FOUR - STATIC BASE INFORMATION

Name: LACKLAND, TX

Total Officer Employees:	1,812	RPMA Non-Payroll (\$K/Year):	6,730
Total Enlisted Employees:	9,837	Communications (\$K/Year):	663
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	2,411
Total Civilian Employees:	2,728	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	21.0%	Family Housing (\$K/Year):	3,991
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.84
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	10,008	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	106	Activity Code:	46
Enlisted VHA (\$/Month):	80	Homeowner Assistance Program:	No
Per Diem Rate (\$/Day):	97	Unique Activity Information:	No
Freight Cost (\$/Ton/Mile):	0.07		

Name: BASE X

Total Officer Employees:	739	RPMA Non-Payroll (\$K/Year):	6,147
Total Enlisted Employees:	3,269	Communications (\$K/Year):	3,887
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	21,001
Total Civilian Employees:	11,119	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	54.0%	Family Housing (\$K/Year):	6,225
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	1.00
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	13,709	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	56	Activity Code:	999999
Enlisted VHA (\$/Month):	35	Homeowner Assistance Program:	No
Per Diem Rate (\$/Day):	69	Unique Activity Information:	No
Freight Cost (\$/Ton/Mile):	0.07		

INPUT SCREEN FIVE - DYNAMIC BASE INFORMATION

Name: HILL, UT

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	23%	12%	16%	22%	11%	16%
Shutdown Schedule (%):	100%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0					Perc Family Housing ShutDown: 0.0%

Department : Air Force
 Option Package : Kelly AFB-Option 1
 Scenario File : C:\COBRA95\CROSS\DBCRC\KE1-0119.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

INPUT SCREEN FIVE - DYNAMIC BASE INFORMATION

Name: KELLY, TX

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	5,321	10,642	26,606	31,927	26,606	35,321
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	4,897	9,794	24,486	29,383	24,486	4,897
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	-1,070	-2,140	-2,140
Construction Schedule(%):	23%	12%	16%	22%	11%	16%
Shutdown Schedule (%):	0%	23%	12%	16%	22%	27%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	13,316					
Perc Family Housing ShutDown:						0.0%

Name: MCCLELLAN, CA

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	23%	12%	16%	22%	11%	16%
Shutdown Schedule (%):	100%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0					
Perc Family Housing ShutDown:						0.0%

Name: ROBINS, GA

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	23%	12%	16%	22%	11%	16%
Shutdown Schedule (%):	100%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0					
Perc Family Housing ShutDown:						0.0%

Department : Air Force
 Option Package : Kelly AFB-Option 1
 Scenario File : C:\COBRA95\CROSS\DBCRC\KE1-0119.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

INPUT SCREEN FIVE - DYNAMIC BASE INFORMATION

Name: TINKER, OK

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	23%	12%	16%	22%	11%	16%
Shutdown Schedule (%):	100%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0	Perc Family Housing ShutDown:				0.0%

Name: LACKLAND, TX

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	100%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	100%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0	Perc Family Housing ShutDown:				0.0%

Name: BASE X

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	100%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	100%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0	Perc Family Housing ShutDown:				0.0%

Department : Air Force
 Option Package : Kelly AFB-Option 1
 Scenario File : C:\COBRA95\CROSS\DBCRC\KE1-0119.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

INPUT SCREEN SIX - BASE PERSONNEL INFORMATION

Name: HILL, UT

	1996	1997	1998	1999	2000	2001
Off Force Struc Change:	0	18	0	0	0	0
Enl Force Struc Change:	0	265	0	0	0	0
Civ Force Struc Change:	0	-705	0	0	0	0
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	0	0	0	0	0	0
Enl Scenario Change:	0	0	0	0	0	0
Civ Scenario Change:	0	0	0	0	0	0
Off Change(No Sal Save):	0	0	0	0	0	0
Enl Change(No Sal Save):	0	0	0	0	0	0
Civ Change(No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

INPUT SCREEN SIX - BASE PERSONNEL INFORMATION

Name: KELLY, TX

	1996	1997	1998	1999	2000	2001
Off Force Struc Change:	0	-52	0	0	0	0
Enl Force Struc Change:	0	-229	0	0	0	0
Civ Force Struc Change:	0	-1,163	0	0	0	0
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	0	0	0	0	0	-60
Enl Scenario Change:	0	0	0	0	0	-177
Civ Scenario Change:	0	0	0	0	0	-1,008
Off Change(No Sal Save):	0	0	0	0	0	0
Enl Change(No Sal Save):	0	0	0	0	0	0
Civ Change(No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

Name: MCCLELLAN, CA

	1996	1997	1998	1999	2000	2001
Off Force Struc Change:	0	-11	0	0	0	0
Enl Force Struc Change:	0	-184	0	0	0	0
Civ Force Struc Change:	0	-334	0	0	0	0
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	0	0	0	0	0	0
Enl Scenario Change:	0	0	0	0	0	0
Civ Scenario Change:	0	0	0	0	0	0
Off Change(No Sal Save):	0	0	0	0	0	0
Enl Change(No Sal Save):	0	0	0	0	0	0
Civ Change(No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

Name: ROBINS, GA

	1996	1997	1998	1999	2000	2001
Off Force Struc Change:	0	262	0	0	0	0
Enl Force Struc Change:	0	502	0	0	0	0
Civ Force Struc Change:	0	-1,249	0	0	0	0
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	0	0	0	0	0	0
Enl Scenario Change:	0	0	0	0	0	0
Civ Scenario Change:	0	0	0	0	0	0
Off Change(No Sal Save):	0	0	0	0	0	0
Enl Change(No Sal Save):	0	0	0	0	0	0
Civ Change(No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

Department : Air Force
 Option Package : Kelly AFB-Option 1
 Scenario File : C:\COBRA95\CROSS\DBCRC\KE1-0119.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

INPUT SCREEN SIX - BASE PERSONNEL INFORMATION

Name: TINKER, OK

	1996	1997	1998	1999	2000	2001
Off Force Struc Change:	0	-151	0	0	0	0
Enl Force Struc Change:	0	-68	0	0	0	0
Civ Force Struc Change:	0	-730	0	0	0	0
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	0	0	0	0	0	0
Enl Scenario Change:	0	0	0	0	0	0
Civ Scenario Change:	0	0	0	0	0	0
Off Change(No Sal Save):	0	0	0	0	0	0
Enl Change(No Sal Save):	0	0	0	0	0	0
Civ Change(No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

Name: BASE X

	1996	1997	1998	1999	2000	2001
Off Force Struc Change:	0	262	0	0	0	0
Enl Force Struc Change:	0	502	0	0	0	0
Civ Force Struc Change:	0	-1,249	0	0	0	0
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	0	0	0	0	0	0
Enl Scenario Change:	0	0	0	0	0	0
Civ Scenario Change:	0	0	0	0	0	0
Off Change(No Sal Save):	0	0	0	0	0	0
Enl Change(No Sal Save):	0	0	0	0	0	0
Civ Change(No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

INPUT SCREEN SEVEN - BASE MILITARY CONSTRUCTION INFORMATION

Name: HILL, UT

Description	Categ	New MilCon	Rehab MilCon	Total Cost(\$K)
Cold Storage	MAINT	30,000	0	500

Name: TINKER, OK

Description	Categ	New MilCon	Rehab MilCon	Total Cost(\$K)
Bldg 214 GTE Test Fa	MAINT	12,950	0	647
Fuel/Air Fac	MAINT	5,200	0	1,048
Bldg 3902 Fuel Test	MAINT	16,000	0	1,632
Bldg 3703 Test Cell	OTHER	0	5,000	5,000
ALC C-5 Facilities	OTHER	326,000	0	52,111
MFH	FAMLQ	93	0	12,130
Renovate Test Cells	OTHER	0	0	8,700
New/Renovate Admin	OTHER	20,103	282,624	19,870

Name: LACKLAND, TX

Description	Categ	New MilCon	Rehab MilCon	Total Cost(\$K)
Utilities	OTHER	0	0	2,500
Security, Fencing	OTHER	0	0	500

Department : Air Force
 Option Package : Kelly AFB-Option 1
 Scenario File : C:\COBRA95\CROSS\DBCRC\KE1-0119.CBR
 Std Fctrs File : C:\COBRA95\CROSS\DBCRC\DEPOT.SFF

STANDARD FACTORS SCREEN ONE - PERSONNEL

Percent Officers Married:	76.80%	Civ Early Retire Pay Factor:	9.00%
Percent Enlisted Married:	66.90%	Priority Placement Service:	60.00%
Enlisted Housing MilCon:	80.00%	PPS Actions Involving PCS:	50.00%
Officer Salary(\$/Year):	78,668.00	Civilian PCS Costs (\$):	28,800.00
Off BAQ with Dependents(\$):	7,073.00	Civilian New Hire Cost(\$):	4,000.00
Enlisted Salary(\$/Year):	36,148.00	Nat Median Home Price(\$):	114,600.00
Enl BAQ with Dependents(\$):	5,162.00	Home Sale Reimburse Rate:	10.00%
Avg Unemploy Cost(\$/Week):	174.00	Max Home Sale Reimburs(\$):	22,385.00
Unemployment Eligibility(Weeks):	18	Home Purch Reimburse Rate:	5.00%
Civilian Salary(\$/Year):	46,642.00	Max Home Purch Reimburs(\$):	11,191.00
Civilian Turnover Rate:	15.00%	Civilian Homeowning Rate:	64.00%
Civilian Early Retire Rate:	10.00%	HAP Home Value Reimburse Rate:	22.90%
Civilian Regular Retire Rate:	5.00%	HAP Homeowner Receiving Rate:	5.00%
Civilian RIF Pay Factor:	39.00%	RSE Home Value Reimburse Rate:	0.00%
SF File Desc:	Depot Factors	RSE Homeowner Receiving Rate:	0.00%

STANDARD FACTORS SCREEN TWO - FACILITIES

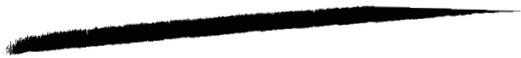
RPMA Building SF Cost Index:	0.93	Rehab vs. New MilCon Cost:	0.00%
BOS Index (RPMA vs population):	0.54	Info Management Account:	0.00%
(Indices are used as exponents)		MilCon Design Rate:	0.00%
Program Management Factor:	10.00%	MilCon SIOH Rate:	0.00%
Caretaker Admin(SF/Care):	162.00	MilCon Contingency Plan Rate:	0.00%
Mothball Cost(\$/SF):	1.25	MilCon Site Preparation Rate:	0.00%
Avg Bachelor Quarters(SF):	256.00	Discount Rate for NPV.RPT/ROI:	2.75%
Avg Family Quarters(SF):	1,320.00	Inflation Rate for NPV.RPT/ROI:	0.00%
APPDET.RPT Inflation Rates:			
1996: 0.00% 1997: 2.90% 1998: 3.00%		1999: 3.00% 2000: 3.00% 2001: 3.00%	

STANDARD FACTORS SCREEN THREE - TRANSPORTATION

Material/Assigned Person(Lb):	710	Equip Pack & Crate(\$/Ton):	284.00
HHG Per Off Family (Lb):	14,500.00	Mil Light Vehicle(\$/Mile):	0.43
HHG Per Enl Family (Lb):	9,000.00	Heavy/Spec Vehicle(\$/Mile):	1.40
HHG Per Mil Single (Lb):	6,400.00	POV Reimbursement(\$/Mile):	0.18
HHG Per Civilian (Lb):	18,000.00	Avg Mil Tour Length (Years):	4.10
Total HHG Cost (\$/100Lb):	35.00	Routine PCS(\$/Pers/Tour):	6,437.00
Air Transport (\$/Pass Mile):	0.20	One-Time Off PCS Cost(\$):	9,142.00
Misc Exp (\$/Direct Employ):	700.00	One-Time Enl PCS Cost(\$):	5,761.00

STANDARD FACTORS SCREEN FOUR - MILITARY CONSTRUCTION

Category	UM	\$/UM	Category	UM	\$/UM
-----	--	----	-----	--	----
Horizontal	(SY)	0	Optional Category A	()	0
Waterfront	(LF)	0	Optional Category B	()	0
Air Operations	(SF)	0	Optional Category C	()	0
Operational	(SF)	0	Optional Category D	()	0
Administrative	(SF)	0	Optional Category E	()	0
School Buildings	(SF)	0	Optional Category F	()	0
Maintenance Shops	(SF)	0	Optional Category G	()	0
Bachelor Quarters	(SF)	0	Optional Category H	()	0
Family Quarters	(EA)	0	Optional Category I	()	0
Covered Storage	(SF)	0	Optional Category J	()	0
Dining Facilities	(SF)	0	Optional Category K	()	0
Recreation Facilities	(SF)	0	Optional Category L	()	0
Communications Facil	(SF)	0	Optional Category M	()	0
Shipyards Maintenance	(SF)	0	Optional Category N	()	0
RDT & E Facilities	(SF)	0	Optional Category O	()	0
POL Storage	(BL)	0	Optional Category P	()	0
Ammunition Storage	(SF)	0	Optional Category Q	()	0
Medical Facilities	(SF)	0	Optional Category R	()	0
Environmental	()	0			



DRAFT

DoD 4151.18-H
August 1994

DEPOT MAINTENANCE

CAPACITY AND UTILIZATION

MEASUREMENT HANDBOOK

OFFICE OF THE DEPUTY UNDER SECRETARY OF DEFENSE (LOGISTICS)

DRAFT

FOREWORD

This Handbook is issued under the authority of DoDD 4151.18, Maintenance of Military Materiel, dated August 12, 1992. Its purpose is to provide updated guidance for a common methodology to measure and provide visibility of the capacity and utilization of DoD organic depot maintenance activities that perform depot-level maintenance of military material.

DoD 4151.15-H, Depot Maintenance Production Shop Capacity Measurement Handbook, dated July 28, 1976 is hereby canceled.

This Handbook applies to the Office of the Secretary of Defense, the Military Departments, and the Defense Agencies (hereafter referred to collectively as "the DoD Components").

This Handbook is effective immediately and is mandatory for use by all the DoD Components. The Heads of the DoD Components may issue supplementary instructions when necessary to provide for unique requirements within their respective Component.

Send recommended changes to the Handbook through the appropriate channels to:

Office of the Deputy Under Secretary of Defense (Logistics)
ATTN: Assistant Deputy Under Secretary of Defense (Maintenance
Policy, Programs and Resources)
Washington, DC 20301-5000

The DoD Components may obtain copies of this Handbook through their own publication channels. Other Federal Agencies and the public may obtain copies from the U.S. Department of Commerce, National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161.

Deputy Under Secretary of Defense (Logistics)

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REFERENCES

- (a) DoD 4151.15-H Depot Maintenance Production Shop Capacity
Measurement Handbook, 28 July 1986 (hereby canceled)
- (b) DoDD 4151.18, Maintenance of Military Materiel, dated August 12, 1992
- (c) DoD 7220.9M, DoD Accounting Manual, October 1983, Change No. 15,
23 Mar 1990, Chapter 76 [or DoD 7000.14-R Financial Management
Regulation (if published before this handbook)]

DEFINITIONS

1. Annual Paid Hours. The annual work hours per worker, including holidays, for a single shift, 40 hour work week for which an employee is paid.
2. Annual Productive Hours. That portion of the annual paid hours per production worker that remains for direct application to the job after subtraction of holidays, leave, training, and other recognized indirect hours.
3. Availability Factor. The percentage of a single-shift work year that work positions can be used to accomplish direct productive work. This factor may include reductions for facility/equipment nonavailability such as calibration/maintenance/repairs of real property and shop equipment, utility failure, unscheduled facility closures, and equipment installation/rearrangement.
4. Bottleneck. A process in the production flow within which capacity to do work is limited to the degree that it restricts the ability to achieve full, single-shift utilization of the other processes either preceding or following the bottleneck.
5. Capacity Index. The amount of workload, expressed in actual direct labor hours (DLHs), that a facility can effectively produce annually on a single shift, 40-hour week basis while producing the product mix that the facility is designed to accommodate. The formula for computing the capacity index is:

(work positions) x (availability factor) x (annual productive hours)

6. CORE. Depot maintenance core is the capability maintained within organic Defense depots to meet readiness and sustainability requirements of the weapon systems that support the Joint Chiefs of Staff (JCS) contingency scenario(s). Core exist to minize the operaional risks and to guarantee readiness of these weapon systems. Core depot maintenance capabilities will comprise only the minimum facilities, equipment and skilled personnel necessary to ensure a ready and controlled source of repaired technical competence. The Military Services will use the DoD approved methodology (Appendix F) to comput core depot maintenance requirements.

7. Depot Maintenance. That maintenance that is the responsibility of and performed by designated maintenance activities, to augment stocks of serviceable materiel, and to support organizational maintenance and intermediate maintenance activities by the use of more extensive shop facilities, equipment, and personnel of higher technical skill than are available at the lower levels of maintenance. Its phases normally consist of inspection, test, repair, modification, alteration, modernization, conversion, overhaul reclamation, or

rebuild of parts, assemblies, subassemblies, components, equipment end items, and weapons systems; the manufacture of critical non-available parts; and providing technical assistance to intermediate maintenance organizations, using and other activities. Depot maintenance is normally accomplished in fixed shops, shipyards and other shore-based facilities, or by depot field teams.

8. Depot Maintenance Activity. An industrial-type facility established by the DoD to perform depot-level maintenance on weapon systems, equipment and components.

9. Direct Production Worker. A worker whose labor hours are charged to specific production Job orders.

10. Excess Capacity. Capacity for which no current or future requirement exists.

11. Index. An Index is a composite number used to characterize different sets of data in terms of a ratio. An Index determined in accordance with this Handbook is a general indicator rather than a precise measure. As index data are aggregated, their significance may decrease.

12. Mission Utilization Index. An indicator, expressed as a percentage, of the degree of alignment of executable requirements to the designed capacity of a shop or depot.

13. Mobilization Utilization Index. An indicator, expressed as a percentage, of the degree of alignment of mobilization requirements to the designed physical capacity of a shop or depot.

14. Peacetime Utilization Index. An indicator, expressed as a percentage, of the degree of alignment of planned, funded or actual workload to the designed capacity of a shop or depot.

15. Physical Capacity Index. The amount of workload, expressed in actual DLHs, that a facility can accommodate with all work positions continuously manned on a single shift, 40-hour week basis, while producing the product mix that the facility is designed to accommodate. The physical capacity index is used for mobilization planning purposes only. The formula for computing the physical capacity index is:

$$(\text{work positions}) \times (\text{availability factor}) \times (\text{annual paid hours})$$

This annually based formula assumes that work positions will be continuously manned and that all holidays will be worked.

16. Product Mix. A combination of heterogeneous workloads usually consisting of portions related to major systems, subsystems, components, stock classes, or items.
17. Reserve Capacity. Capacity that is not utilized but is retained for reasons of military necessity or as sound business practice.
18. Reserve Capacity Index. The amount of capacity, expressed in DLHs, that is identified for retention as reserve capacity. The reserve capacity index for each specific depot maintenance activity is the aggregate of the individual shop-identified reserve capacities of that activity.
19. Shop. A work center, functional work group, or resource group that contains one or more work stations that perform depot maintenance work.
20. Surge. The act of expanding an existing depot maintenance repair capability to meet increased requirements by adjusting shifts, adding skilled personnel, equipment and/or spares and repair parts to increase the flow of repaired or manufactured materiel to the using activity or for serviceable storage.
21. Utilization Index. An indicator, expressed as a percentage, of the degree of alignment of workload to the designed capacity of a shop or depot, after allowing for reserve capacity.
22. Work Position. The designated space of equipment/process usage that can be occupied consistently by one direct production worker to accomplish the

assigned task on a full time basis. A work position may include more than one location if the worker moves to other locations to accomplish the assigned task.

23. Work Station. The lowest order of equipment/process location that requires separate analysis of work flow and function during the capacity index calculation. It will consist of one or more work positions as determined by the criteria in step 2 of the capacity index calculation in this Handbook.

CHAPTER 1

APPLICABILITY AND SCOPE

A. PURPOSE AND APPLICATION

1. REISSUANCE AND PURPOSE

This publication reissues Reference (a) to update guidance for a common methodology to measure the capacity and utilization of DoD organic depot maintenance activities that perform depot-level maintenance of military material.

2. APPLICABILITY AND SCOPE

It is to be used by all activities and organizations of the DoD Components responsible for the determination and reporting of capacity and utilization information for organic depot maintenance activities.

The techniques in this Handbook are applicable to both covered and uncovered spaces, as defined in Appendix D, within the confines of the depot maintenance activity. This Handbook does not apply to depot field teams and shops referred to as general shop support in Appendix D. Organic depot maintenance activities and physical capacities established or retained within the DoD Components are to be kept to the minimum necessary to ensure a ready, controlled source of technical competence and resources to meet military requirements (DoDD 4151.18, Maintenance of Military Materiel, reference (b)). These activities, then, are to remain in place to provide

logistical support for war, emergency, and contingency actions, and are to operate in peacetime in a cost-effective manner.

In addition to prescribing calculation methodologies, this Handbook further establishes and outlines reporting criteria for the DoD Components. Such reporting is prescribed to monitor and support the establishment and retention of essential depot maintenance capability as outlined in references

B. INDEXES AND COMPUTATIONS

This Handbook provides a methodology to calculate depot maintenance activity capacity and utilization from the individual shop level and upward. It establishes DLHs as the basic parameter of capacity, enabling comparisons of capacity and utilization data between activities producing varying product mixes. Expressing capacity in a comparable parameter provides an indication of relative size and levels of utilization. Shop level data expressed in DLHs can then be aggregated to develop higher level indicators. All indicators are presented as indexes due to the inherent general nature of the calculations.

Indexes are composite numbers used to characterize different sets of data in terms of a ratio. Indexes determined in accordance with this Handbook are general indicators rather than precise measures. As index data are aggregated, its significance may decrease. While the indexes are important considerations in making workloading decisions, such decisions must be made as a result of a thorough, detailed analysis of the workloads, facilities, and resources involved.

CHAPTER 2

STANDARD FACTORS

A. COMPARABLE BASE

An objective of this Handbook is to provide methodologies that promote the calculation of comparable data. To accomplish this it is necessary that the DoD Components use similar factors as the basis of calculations. The Standard Factors identified, in section 2.B., shall be used by the DoD Components to ensure comparable data is developed.

B. CALCULATION FACTORS

1. ANNUAL PAID HOURS

For determining annual productive hours and for physical capacity calculations, the annual paid direct labor hours will be 2080 per work position.

2. ANNUAL PRODUCTIVE HOURS

For capacity and utilization index calculations, the annual productive DLHs will be 1615 DLH per work position in all cases except Naval Sea Systems Command (NAVSEA) Naval Shipyard Output Shops (identified in Appendix A), which will use 1537 DLH. The total of 1615 DLH is based on the following calculation:

Annual Paid Hours	2080 DLH
- Holidays	80
- Leave	274
- Indirect Hours	<u>111</u>
Annual Productive Hours	1615 DLH

Shipyard annual productive hours are established at 1537 DLH to reflect the larger training requirements of those activities for direct workers.

3. AVAILABILITY FACTOR

The percentage of a work year that work positions can be utilized to accomplish direct productive work is known as the availability factor. It is expressed in its decimal form. This factor may include reductions for facility and equipment nonavailability for reasons such as calibration, maintenance, or repairs of real property and shop equipment, utility failure, unscheduled facility closures, and equipment installation or rearrangement. For capacity and utilization index calculations, the availability factor will be 0.95.

4. SHIPWORK DRYDOCK DAYS

For capacity and utilization index calculations, the available shipwork drydock days will be 304 workdays per year (assumes 61 days annually for drydock maintenance and set up time).

5. BOTTLENECKS

Capacity for identified bottlenecks should also be calculated on a one shift basis. In managing depot shop operations, the DoD Components shall attempt to eliminate bottlenecks using standard industrial engineering procedures. Where this is not possible, bottlenecks, whether operated on a single- or multi-shift basis, should be used as a pacing factor for workloading all affected shops.

CHAPTER 3

CAPACITY MEASUREMENT

A. CAPACITY INDEX

The capacity index indicates the amount of workload, expressed in actual direct labor hours, that a facility can effectively produce annually on a single shift, 40-hour week basis while producing the product mix that the facility is designed to accommodate. The basic formula for computing the capacity index is:

$$(\text{work positions}) \times (\text{availability factor}) \times (\text{annual productive hours})$$

Individual shop level capacity indexes are calculated and then rolled up to determine the capacity index of a particular facility. After determining the capacity index of a shop, it is appropriate to then identify reserve and excess capacity in relation to actual and planned workloads.

B. SHOP LEVEL CAPACITY INDEX

The following steps outline procedures for calculating a capacity index at the shop level, to include Shipyard Output Shops. The steps are illustrated in the flowchart at Appendix B. The formula is:

$$\begin{aligned} \text{Capacity Index} = \\ (\text{work positions}) \times (\text{availability factor}) \times (\text{annual productive hours}) \\ (0.95) \qquad \qquad \qquad (1615) \text{ or } (1537) \end{aligned}$$

1. Step 1. Obtain detailed shop layouts which identify the function of each shop, its boundaries, and its equipment/work bench locations. Verify and update the layouts to reflect the current product mix. If product mix changes are expected to result in shop reconfiguration(s) during the fiscal year, drawings should be obtained for each specific configuration.

2. Step 2. Determine and identify on the layouts the number of work stations and the work positions in each station. Calculate the number of work positions for each work station. To obtain the number of work positions in the shop, add the totals for the work stations within the shop. Work positions will be identified by the following rationale:

a. If only one person would operate the equipment/process, the work station will include the equipment/process and be recorded as one work position. Examples are: a work station of several pieces of robotic equipment operated by one person; a work station of several pieces of computer aided manufacturing equipment operated by one person; and a tire recapping machine operated by one person. In these instances, although the number of pieces of equipment varies from example to example, there is only one work position because in each case, the work position is operated by one person.

b. If the work station is designed to be operated by more than one person, one work position will be recorded for each person. Examples are engine test cells and radar ranges that are operated by more than one person. In each case, the number of work positions is the maximum number of people by which the work station

is designed to be operated.

c. If, under design conditions, a piece of equipment would only be infrequently utilized, or would support more than one work station, it will not be counted as an individual work position, but will be included in a designated work station and labeled support equipment. Examples are machine shop support equipment such as lathes and drill presses, which support multiple work stations.

d. If an equipment/process is designed to be frequently but not continuously utilized, it should be included as part of a related work position.

e. For the stall/work bay/aircraft dock situation, determine the optimum number of people who can effectively work during each phase of the process cycle. The weighted average over the cycle will equal the work position quantity of the work station. An analysis of product mix and process variations may be necessary to determine this value.

f. Bulk processing work stations such as plating, chemical cleaning, and heat treating shops can be regarded as one work station. The work position count of these stations is the number of persons necessary to effectively man the entire work station.

g. If a position is designed to be manned continuously but is currently vacant because of reduced workload quantity, it shall be counted as a work position.

Manhauled stations should continue to be counted as usable capacity!

h. For uncovered areas in which depot maintenance is routinely

performed year round on a parked vehicle such as an aircraft parking apron, the number of work positions is calculated in the same manner as in paragraph B.2.e. above. For uncovered areas in which equipment has been permanently installed, the number work positions will be determined based on the criteria in paragraphs B.2.a. through B.2.g. above.

i. It is recognized that a shop may be reconfigured during the year to accommodate variations in product mix. When this condition exists, the number of work positions for each configuration should be multiplied by the estimated percent of time during the year that the specific configuration will be in place. The resulting products for the different configurations should be added together to arrive at the annual weighted work position count for that shop.

j. Record the number of work positions. When identifying work positions for a future fiscal year, the impact of projected work position changes resulting from programmed Military Construction (MILCON) projects, shop reconfigurations, divestitures, changes in product mix, etc., must be taken into account.

3. Step 3. Multiply the result of Step 2 above by the Availability Factor.

4. Step 4. Multiply the product of Step 3 above by the applicable annual productive hour rate.

5. Step 5. Identify the shop reserve capacity index, if any, as outlined in Paragraph 3.F.

6. Step 6. Subtract the reserve capacity index from the result obtained in

Step 4 to determine the shop capacity index.

7. Step 7. Record the shop capacity index and reserve capacity index. Assign a production shop category, from Appendix D, to the shop.

C. SHOP LEVEL PHYSICAL CAPACITY INDEX

The following steps outline procedures for calculating a physical capacity index at the shop level. The formula is:

$$\text{Physical Capacity Index} = \\ (\text{work positions}) \times (\text{availability factor}) \times (\text{annual paid hours})$$

1. Step 1. Determine work position count as outlined in Steps 1-2 above.
2. Step 2. Multiply the work position count by the Availability Factor.
3. Step 3. Multiply the product of Step 2 by the annual paid hours to obtain the shop physical capacity index.

D. DEPOT CAPACITY INDEX

For each depot maintenance activity, add the appropriate capacity indexes of the individual shops to obtain a total depot capacity index, as portrayed in Step 8 of Appendix B.

E. NAVAL SHIPYARD CAPACITY INDEXES

Due to the unique nature of shipyard work (i.e., counting of work positions onboard ship is impractical), the capacity of naval shipyards will be expressed in terms of a Drydock Capacity Index and the capacity index of the Shipyard Output Shops. The formula for the drydock capacity index is:

$$\text{Drydock Capacity Index} = (\text{number of drydocks}) \times (\text{shipwork drydock days})$$

The capacity index data for Naval Shipyard Output Shops, as calculated using the procedures above for the shop level capacity index or physical capacity index, in conjunction with the drydock capacity index reflect the productive capacity of a naval shipyard.

F. RESERVE CAPACITY INDEX

Some available capacity may be identified and classified as reserve capacity. Rationale for retention of this capacity, which is not being utilized, shall be developed by the DoD Components. Reserve capacity may be retained for reasons of military necessity or as sound business practice. Reserve capacity shall be expressed as an index in DLHs, at shop and depot activity levels.

1. IDENTIFICATION

Identification of Reserve Capacity should be accomplished primarily at the shop level and should be specific. Retention of reserve capacity should be for sound reasons such as:

a. Military Necessity

(1) Needed to support surge or CORE requirements.

(2) Needed to provide responsiveness during national emergencies short of wartime.

(3) Needed to support battle/crash/in-service damage repair requirements.

(4) Needed to support executable mission requirements that are currently unfunded.

(5) Needed to support Foreign Military Sales requirements or commitments.

b. Sound Business Practice

(1) Retained because divestiture would be uneconomical.

(2) Needed to accommodate workload fluctuations, since capacity cannot be obtained or divested in amounts equal to workload fluctuations. Minimum capacity for all workloads in the assigned product mix must be retained.

(3) Retained to ensure smooth workflow and prevent shop-to-shop backlogs.

(4) Retained as part of a quality or productivity oriented management strategy (e.g. Just in time).

(5) Needed to accommodate a known future requirement or competition.

2. RECORDING

Reserve capacity will be separately identified by shop and attributed to the categories (in section 3.F.1) or to other specific rationale as approved by the Military Department managing the Depot Activity. In identifying reserve capacity, the following information will be recorded: depot, shop name, direct labor hours of reserve capacity, and the reason the capacity is retained.

G. EXCESS CAPACITY

This is available capacity for which no requirement exists. Excess capacity will be separately Identified by shop, and the following information will be recorded: depot, shop name, and direct labor hours.

CHAPTER 4

UTILIZATION MEASUREMENT

A. UTILIZATION INDEX

The Utilization Index is an indicator, expressed as a percentage, of the degree of alignment of workload to the designed capacity of a shop or depot after allowing for necessary Reserve Capacity. The fundamental formula underlying the utilization index is:

$$\text{Utilization Index} = \frac{\text{(Workload)}}{\text{(Capacity Index) - (Reserve Capacity Index)}} \times 100 = __\%$$

This index reflects utilization of capacity that is maintained to satisfy current or planned workload requirements. Therefore it recognizes that some reserve capacity may be maintained for military or sound business practice reasons. Since there are various workloads and capacity indexes, utilization indexes are more specifically defined by four formulas.

B. PEACETIME UTILIZATION INDEX

The Peacetime Utilization Index is an indicator, expressed as a percentage, of the degree of alignment of funded, planned, or actual workload to the designed capacity of a shop or depot. The formula for the Peacetime Utilization Index is:

$$\frac{\text{Funded Workload}}{(\text{Capacity Index}) - (\text{Reserve Capacity Index})} \times 100 = \text{ ______ } \%$$

The peacetime utilization index will be computed for each depot for the most recent actual (completed), current, and 3 planning years and may be computed for prior years and the Future Years Defense Program (FYDP) outyears. In this context, funded workload is:

- recent actual/ - actual executed workload prior
- prior years (per DoD 7220.9-M, reference (c))
- current year - current year estimate
- planning/ outyears - FYDP at the time of Service Program
Objective Memorandum (POM) submission

C. MISSION UTILIZATION INDEX

The Mission Utilization Index is an indicator, expressed as a percentage, of the degree of alignment of executable requirements to the designed capacity of a shop or depot. The mission utilization index will be computed for each depot for applicable planning year(s). Executable requirements are requirements that could be executed if funds were available. For calculating the mission utilization index, the executable requirements identified in the Service POMs will be used. The formula for the Mission Utilization Index is:

$$\frac{\text{Executable Requirements}}{\text{Capacity Index}} \times 100 = \text{___}\%$$

D. MOBILIZATION UTILIZATION INDEX

The Mobilization Utilization Index is an indicator, expressed as a percentage, of the degree of alignment of mobilization requirements to the designed physical capacity of a shop or depot. The Mobilization Utilization Index will be computed for each shop for the mobilization planning year. Mobilization requirements are requirements that would generate in the event of a given mobilization scenario. The mobilization requirements for a given period, as computed in the DoD Component depot maintenance posture plan, are divided by the physical capacity index for the same period to calculate the mobilization utilization index and then expressed as a percentage. The formula for the Mobilization Utilization Index is:

$$\frac{\text{Mobilization Requirements}}{\text{Physical Capacity Index}} \times 100 = \text{___}\%$$

E. NAVAL SHIPYARD UTILIZATION INDEX

Due to the unique nature of shipyard work, utilization will be expressed on the basis of a combination of the Drydock Utilization Index and the applicable Output Shop Indexes. The formula for the Drydock Utilization Index* is:

$$\frac{(\text{The sum of Shipwork Days In Drydock}^*)}{\text{Drydock Capacity Index}} \times 100 = \text{ ______ } \%$$

For index computation the sum of shipwork days can be either planned or actual days, dependent upon the period covered by the calculation. This index, in conjunction with Output Shop utilization index data, provides data on the utilization of a naval shipyard.

* See Standard Factors section for standard shipwork drydock days

CHAPTER 5

INFORMATION REQUIREMENTS

A. RECORDS

The DoD Components shall identify the level and location for retention of records regarding capacity and utilization data. As a minimum the following records should be maintained for review and validation of capacity and utilization determination:

1. Shop drawings for each shop configuration designating work positions, work station locations, and support equipment.
2. Capacity index calculations, including depot level capacity index data sorted by production shop category.
3. Identification and classification of reserve capacity along with supporting justification.
4. Identification of excess capacity.
5. Utilization calculation results as shown in Appendix C.
6. A depot summary of current capacity index and utilization index data as shown on the format at Appendix C.

B. REPORTING REQUIREMENTS

The reporting requirements defined in this section are designed to provide the Department of Defense with capacity and utilization data on organic depot maintenance activities. Data for each activity required to determine capacity and utilization data by Appendix D and this Handbook shall be reported by the respective DoD Components.

1. Each DoD Component shall maintain, in a central location, the data reported under this section in the format defined in Appendix E. A fiscal year and hard copy report in that format shall be submitted to the Deputy Under Secretary of Defense (Logistics), Attention: Assistant Deputy Under Secretary of Defense (Maintenance Policy, Programs and Resources), within 90 days of the end of the fiscal year. Reporting requirement symbol AP-MPP&R (A) XXXX is assigned to this reporting requirement.

2. Capacity data reporting systems shall be designed to provide an audit trail from the depot maintenance activity fiscal year end report to the shop capacity records and data.

3. As an integral part of the edit process on the report, a review shall be performed by maintenance or logistics experts to determine the accuracy, completeness, and reasonableness of the data being submitted. The report shall include a narrative analysis of significant changes, developments, information or trends portrayed by the report. The transmittal memorandum for the report shall identify a point of contact for

issues and questions relating to the data being reported.

4. Any one-time or additional reports required shall be prescribed by the Office of the Deputy Under Secretary of Defense (Logistics).

5. Reporting shall cover a period of the most recent actual (completed) fiscal year, the current (operating/budget) year and one planning year. Data for the planning year should reflect the impact of projected capacity changes resulting from programmed MILCON projects, shop reconfigurations, divestitures, changes in product mix and other related factors. Significant changes should be addressed in the Comments Section of the Report. Specific plans for excess capacity should also be addressed.

APPENDIX A

SHIPYARD PRODUCTION CATEGORIES OUTPUT SHOPS

Electronics

Machine Shop (Inside)

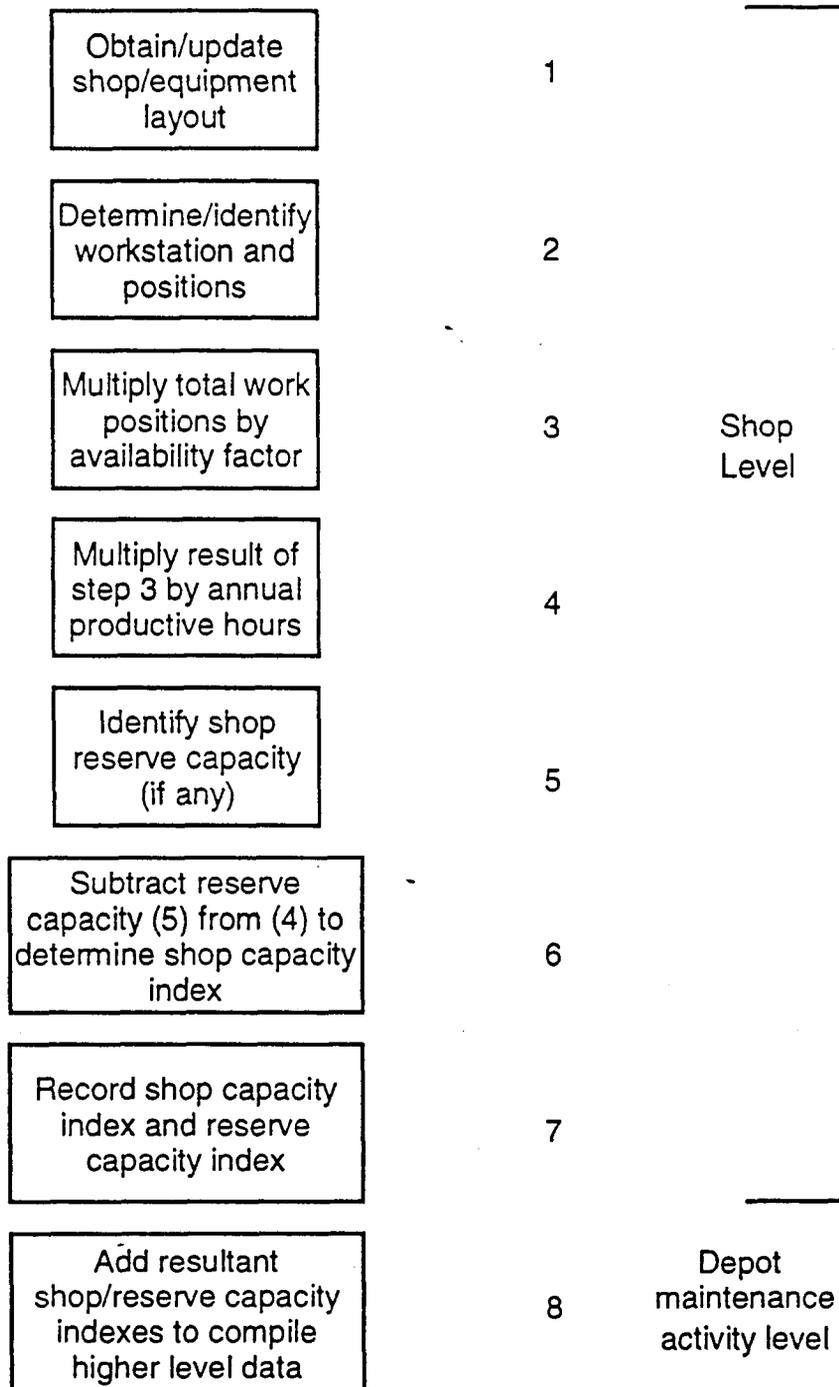
Foundry

Forge

Reparable Work Centers

APPENDIX B

CAPACITY INDEX DETERMINATION FLOW CHART



APPENDIX C

DEPOT CAPACITY/UTILIZATION SUMMARY SHEET

As of: _____

	DoD Fiscal Years				
	Past Actual	Current Year	Plan Year 1	Plan Year 2	Plan Year 3
Total Depot Capacity Index (DLH)					
Reserve Capacity Index (DLH)					
Funded Workload (DLH)					
Executable Requirements (DLH)					
Peacetime Utilization Index	%	%	%	%	%
Mission Utilization Index			%	%	%

NOTE: Capacity data for planning years should reflect the impact of projected capacity changes resulting from programmed MILGON projects, shop reconfigurations, divestitures, changes in product mix, etc.

APPENDIX D

PRODUCTION SHOP CATEGORIES

The production shop categories are grouped by major commodity. A single depot maintenance activity may perform work on more than one commodity. For example, one depot may perform work on aircraft and strategic missiles. Production shop categories from both the aircraft and missile groups may be used. If a shop is established to work on missile motors, the "missile motors" production shop category would be used. On the other hand, if the missile guidance systems are worked in a shop engaged primarily in aircraft electronics maintenance, the shop category for aircraft electronics will be used. This is the case because work is programmed into the activities by shop.

I. AIRCRAFT PRODUCTION SHOP CATEGORIES

A. Airframe. Covered areas associated with processing the airframe under those programs commonly identified as progressive aircraft rework, IRAN, maintenance, crash damage repair and/or overhaul, modernization, modification, etc. The work functions include stripping, disassembly, airframe repair, reassembly, systems check, and refinishing.

B. Engine. Covered areas associated with processing jet, turbojet, and reciprocating type aviation engines in terms of overhaul, low time, complete repair, and major inspection. The work functions include uncanning,

disassembly, cleaning, metals examination, examination and evaluation, parts reconditioning, subassembly, final assembly, test and preservation.

C. Accessories and Components. Covered areas associated with processing airframe and engine accessories such as surfaces, hydraulic components, electrical equipment, pneumatics equipment, landing gear, fuel accessories, propellers, airborne photographic equipment, instruments, etc.

D. Electronic, Communication, and Armament Systems. Covered areas associated with processing airborne communication, navigation equipment, airborne data computers, fire control, and bombing system equipment, etc., used by the aircraft in carrying out its assigned mission.

E. Armament. Covered areas associated with processing weapons, guns, and missiles used by the aircraft in carrying out its assigned mission.

F. Support Equipment. Covered areas associated with processing aviation general and special support equipment and aerospace ground equipment. Processing includes calibration.

G. Manufacture and Repair. Covered areas which are not an integral part of other categories previously prescribed, and which contribute to aircraft repair operations by such work functions as parts cleaning; painting and plating; parachute, ordnance, photographic, leather, and fabric repair; machine and metal repair and fabrication; etc.

H. Test and Calibration Area. That space, either covered or uncovered, which is used to test, trim, or calibrate engines, electronics, communications or armament systems. The equipment can be either installed on the aircraft or on special test stands. General ramp area will not be included in the area.

I. Other. Those areas used to perform productive work that are not included in categories A. through H., above. Includes ramp, apron, aircraft storage sites, work performed away from facility by field teams, etc.

J. General Shop Support. Those covered spaces which are second in providing general support to all aircraft production operations. General support includes functions such as management, supervision, engineering, clerical functions, plant maintenance, central or general storage, quality assurance, and materials testing. This category includes offices, cafeterias, supervisors' work space, shop parts storage areas, main aisles, wash and dressing areas, dispatching facilities, inspection facilities, etc., that are an integral part of shop areas defined above.

II. MISSILE PRODUCTION SHOP CATEGORIES

A. Missile Frame. Covered areas associated with processing the missile frame, interstage connection, or raceways. The work functions include damage repair, overhaul, modernization, modification, disassembly, reassembly, and systems check.

B. Missile Motors. Covered areas associated with processing solid or liquid propellant and vernier motors for overhauling complete repair, examination of propellant, major inspection and modification. The work functions include disassembling, cleaning, propellant examination and evaluation, parts reconditioning, subassembly, final assembly, test and calibration.

C. Guidance System and Components. Covered areas associated with processing components of missile guidance systems, stable platforms, flight controls, in-flight monitoring, computers, and infrared systems.

D. Payload System. Covered areas associated with processing components of reentry vehicles, warheads, etc.

E. Accessories and Components. Covered areas associated with processing components of fuel control, hydraulic, electrical, pressurization and arming and fusing systems.

G. Launch Equipment. Covered areas associated with processing components of systems used to launch missiles. Includes erectors, elevators, mobile transporters and launch platforms.

H. Support Equipment. Covered areas associated with processing components of aerospace ground, special, or general support equipment. Processing includes calibration.

I. Manufacture and Repair. Covered areas which are not an integral part of other categories previously described, and which contribute to the missile repair operation by such work functions as parts cleaning, painting, metal repair and fabrication.

J. Test and Calibration Area. Those spaces either covered or uncovered which are used to test or calibrate missile motors, and guidance and control systems. These can be either installed on the missile, missile transporter, or on special test stands.

K. Other. Those areas where productive work is performed that are not included in categories A. through J., above. These include outside areas and work performed "on site" by field teams, etc.

L. General Shop Support. Those covered spaces which are used in providing general support to all missile production operations. General support includes functions such as management, supervision, engineering, clerical functions, plant maintenance, central or general storage, quality assurance, and materials testing. This category includes offices, cafeterias, libraries, supervisors' work space, shop parts storage areas, main aisles, wash and dress areas, dispatching facilities, inspection facilities, etc., that are an integral part of shop areas defined above.

III. SHIP PRODUCTION SHOP CATEGORIES

A. Central Tool Shop

1. Covered areas associated with design, development and manufacture of prototype and conventional tooling such as cutting machines, dies, molds, cutters, jigs, fixtures, and special tools. Maintains calibration laboratory and operates the mechanical calibration program.

2. Other areas associated with the above.

B. Shipfitting

1. Covered areas associated with accomplishment of the fairing and development of ship body plans and hull forms; and the fabrication, erection, and installation of all hull strength structure, superstructure, access items, foundations, stowages, fittings, etc., for naval vessels and systems.

2. Other areas associated with the above.

C. Sheetmetal

1. Covered areas associated with: (a) fabricating and installing: ventilation and air conditioning duct work; storeroom, workshop, and stowage facilities; nonstructural bulkheads and partitions; and label plates; and (b) outfitting of galley, berthing, habitability and office spaces for naval vessels.

2. Other areas associated with the above.

D. Forge and Heat Treat

1. Covered areas associated with heat treating, drop forging, hand forging, and other hot working of ferrous and nonferrous metals; manufacture of heavy forgings, rings, flanges, struts, and ships' miscellaneous heavy forgings; and drop forging piping fittings of certified quality for nuclear work.

2. Other areas associated with the above.

E. Welding

1. Covered areas associated with welding, flame cutting, carbon arc gauging, and related processes. In addition to the major involvements of cutting and welding the various structural, sheetmetal, and piping materials, work functions include repair of castings; cobalting of valves; hard-surfacing of materials subjected to abrasive wear; shooting and welding studs and fasteners; metal spraying; silver soldering; casting, bonding, and welding of lead shielding; and stress relieving of shipboard weldments.

2. Other areas associated with the above.

F. Inside Machining

1. Covered areas associated with: horizontal boring mill, vertical boring mill, planner and heavy lathe work in manufacturing, alteration, and repair of shop

machinery and shipyard manufactured items; engine lathe, horizontal and vertical turret lathe, boring, facing, and turning work; milling, grinding, hobbing, broaching, shaping, slotting, lapping, honing, and balancing work; layout work and drilling on castings and fabrications; disassembly, inspection, repair, reassembly, and testing of main propulsion units, pumps, valves, turbines, air compressors, propellers, and miscellaneous auxiliary machinery; assembly of new manufactured equipment; and metal finishing processes including electroplating, dalic plating, galvanizing and metal polishing.

2. Other areas associated with the above.

G. Weapons

1. Covered areas associated with the repair, overhaul, alignment, installation, check out, test and calibration of all weapon systems and integrated systems, such as missile systems and associated components (gun mounts, turrets, saluting batteries, launching pads, components of fire control and fire control radar antennas). Work functions include repair, overhaul, calibration, adjustments and testing of gunsights, range finders, torpedo directors, telescopic gunsights, periscopes, binoculars, stereo trainers, and other miscellaneous repair of instruments, etc.

2. Other areas associated with the above.

H. Marine Machining

1. Covered areas associated with: (a) the removal, installation and testing of all main propulsion machinery, auxiliaries, rudders, shafting, sea valves, deck machinery, laundry and galley, arresting gear, and catapults on ships under construction or undergoing repair and conversion; (b) repairs, installations, and necessary tests on main and auxiliary diesel engines and associated equipment, ammunition hoists, and hydraulic speed gears on ships; and (c) refueling, repairing, and testing nuclear reactor plants and associated systems and components.

2. Other areas associated with the above:

I. Boilermaking

1. Covered areas associated with the repair, conversion, or building of steam generating equipment used to furnish steam to main and auxiliary machinery. Work functions include: the fabrication, assembly, installation, test, cleaning, and repair of the steam generators, uptakes, stacks, and blower ducts; and the fabrication, repair, and test of pressure vessels, incinerators, and spark arrestors.

2. Other areas associated with the above.

J. Electrical

1. Covered areas associated with: the installation, repair, maintenance, alteration, troubleshooting, and test of all power, lighting, and interior communication systems and equipment aboard naval ships and submarines; manufacture of switchboards, electrical control equipment, and components; the installation, repair, and alteration of nuclear electrical components and systems; submarine battery assembly, overhaul, and installation; repair and calibration of all electrical instrumentation; and installation, repair, and test of gyrocompass.

2. Other areas associated with the above.

K. Pipefitting

1. Covered areas associated with: the layout, fabrication, installation, dismantling, repairs, cleaning, testing, inspection, stress relieving of piping systems including nuclear systems; fabrication, installation, and repair of insulation and lagging on piping, machinery, vent ducts, bulkheads, and decks; fabrication, repair, and installation of radar waveguide; lead lining and burning of piping, tanks, boxes, and other projects; and installation, repair, and test of refrigeration, air conditioning, and oxygen-nitrogen systems.

2. Other areas associated with the above.

L. Woodworking

1. Covered areas associated with operations performed by boatbuilders, woodcraftsmen, and shipwrights in constructing and repairing wooden and

plastic boats, wooden portable buildings and shelters, hollow booms, wooden tanks, practice torpedoes and flight deck panels; repairing and manufacturing furniture and cabinets; laminating all sizes of wooden members; manufacturing or repairing accommodation ladders; performing dikiln operations; repairing and installing wooden decks; erecting pipe stagings and lifelines; fabricating and installing boat storages; building shipping cradles, shoring and blocking cargo aboard ships; manufacturing and repairing wooden gangways and platforms; manufacturing plastic items such as pipe, radomes, fairwaters, tanks, antenna cones, and submarine fairing plates; making resin foam pours in voids and performing grouting operations; installing and repairing plastic laminates and hull damping materials on naval vessels; installing polyethylene shielding around nuclear reactors; providing reference lines used in construction, repair, and alteration of types of ships; taking measurements, heights and locations ships' characteristics; and installing linoleum, rubber, asphalt, and ceramic tile.

2. Other areas associated with the above.

M. Electronics

1. Covered areas associated with accomplishing installation, pair, overhaul, modification, check out, adjustment, test, calibration of radar, sonar, communications, cryptograph, data processing, antennas, navigation, and electronic countermeasure equipment and systems on and for surface and submarine vessels and shore stations. Also, covered areas associated with the repair, calibration, and certification of electronic and nuclear instruments for shipyard, ships, and shore activities.

2. Other areas associated with the above.

N. Painting and Blasting

1. Covered areas associated with the surface preparation for and application or installation of protective, decorative, and functional paints, coatings, films; and deck, floor and wall coverings. Work functions include design, layout, lettering, and making of signs and posters; silk screen processing; artificial and natural wood graining and finishing; all types of painting and preservation on board ship; operation of pickling and chemical cleaning plant for preservation of material; abrasive blasting services; and the laying or installation of terrazzo, magnesite, and concrete.

2. Other areas associated with the above.

O. Rigging

1. Covered areas associated with the operations performed by riggers, sailmakers, tank and component cleaners, laborers, upholsterers, fabric workers, and divers required for repair, overhaul, conversion, and construction of naval vessels and equipment.

2. Other areas associated with the above.

P. Foundry

1. Covered areas associated with manufacturing cores for iron, steel, and nonferrous castings; preparing and mixing sand, processing and making molds, melting steel, pouring steel, and shaking out steel castings from molds after pouring; melting and pouring nonferrous metals and alloys, processing and making molds for brass castings, and shaking out nonferrous castings; processing and making molds for iron castings, melting iron-alloys, pouring iron, and shaking out iron castings from molds; cleaning castings; and shipping finished castings.

2. Other areas associated with the above.

Q. Patternmaking

1. Covered areas associated with the manufacture, repair, and alteration of wood patterns required to produce castings; manufacture of metal parts for wood and plastic patterns and metal patterns; manufacture of mock-ups for patterns; manufacture from sheet plastic by forming, fabrication, cementing, and dyeing; manufacture of plastic patterns; and receiving, storing and issuing pattern mock-ups, and models.

2. Other areas associated with the above.

R. Temporary Services

1. Covered areas associated with electrical, piping, and ventilation systems as related to temporary services. Temporary services include compressed air, water, steam, oxygen, electrical power and lighting, ventilation, telephones, inerting, air analysis, shipside sewage connections, communications systems, distilled water for ships' boilers, CO2 fire extinguishers, static dehumidification, electric, steam, and induction heat; besides responsibility for radioactive waste collection systems, delivery and distribution of pure water systems, distribution of electric power (supply from shore to 11,000 amps), breathing air systems for reactor plants, chilled water and air conditioning systems, filtering for reactor plants, ventilation systems, communications systems involved in nuclear refueling operations, and deoxygenating pure water nitrogen systems.

2. Other areas associated with the above.

S. Other. Those areas where productive work is performed that are not included in categories A. through R., above. These include work performed "on site" by field teams, etc.

T. General Shop Support. Those covered spaces which are used in providing general support to all ship production operations. General support includes functions such as management, supervision, engineering, clerical functions, plant maintenance, central or general storage, quality assurance, and materials testing. This category includes offices, cafeterias, libraries, supervisors' work space, shop parts storage areas, main aisles, wash and dressing areas, dispatching facilities, inspection facilities, etc., that are an integral part of shop areas defined above.

IV. COMBAT VEHICLE PRODUCTION SHOP CATEGORIES

A. Hull/Body, Frame and Installed Systems. Covered areas utilized for depot maintenance of complete vehicles. Work functions include repair, overhaul, rebuild, etc., cleaning, disassembly, reassembly, refinishing, and systems check.

B. Engine. Covered areas utilized for depot maintenance of engines and power trains. Work functions include disassembly, cleaning, examinations, parts reconditioning or replacement, subassembly, final assembly, test and preservation.

C. Accessories and Components. Covered areas utilized for depot maintenance of hull/body, frame, installed systems, engine and power train accessories and components.

D. Electronics and Communications. Covered areas utilized for depot maintenance of vehicular communication and fire control equipment.

E. Armament. Covered areas utilized for depot maintenance of vehicle arms, including special weapons, artillery, guns, and launchers.

F. Support Equipment. Covered areas associated with processing of vehicle general and special support equipment, including calibration functions.

G. Manufacture and Repair. Covered areas which are not an integral part of other categories previously prescribed, and which contribute to the vehicle repair operation by such work functions as parts cleaning; painting and plating; leather and fabric repair; machine and metal repair; fabrication, etc.

H. Test and Calibration Area. Those areas, either covered or uncovered, which are used to test, check out or calibrate engines, power trains, electronics, communication, fire control and armament systems. These can be installed on the vehicle or on special test stands.

I. Other. Those areas used to perform productive work that are not included in categories A. through H., above. Includes work performed in other than covered areas and that performed away from the facility by field teams, etc.

J. General Shop Support. Those covered areas which are used in providing general support to all vehicle production operations. General support includes such functions as management, supervision, engineering, production control, clerical functions, plant maintenance, central or general storage, quality assurance, and materials testing, etc. This category includes offices, cafeterias, libraries, supervisor's work space, shop parts storage areas, main aisles, wash and dressing areas, dispatching facilities, inspection facilities, etc., that are an integral part of shop areas defined above.

V. AUTOMOTIVE EQUIPMENT PRODUCTION SHOP CATEGORIES

A. Hull/Body, Frame, and Installed Systems. Covered areas utilized for depot maintenance of complete vehicles. Work functions include repair, overhaul, rebuild, etc., cleaning, etc., cleaning, disassembly, reassembly, refinishing, and systems check.

B. Engine. Covered areas utilized for depot maintenance of engines and power trains. Work functions include disassembly, cleaning, examinations, parts reconditioning or replacement, subassembly, final assembly, test and preservation.

C. Accessories and Components. Covered areas utilized for depot maintenance of hull/body, frame, installed systems, engines and power train accessories and components.

D. Electronics and Communications. Covered areas utilized for depot maintenance of vehicular communication and fire control equipment.

E. Armament. Covered areas utilized for depot maintenance of vehicle arms, including special weapons, artillery, guns, and launchers.

F. Support Equipment. Covered areas associated with processing of vehicle general and special support equipment, including calibration functions.

G. Manufacture and Repair. Covered areas which are not an integral part of other categories previously prescribed, and which contribute to the vehicle

repair operation by such work functions as parts cleaning; painting and plating; leather and fabric repair; machine and metal repair; fabrication; etc.

H. Test and Calibration Area. Those areas, either covered or uncovered, which are used to test, check out or calibrate engines, power trains, electronics, communication, fire control and armament systems. These can be installed on the vehicle or on special test stands.

I. Other. Those areas used to perform productive work that are not included in categories A. through H., above. Includes work performed in other than covered areas and that performed away from the facility by field teams, etc.

J. General Shop Support. Those covered areas which are used in providing general support to all vehicle production operations. General support includes such functions as management, supervision, engineering, production control, clerical functions, plant maintenance, central or general storage, quality assurance, and materials testing, etc. This category includes offices, cafeterias, libraries, supervisors' work space, shop parts storage areas, main aisles, wash and dressing areas, dispatching facilities, inspection facilities, etc., that are an integral part of shop areas defined above.

VI. CONSTRUCTION EQUIPMENT PRODUCTION SHOP CATEGORIES

A. Hull/Body, Frame, and Installed Systems. Covered areas utilized for depot maintenance of complete vehicles. Work functions include repair,

overhaul, rebuild, etc., cleaning, disassembly, reassembly, refinishing, and systems check.

B. Engine. Covered areas utilized for depot maintenance of engines and power trains. Work functions include disassembly, cleaning, examinations, parts reconditioning or replacement, subassembly, final assembly, test and preservation.

C. Accessories and Components. Covered areas utilized for depot maintenance of hull/body, frame, installed systems, engine, and power train accessories and components.

D. Support Equipment. Covered areas associated with processing of construction equipment general and special support equipment, including calibration functions.

E. Manufacture and Repair. Covered areas which are not an integral part of other categories previously prescribed, and which contribute to the construction equipment repair operation by such work functions as parts cleaning; painting and plating; leather and fabric repair; machine and metal repair; fabrication, etc.

F. Other. Those areas used to perform productive work that are not included in categories A. through E., above. Includes work performed in other than covered areas and that performed away from the facility by field teams, etc.

G. General Shop Support. Those covered areas which are used in providing general support to all vehicle production operations. General support includes such functions as management, supervision, engineering, production control, clerical functions, plant maintenance, central or general storage, quality assurance, and materials testing, etc. This category includes offices, cafeterias, libraries, supervisors' work space, shop parts storage areas, main aisles, wash and dressing areas, dispatching facilities, inspection facilities, etc., that are an integral part of shop areas defined above.

VII. ELECTRONICS AND COMMUNICATIONS PRODUCTION SHOP CATEGORIES

These shop categories are those associated with processing subsystems and components of electronic and communications systems which are not an integral part of another weapon or support system, but which are end item systems or nets within themselves, i.e., L Systems, STARCOM, etc.

A. Radio. Covered areas associated with processing radio equipment for overhaul, repair, conversion, and modification that are required in support of fixed, mobile, and portable electronic and communications systems. Categories of equipment include communication, control, navigation, auxiliary, relay, microwave, television, and radiological. Work functions include disassembly, inspection, cleaning, repair, parts reconditioning/replacement, manufacture, calibration, reassembly and test.

B. Radar. Covered areas associated with processing radar equipment for overhaul, repair, and modification that are required in support of fixed, mobile,

and portable electronic and communication systems. Radar equipment categories include navigation, search, surveillance, height finding and identification. Work functions include disassembly, inspection, cleaning, repair, parts reconditioning/replacement, manufacture, calibration, reassembly, test and alignment.

C. Wire and Communications. Covered areas associated with processing wire and communications equipment for overhaul, repair, conversion, rehabilitation and modification that are required in support of fixed, mobile, and portable electronic and communications systems. Wire and communications categories of equipment include teletype facsimiles, telephone and telegraph, intercom and public address systems, sound recording and reproduction, visible and invisible light communication and cryptological.

D. Other Communications and Electronic Equipment. Covered areas associated with processing other electrical and electronic components which are not associated with the support for fixed, mobile and portable electronic and communications systems. Categories of equipment include electric wire, power, and distribution equipment; alarm and signal systems; communication type instruments and laboratory equipment; ground photographic and photographic laboratory equipment; and training aids and devices.

E. Manufacture and Repair. Covered areas which are not an integral part of other categories prescribed herein, but which contribute to the accomplishment of maintenance operations associated with the previously defined categories. Included are painting, plating, cleaning, welding, machine

shop operations, metal and woodworking, canvas and upholstery repair, and plastic, graphic arts, and other repair of fabrication efforts associated with the electronic and communications effort.

F. Test and Calibration. Those areas, either covered or uncovered, which are used to test, calibrate, or align electronic and communications subsystems and components.

G. Support Equipment. Covered areas associated with processing general and special support equipment used in the maintenance of electronics and communications fixed, mobile, and portable systems.

H. Other. Those areas used to perform productive work that are not included in categories A. through G., above. This includes work performed away from the facility, by field teams, etc.

I. General Shop Support. Those covered areas which are used in providing general support to electronics and communication production operations. General support includes functions such as management, supervision, engineering, clerical functions, quality assurance, and materials testing. This category includes offices, cafeterias, supervisors' work space, shop parts storage areas, main aisles, wash and dressing areas, dispatching facilities, inspection facilities, libraries, etc., that are an integral part of shop areas defined above.

VIII. ORDNANCE, WEAPONS AND MUNITIONS PRODUCTION SHOP
CATEGORIES

A. Nuclear Weapons. Covered areas associated with renovation, modification, repair, inspection, test, assembly, disassembly, and demilitarization of nuclear weapons and nuclear weapon material.

B. Chemical and Bacteriological. Covered areas associated with renovation, modification, repair, inspection, test, assembly, disassembly, and demilitarization of chemical and bacteriological weapons and associated material.

C. Artillery and Guns. Covered areas associated with renovation, modification, repair, inspection, test, assembly, disassembly, and demilitarization of artillery and guns, including mortars, howitzers, bazookas and other weapons that are not self-propelled.

D. Small Arms. Covered areas associated with renovation, modification, repair, inspection, test, assembly, disassembly, and demilitarization of small arms, including all hand-held weapons, bayonets, and associated material.

E. Conventional Arms and Explosives. Covered areas associated with renovation, modification, repair, inspection, test, assembly, disassembly, and demilitarization of all items of conventional ammunition and explosives, including bombs, grenades, weapon warheads, rockets, mines, torpedoes, pyrotechnics, fuses, primers, etc.

F. Others. Those areas used to perform productive work that are not included in categories A. through E., above. Includes work performed in outside areas such as demolition and test and away from the production facility by field teams.

G. General Shop Support. Those covered areas which are used in providing general support to ordnance, weapons and munitions production operations. General support includes functions such as management, supervision, engineering, clerical functions, central or general storage, quality assurance, and check and test. This category includes offices, cafeterias, supervisors' work space, shop parts storage areas, main aisles, wash and dressing areas, dispatch points, inspection facilities, etc., that are an integral part of shop areas defined above.

IX. GENERATOR SET PRODUCTION SHOP CATEGORIES

A. Assembly/Disassembly. Covered areas associated with the assembly and disassembly of fixed and mobile generator sets.

B. Generator. Covered areas associated with the depot maintenance of generators. Work functions include disassembly, cleaning, examination, parts reconditioning, assembly, test and preservation.

C. Engine. Covered areas associated with the depot maintenance of engines. Work functions include disassembly, cleaning, examinations, parts reconditioning, assembly, test and preservation.

D. Accessories and Components. Covered areas associated with processing generator and engine accessories and components.

E. Support Equipment. Covered areas associated with processing generator set general and special support equipment, including calibration functions.

F. Manufacture and Repair. Covered areas which are not an integral part of other categories previously prescribed, and which contribute to generator set repair operations by such work functions as painting and plating; rubber products fabrication and repair; machine and metal repair and fabrication; etc.

G. Test and Calibration Area. Those areas, either covered or uncovered, which are used to test or calibrate engines and generators. The equipment can be either installed on the chassis or on special test stands.

H. Other. Those areas used to perform productive work that not included in categories A. through F., above. Includes work performed in other than covered facilities and away from the facility by field teams, etc.

I. General Shop Support. Those covered spaces which are used in providing general support to all generator set production operations. General

support includes functions such as management, supervision, engineering, clerical functions, plant maintenance, central or general storage, quality assurance, and materials testing. This category includes offices, cafeterias, supervisors' work space, shop parts storage areas, main aisles, wash and dressing areas, dispatching facilities, inspection facilities, etc., that are an integral part of shop areas defined above.

X. GENERAL PURPOSE EQUIPMENT PRODUCTION SHOP CATEGORIES

A. Rail Equipment. Covered areas associated with processing locomotives, rolling stock, and their associated accessories and components and supporting equipment. Work functions include cleaning, stripping, disassembly, repair, overhaul, reassembly, and test.

B. General Purpose Maintenance Tooling and Equipment. Covered areas associated with processing, metal cutting, wood working, general purpose test equipment, tools and fixtures. Work functions include cleaning, disassembly, parts rework, repair, modification, reassembly, and check and test.

C. Other. That area used to perform productive work on general purpose equipments not included in categories A. through B., above. Includes work performed in outside areas and away from the production facility by field teams.

D. General Shop Support. Those covered areas which are used in providing general support to all general purpose equipment production operations. General support includes function such as management, —

supervision, engineering, clerical functions, central or general storage, quality assurance, and check and test. This category includes offices, cafeterias, supervisory work space, shop parts storage areas, main aisles, wash and dressing areas, dispatch points, inspection facilities, etc., that are an integral part of shop areas defined above.

APPENDIX E

CAPACITY AND UTILIZATION FORMAT

Reporting Component /Command: _____

	FY	(Depot Name)	(Depot Name)	(Depot Name)	(Depot Name)
Total Depot Capacity Index (DLH)					
Past Year Actual	FY ____				
Current Year	FY ____				
Plan Year	FY ____				
Reserve Capacity Index (DLH)					
Past Year Actual	FY ____				
Current Year	FY ____				
Plan Year	FY ____				
Excess Capacity (DLH)					
Past Year Actual	FY ____				
Current Year	FY ____				
Plan Year	FY ____				
Peacetime Utilization Index (%)					
Past Year Actual	FY ____				
Current Year	FY ____				
Plan Year	FY ____				

APPENDIX F

CORE METHODOLOGY

In order to quantify CORE and relate it back to the contingency requirements, it is necessary to develop a workload sizing methodology. The most important aspect of this methodology is that it is driven by the contingency scenario, rather than a requirement from the maintenance depot.

A brief explanation of a conceptual depot maintenance CORE sizing methodology approach is provided below. The conceptual steps are identified by the alpha characters.

- a. Identify the specific types and the quantity of mission essential equipment to be used in the Joint Chiefs of Staff (JCS) approved contingency scenario(s).
- b. Determine a workload experience factor per unit based on known usage for each item of equipment. Make conversions based on applicable failure factors, op tempo adjustments, and scenario driven environmental/attrition factors.
- c. Compute scenario depot maintenance workload based on scenario readiness and sustainability requirements.
- d. Determine depot skills required to support scenario requirements expressed in direct labor hours, days, or other appropriate measure.

DRAFT

- e. Adjust for depot surge capacity. This provides the conversion necessary to account for the difference between peacetime and surge production capacity.
- f. Calculate basic CORE workload requirements.
- g. Apply an efficiency/economy factor to keep the required minimum CORE support effort from being exorbitantly and prohibitively expensive.
- h. Determine peacetime CORE requirement.
- i. Non-CORE workload is the difference between current or planned total peacetime workload and peacetime CORE requirements.

The capacity determined as the result of the CORE methodology computation is not the total capacity required. Capacity is also needed to handle "last source" repair requirements, cost control (competed workload), and rationally justified reserve capacity. CORE is computed as a reasonable statement of workload needed to establish and maintain contingency-driven weapon system support capabilities.

DRAFT



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON DC

12 8 MAR 1995

MEMORANDUM FOR BASE CLOSURE COMMISSION (Ms Ann Reese)

FROM: HQ USAF/RT

SUBJECT: USAF BRAC '95 Depot Information

The attached data is forwarded in response to your request for separate COBRA files for each installation in the Air Force's consolidation recommendation (reference questions to AF/LGM on 16 March and fax to AF/RTR on 18 March). Please note that five COBRA files were created with the same data used in our Air Force consolidation recommendation. That recommendation was based on aggregate actions for all five depots, so it is not appropriate to compare or examine each installation in isolation.

Please feel free to call if there are any questions. My point of contact is Lt Col Louise Eckhardt, DSN 225-4578.

JAY D. BLUME, Jr., Maj Gen, USAF
Special Assistant to the CSAF for
Realignment and Transition

Attachment:
80-05g

note: this is part of Tasker # RT 247

Department : Air Force
 Option Package : Hill AFB
 Scenario File : C:\COBRA508\BREAKOUT\HILL0323.CBR
 Std Pctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

Starting Year : 1996
 Final Year : 1996
 ROI Year : Never

NPV in 2015(\$K): 46,726
 1-Time Cost(\$K): 41,917

Net Costs (\$K) Constant Dollars	1996						Total	Beyond
	1996	1997	1998	1999	2000	2001		
MilCon	6,197	3,098	3,098	3,098	3,098	0	18,590	0
Person	0	0	0	0	0	0	0	0
Overhd	445	750	854	959	863	767	4,639	426
Moving	2,706	2,706	2,788	0	0	0	8,200	0
Missio	0	0	0	0	0	0	0	0
Other	4,412	4,412	4,546	0	0	0	13,370	0
TOTAL	13,760	10,966	11,287	4,057	3,961	767	44,799	426

	1996	1997	1998	1999	2000	2001	Total
POSITIONS ELIMINATED							
Off	0	0	0	0	0	0	0
Enl	0	0	0	0	0	0	0
Civ	0	0	0	0	0	0	0
TOT	0	0	0	0	0	0	0
POSITIONS REALIGNED							
Off	0	0	0	0	0	0	0
Enl	0	0	0	0	0	0	0
Stu	0	0	0	0	0	0	0
Civ	0	0	0	0	0	0	0
TOT	0	0	0	0	0	0	0

Summary:

 COBRA File 1 of 5. This IS NOT a stand-alone file.

At the request of the DBRCA, separate COBRA files for each installation were created using the same data previously used for the Air Force's consolidation recommendation. The recommendation (and data used to develop the COBRA files) was based on a package approach and it is not appropriate to examine each installation in isolation. The data used in this file is simply a shred-out of the data used for the TRC portion of the recommendation.

Department : Air Force
 Option Package : Hill AFB
 Scenario File : C:\COBRA508\BREAKOUT\HILL0323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

Costs (\$K)	Constant Dollars						Total	Beyond
	1996	1997	1998	1999	2000	2001		
MilCon	6,197	3,098	3,098	3,098	3,098	0	18,590	0
Person	0	0	0	0	0	0	0	0
Overhd	493	893	1,093	1,293	1,293	1,293	6,357	1,000
Moving	2,706	2,706	2,788	0	0	0	8,200	0
Missio	0	0	0	0	0	0	0	0
Other	4,412	4,412	4,546	0	0	0	13,370	0
TOTAL	13,807	11,109	11,525	4,391	4,391	1,293	40,517	1,000

Savings (\$K)	Constant Dollars						Total	Beyond
	1996	1997	1998	1999	2000	2001		
MilCon	0	0	0	0	0	0	0	0
Person	0	0	0	0	0	0	0	0
Overhd	48	143	238	334	430	526	1,719	574
Moving	0	0	0	0	0	0	0	0
Missio	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
TOTAL	48	143	238	334	430	526	1,719	574

Department : Air Force
 Option Package : Hill AFB
 Scenario File : C:\COBRAS08\BREAKOUT\HILL0323.CBR
 Std Fctrs File : C:\COBRAS08\BREAKOUT\DEPOT.SFF

(All values in Dollars)

Category	Cost	Sub-Total
-----	----	-----
Construction		
Military Construction	18,590,000	
Family Housing Construction	0	
Information Management Account	0	
Land Purchases	0	
Total - Construction		18,590,000
Personnel		
Civilian RIF	0	
Civilian Early Retirement	0	
Civilian New Hires	0	
Eliminated Military PCS	0	
Unemployment	0	
Total - Personnel		0
Overhead		
Program Planning Support	0	
Mothball / Shutdown	1,757,500	
Total - Overhead		1,757,500
Moving		
Civilian Moving	0	
Civilian PPS	0	
Military Moving	0	
Freight	0	
One-Time Moving Costs	8,200,000	
Total - Moving		8,200,000
Other		
HAP / RSE	0	
Environmental Mitigation Costs	0	
One-Time Unique Costs	13,370,000	
Total - Other		13,370,000
Total One-Time Costs		41,917,500
One-Time Savings		
Military Construction Cost Avoidances	0	
Family Housing Cost Avoidances	0	
Military Moving	0	
Land Sales	0	
One-Time Moving Savings	0	
Environmental Mitigation Savings	0	
One-Time Unique Savings	0	
Total One-Time Savings		0
Total Net One-Time Costs		41,917,500

Department : Air Force
 Option Package : Hill AFB
 Scenario File : C:\COBRA508\BREAKOUT\HILL0323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

INPUT SCREEN ONE - GENERAL SCENARIO INFORMATION

Model Year One : FY 1996

Model does Time-Phasing of Construction/Shutdown: Yes

Base Name	Strategy:
-----	-----
HILL, UT	Realignment
KELLY, TX	Realignment
MCCLELLAN, CA	Realignment
ROBINS, GA	Realignment
TINKER, OK	Realignment

Summary:

 COBRA File 1 of 5. This IS NOT a stand-alone file.

At the request of the DBRCA, separate COBRA files for each installation were created using the same data previously used for the Air Force's consolidation recommendation. The recommendation (and data used to develop the COBRA files) were based on a package approach and it is not appropriate to examine each installation in isolation. The data used in this file is simply a shred-out of the data used for the TRC portion of the recommendation.

INPUT SCREEN TWO - DISTANCE TABLE

From Base:	To Base:	Distance:
-----	-----	-----
HILL, UT	KELLY, TX	1,363 mi
HILL, UT	MCCLELLAN, CA	671 mi
HILL, UT	ROBINS, GA	2,006 mi
HILL, UT	TINKER, OK	1,152 mi
KELLY, TX	MCCLELLAN, CA	1,733 mi
KELLY, TX	ROBINS, GA	1,045 mi
KELLY, TX	TINKER, OK	488 mi
MCCLELLAN, CA	ROBINS, GA	2,570 mi
MCCLELLAN, CA	TINKER, OK	1,641 mi
ROBINS, GA	TINKER, OK	929 mi

INPUT SCREEN THREE - MOVEMENT TABLE

INPUT SCREEN FOUR - STATIC BASE INFORMATION

Name: HILL, UT

Total Officer Employees:	617	RPMA Non-Payroll (\$K/Year):	6,020
Total Enlisted Employees:	3,949	Communications (\$K/Year):	2,402
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	16,024
Total Civilian Employees:	8,691	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	31.0%	Family Housing (\$K/Year):	5,586
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.91
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities (KSF):	13,772	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	0	Activity Code:	38
Enlisted VHA (\$/Month):	26		
Per Diem Rate (\$/Day):	98	Homeowner Assistance Program:	No
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

Department : Air Force
 Option Package : Hill AFB
 Scenario File : C:\COBRA508\BREAKOUT\HILL0323.CBR
 Std Pctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

INPUT SCREEN FOUR - STATIC BASE INFORMATION

Name: KELLY, TX

Total Officer Employees:	801	RPMA Non-Payroll (\$K/Year):	16,993
Total Enlisted Employees:	3,419	Communications (\$K/Year):	3,681
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	13,945
Total Civilian Employees:	12,678	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	14.0%	Family Housing (\$K/Year):	2,870
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.84
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	16,316	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	106	Activity Code:	43
Enlisted VHA (\$/Month):	80	Homeowner Assistance Program:	No
Per Diem Rate (\$/Day):	97	Unique Activity Information:	No
Freight Cost (\$/Ton/Mile):	0.07		

Name: MCCLELLAN, CA

Total Officer Employees:	449	RPMA Non-Payroll (\$K/Year):	5,663
Total Enlisted Employees:	2,325	Communications (\$K/Year):	2,978
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	21,097
Total Civilian Employees:	8,862	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	32.0%	Family Housing (\$K/Year):	6,330
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	1.24
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	11,516	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	168	Activity Code:	58
Enlisted VHA (\$/Month):	126	Homeowner Assistance Program:	No
Per Diem Rate (\$/Day):	101	Unique Activity Information:	No
Freight Cost (\$/Ton/Mile):	0.07		

Name: ROBINS, GA

Total Officer Employees:	739	RPMA Non-Payroll (\$K/Year):	6,147
Total Enlisted Employees:	3,269	Communications (\$K/Year):	3,887
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	21,001
Total Civilian Employees:	11,119	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	54.0%	Family Housing (\$K/Year):	6,125
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.85
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	13,709	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	56	Activity Code:	76
Enlisted VHA (\$/Month):	35	Homeowner Assistance Program:	No
Per Diem Rate (\$/Day):	69	Unique Activity Information:	No
Freight Cost (\$/Ton/Mile):	0.07		

Name: TINKER, OK

Total Officer Employees:	1,430	RPMA Non-Payroll (\$K/Year):	3,616
Total Enlisted Employees:	5,995	Communications (\$K/Year):	6,714
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	26,012
Total Civilian Employees:	11,678	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	7.5%	Family Housing (\$K/Year):	3,068
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.91
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	14,607	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	16	Activity Code:	83
Enlisted VHA (\$/Month):	19	Homeowner Assistance Program:	No
Per Diem Rate (\$/Day):	77	Unique Activity Information:	No
Freight Cost (\$/Ton/Mile):	0.07		

Department : Air Force
 Option Package : Hill AFB
 Scenario File : C:\COBRAS08\BREAKOUT\HILL0323.CBR
 Std Fctrs File : C:\COBRAS08\BREAKOUT\DEPOT.SFF

INPUT SCREEN FIVE - DYNAMIC BASE INFORMATION

Name: HILL, UT

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	4,412	4,412	4,546	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	2,706	2,706	2,788	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Req'd (\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost (\$K):	200	600	800	1,000	1,000	1,000
Misc Recurring Save (\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule (%):	0%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	0%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc (\$K):	0	0	0	0	0	0
Fam Housing Avoidnc (\$K):	0	0	0	0	0	0
Procurement Avoidnc (\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown (KSF):	1,406					
Perc Family Housing ShutDown:						0.0%

Name: KELLY, TX

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Req'd (\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost (\$K):	0	0	0	0	0	0
Misc Recurring Save (\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule (%):	0%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	0%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc (\$K):	0	0	0	0	0	0
Fam Housing Avoidnc (\$K):	0	0	0	0	0	0
Procurement Avoidnc (\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown (KSF):	0					
Perc Family Housing ShutDown:						0.0%

Name: MCCLELLAN, CA

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Req'd (\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost (\$K):	0	0	0	0	0	0
Misc Recurring Save (\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule (%):	0%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	0%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc (\$K):	0	0	0	0	0	0
Fam Housing Avoidnc (\$K):	0	0	0	0	0	0
Procurement Avoidnc (\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown (KSF):	0					
Perc Family Housing ShutDown:						0.0%

Department : Air Force
 Option Package : Hill AFB
 Scenario File : C:\COBRA508\BREAKOUT\HILL0323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

INPUT SCREEN FIVE - DYNAMIC BASE INFORMATION

Name: ROBINS, GA

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	0%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	0%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0	Perc Family Housing ShutDown:				0.0%

Name: TINKER, OK

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	0%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	0%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0	Perc Family Housing ShutDown:				0.0%

INPUT SCREEN SEVEN - BASE MILITARY CONSTRUCTION INFORMATION

Name: HILL, UT

Description	Categ	New MilCon	Rehab MilCon	Total Cost(\$K)
TRC Rearr/Renovate	OTHER	0	204,000	4,590
Squeeze down Cost	OTHER	0	404,000	14,000

Department : Air Force
 Option Package : Hill AFB
 Scenario File : C:\COBRAS08\BREAKOUT\HILL0323.CBR
 Std Fctrs File : C:\COBRAS08\BREAKOUT\DEPOT.SFF

STANDARD FACTORS SCREEN ONE - PERSONNEL

Percent Officers Married:	76.80%	Civ Early Retire Pay Factor:	9.00%
Percent Enlisted Married:	66.90%	Priority Placement Service:	60.00%
Enlisted Housing MilCon:	80.00%	PPS Actions Involving PCS:	50.00%
Officer Salary(\$/Year):	78,668.00	Civilian PCS Costs (\$):	28,800.00
Off BAQ with Dependents(\$):	7,073.00	Civilian New Hire Cost(\$):	4,000.00
Enlisted Salary(\$/Year):	36,148.00	Nat Median Home Price(\$):	114,600.00
Enl BAQ with Dependents(\$):	5,162.00	Home Sale Reimburse Rate:	10.00%
Avg Unemploy Cost(\$/Week):	174.00	Max Home Sale Reimburs(\$):	22,385.00
Unemployment Eligibility(Weeks):	18	Home Purch Reimburse Rate:	5.00%
Civilian Salary(\$/Year):	46,642.00	Max Home Purch Reimburs(\$):	11,191.00
Civilian Turnover Rate:	15.00%	Civilian Homeowning Rate:	64.00%
Civilian Early Retire Rate:	10.00%	HAP Home Value Reimburse Rate:	22.90%
Civilian Regular Retire Rate:	5.00%	HAP Homeowner Receiving Rate:	5.00%
Civilian RIF Pay Factor:	39.00%	RSE Home Value Reimburse Rate:	0.00%
SF File Desc:	Depot Factors	RSE Homeowner Receiving Rate:	0.00%

STANDARD FACTORS SCREEN TWO - FACILITIES

RPMA Building SF Cost Index:	0.93	Rehab vs. New MilCon Cost:	0.00%
BOS Index (RPMA vs population):	0.54	Info Management Account:	0.00%
(Indices are used as exponents)		MilCon Design Rate:	0.00%
Program Management Factor:	10.00%	MilCon SIOH Rate:	0.00%
Caretaker Admin(SF/Care):	162.00	MilCon Contingency Plan Rate:	0.00%
Mothball Cost (\$/SF):	1.25	MilCon Site Preparation Rate:	0.00%
Avg Bachelor Quarters(SF):	256.00	Discount Rate for NPV.RPT/ROI:	2.75%
Avg Family Quarters(SF):	1,320.00	Inflation Rate for NPV.RPT/ROI:	0.00%
APPDET.RPT Inflation Rates:			
1996: 0.00% 1997: 2.90% 1998: 3.00%		1999: 3.00% 2000: 3.00% 2001: 3.00%	

STANDARD FACTORS SCREEN THREE - TRANSPORTATION

Material/Assigned Person(Lb):	710	Equip Pack & Crate(\$/Ton):	284.00
HHG Per Off Family (Lb):	14,500.00	Mil Light Vehicle(\$/Mile):	0.43
HHG Per Enl Family (Lb):	9,000.00	Heavy/Spec Vehicle(\$/Mile):	1.40
HHG Per Mil Single (Lb):	6,400.00	POV Reimbursement(\$/Mile):	0.18
HHG Per Civilian (Lb):	18,000.00	Avg Mil Tour Length (Years):	4.10
Total HHG Cost (\$/100Lb):	35.00	Routine PCS(\$/Pers/Tour):	6,437.00
Air Transport (\$/Pass Mile):	0.20	One-Time Off PCS Cost(\$):	9,142.00
Misc Exp (\$/Direct Employ):	700.00	One-Time Enl PCS Cost(\$):	5,761.00

STANDARD FACTORS SCREEN FOUR - MILITARY CONSTRUCTION

Category	UM	\$/UM	Category	UM	\$/UM
Horizontal	(SY)	0	Optional Category A	()	0
Waterfront	(LF)	0	Optional Category B	()	0
Air Operations	(SF)	0	Optional Category C	()	0
Operational	(SF)	0	Optional Category D	()	0
Administrative	(SF)	0	Optional Category E	()	0
School Buildings	(SF)	0	Optional Category F	()	0
Maintenance Shops	(SF)	0	Optional Category G	()	0
Bachelor Quarters	(SF)	0	Optional Category H	()	0
Family Quarters	(EA)	0	Optional Category I	()	0
Covered Storage	(SF)	0	Optional Category J	()	0
Dining Facilities	(SF)	0	Optional Category K	()	0
Recreation Facilities	(SF)	0	Optional Category L	()	0
Communications Facil	(CF)	0	Optional Category M	()	0
Shipyard Maintenance	(SF)	0	Optional Category N	()	0
RDT & E Facilities	(SF)	0	Optional Category O	()	0
POE Storage	(BL)	0	Optional Category P	()	0
Ammunition Storage	(SF)	0	Optional Category Q	()	0
Medical Facilities	(SF)	0	Optional Category R	()	0
Environmental	()	0			

Department : Air Force
 Option Package : Kelly AFB
 Scenario File : C:\COBRA508\BREAKOUT\KELL0323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

Starting Year : 1996
 Final Year : 1998
 ROI Year : 1999 (1 Year)

NPV in 2015(\$K): -265,174
 1-Time Cost(\$K): 29,731

Net Costs (\$K) Constant Dollars

	1996	1997	1998	1999	2000	2001	Total	Beyond
MilCon	10,053	5,027	0	-5,100	0	0	9,980	0
Person	0	0	-9,679	-21,776	-21,776	-21,776	-75,007	-21,776
Overhd	239	629	1,531	-503	-503	-503	890	-503
Moving	808	808	4,806	0	0	0	6,422	0
Missio	0	0	0	0	0	0	0	0
Other	1,760	1,760	1,813	0	0	0	5,333	0
TOTAL	12,860	8,224	-1,529	-27,379	-22,279	-22,279	-52,381	-22,279

	1996	1997	1998	1999	2000	2001	Total
POSITIONS ELIMINATED							
Off	0	0	1	0	0	0	1
Enl	0	0	9	0	0	0	9
Civ	0	0	458	0	0	0	458
TOT	0	0	468	0	0	0	468

	1996	1997	1998	1999	2000	2001	Total
POSITIONS REALIGNED							
Off	0	0	0	0	0	0	0
Enl	0	0	0	0	0	0	0
Stu	0	0	0	0	0	0	0
Civ	0	0	0	0	0	0	0
TOT	0						

Summary:

COBRA File 2 of 5. This IS NOT a stand-alone file.

At the request of the DBRCA, separate COBRA files for each installation were created using the same data previously used for the Air Force's consolidation recommendation. The recommendation (and data used to develop the COBRA files) was based on a package approach and it is not appropriate to examine each installation in isolation. The data used in this file is simply a shred-out of the data used for the TRC portion of the recommendation.

Department : Air Force
 Option Package : Kelly AFB
 Scenario File : C:\COBRA508\BREAKOUT\KELL0323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

	Costs (\$K) Constant Dollars						Total	Beyond
	1996	1997	1998	1999	2000	2001		
MilCon	10,053	5,027	0	0	0	0	15,080	0
Person	0	0	1,213	0	0	0	1,213	0
Overhd	239	629	2,414	1,000	1,000	1,000	6,282	1,000
Moving	808	808	4,806	0	0	0	6,422	0
Missio	0	0	0	0	0	0	0	0
Other	1,760	1,760	1,813	0	0	0	5,333	0
TOTAL	12,860	8,224	10,247	1,000	1,000	1,000	34,331	1,000

	Savings (\$K) Constant Dollars						Total	Beyond
	1996	1997	1998	1999	2000	2001		
MilCon	0	0	0	5,100	0	0	5,100	0
Person	0	0	10,893	21,776	21,776	21,776	76,221	21,776
Overhd	0	0	883	1,503	1,503	1,503	5,391	1,503
Moving	0	0	0	0	0	0	0	0
Missio	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
TOTAL	0	0	11,776	28,379	23,279	23,279	86,712	23,279

Department : Air Force
 Option Package : Kelly AFB
 Scenario File : C:\COBRA508\BREAKOUT\KELL0323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

(All values in Dollars)

Category	Cost	Sub-Total
-----	----	-----
Construction		
Military Construction	15,080,000	
Family Housing Construction	0	
Information Management Account	0	
Land Purchases	0	
Total - Construction		15,080,000
Personnel		
Civilian RIF	818,567	
Civilian Early Retirement	193,098	
Civilian New Hires	0	
Eliminated Military PCS	60,991	
Unemployment	140,940	
Total - Personnel		1,213,596
Overhead		
Program Planning Support	89,312	
Mothball / Shutdown	1,592,500	
Total - Overhead		1,681,812
Moving		
Civilian Moving	0	
Civilian PPS	3,974,400	
Military Moving	0	
Freight	0	
One-Time Moving Costs	2,448,000	
Total - Moving		6,422,400
Other		
HAP / RSE	0	
Environmental Mitigation Costs	0	
One-Time Unique Costs	5,333,000	
Total - Other		5,333,000
Total One-Time Costs		29,730,808
One-Time Savings		
Military Construction Cost Avoidances	5,100,000	
Family Housing Cost Avoidances	0	
Military Moving	0	
Land Sales	0	
One-Time Moving Savings	0	
Environmental Mitigation Savings	0	
One-Time Unique Savings	0	
Total One-Time Savings		5,100,000
Total Net One-Time Costs		24,630,808

Department : Air Force
 Option Package : Kelly AFB
 Scenario File : C:\COBRA508\BREAKOUT\KELL0323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

INPUT SCREEN ONE - GENERAL SCENARIO INFORMATION

Model Year One : FY 1996

Model does Time-Phasing of Construction/Shutdown: Yes

Base Name	Strategy:
-----	-----
HILL, UT	Realignment
KELLY, TX	Realignment
MCCLELLAN, CA	Realignment
ROBINS, GA	Realignment
TINKER, OK	Realignment

Summary:

 COBRA File 2 of 5. This is not a stand-alone file.

At the request of the DBRCA, separate COBRA files for each installation were created using the same data previously used for the Air Force's consolidation recommendation. The recommendation (and data used to develop the COBRA files) were based on a package approach and it is not appropriate to examine each installation in isolation. The data used in this file is simply a shred-out of the data used for the TRC portion of the recommendation.

INPUT SCREEN TWO - DISTANCE TABLE

From Base:	To Base:	Distance:
-----	-----	-----
HILL, UT	KELLY, TX	1,363 mi
HILL, UT	MCCLELLAN, CA	671 mi
HILL, UT	ROBINS, GA	2,006 mi
HILL, UT	TINKER, OK	1,152 mi
KELLY, TX	MCCLELLAN, CA	1,733 mi
KELLY, TX	ROBINS, GA	1,045 mi
KELLY, TX	TINKER, OK	488 mi
MCCLELLAN, CA	ROBINS, GA	2,570 mi
MCCLELLAN, CA	TINKER, OK	1,641 mi
ROBINS, GA	TINKER, OK	929 mi

INPUT SCREEN THREE - MOVEMENT TABLE

INPUT SCREEN FOUR - STATIC BASE INFORMATION

Name: HILL, UT

Total Officer Employees:	617	RPMA Non-Payroll (\$K/Year):	6,020
Total Enlisted Employees:	3,949	Communications (\$K/Year):	2,402
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	16,024
Total Civilian Employees:	8,691	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	31.0%	Family Housing (\$K/Year):	5,560
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.91
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	13,772	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	0	Activity Code:	38
Enlisted VHA (\$/Month):	26		
Per Diem Rate (\$/Day):	98	Homeowner Assistance Program:	No
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

Department : Air Force
 Option Package : Kelly AFB
 Scenario File : C:\COBRA508\BREAKOUT\KELL0323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

INPUT SCREEN FOUR - STATIC BASE INFORMATION

Name: KELLY, TX

Total Officer Employees:	801	RPMA Non-Payroll (\$K/Year):	16,993
Total Enlisted Employees:	3,419	Communications (\$K/Year):	3,681
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	13,945
Total Civilian Employees:	12,678	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	14.0%	Family Housing (\$K/Year):	2,870
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.84
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	16,316	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	106	Activity Code:	43
Enlisted VHA (\$/Month):	80	Homeowner Assistance Program:	No
Per Diem Rate (\$/Day):	97	Unique Activity Information:	No
Freight Cost (\$/Ton/Mile):	0.07		

Name: MCCLELLAN, CA

Total Officer Employees:	449	RPMA Non-Payroll (\$K/Year):	5,663
Total Enlisted Employees:	2,325	Communications (\$K/Year):	2,978
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	21,097
Total Civilian Employees:	8,882	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	32.0%	Family Housing (\$K/Year):	6,330
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	1.24
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	11,516	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	168	Activity Code:	58
Enlisted VHA (\$/Month):	126	Homeowner Assistance Program:	No
Per Diem Rate (\$/Day):	101	Unique Activity Information:	No
Freight Cost (\$/Ton/Mile):	0.07		

Name: ROBINS, GA

Total Officer Employees:	739	RPMA Non-Payroll (\$K/Year):	6,147
Total Enlisted Employees:	3,269	Communications (\$K/Year):	3,887
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	21,001
Total Civilian Employees:	11,119	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	54.0%	Family Housing (\$K/Year):	6,225
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.85
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	13,709	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	56	Activity Code:	76
Enlisted VHA (\$/Month):	35	Homeowner Assistance Program:	No
Per Diem Rate (\$/Day):	69	Unique Activity Information:	No
Freight Cost (\$/Ton/Mile):	0.07		

Name: TINZER, OK

Total Officer Employees:	1,430	RPMA Non-Payroll (\$K/Year):	3,616
Total Enlisted Employees:	5,995	Communications (\$K/Year):	6,714
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	26,012
Total Civilian Employees:	11,678	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	7.5%	Family Housing (\$K/Year):	3,068
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.90
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	14,677	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	16	Activity Code:	83
Enlisted VHA (\$/Month):	19	Homeowner Assistance Program:	No
Per Diem Rate (\$/Day):	77	Unique Activity Information:	No
Freight Cost (\$/Ton/Mile):	0.07		

Department : Air Force
 Option Package : Kelly AFB
 Scenario File : C:\COBRA508\BREAKOUT\KELL0323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

INPUT SCREEN FIVE - DYNAMIC BASE INFORMATION

Name: HILL, UT

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Req'd (\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost (\$K):	0	0	0	0	0	0
Misc Recurring Save (\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule (%):	0%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	0%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc (\$K):	0	0	0	0	0	0
Fam Housing Avoidnc (\$K):	0	0	0	0	0	0
Procurement Avoidnc (\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown (KSF):	0	Perc Family Housing ShutDown:				0.0%

Name: KELLY, TX

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	1,760	1,760	1,813	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	808	808	832	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Req'd (\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost (\$K):	200	600	800	1,000	1,000	1,000
Misc Recurring Save (\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule (%):	0%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	0%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc (\$K):	0	0	0	5,100	0	0
Fam Housing Avoidnc (\$K):	0	0	0	0	0	0
Procurement Avoidnc (\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown (KSF):	1,274	Perc Family Housing ShutDown:				0.0%

Name: MCCLELLAN, CA

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Req'd (\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost (\$K):	0	0	0	0	0	0
Misc Recurring Save (\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule (%):	0%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	0%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc (\$K):	0	0	0	0	0	0
Fam Housing Avoidnc (\$K):	0	0	0	0	0	0
Procurement Avoidnc (\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown (KSF):	0	Perc Family Housing ShutDown:				0.0%

Department : Air Force
 Option Package : Kelly AFB
 Scenario File : C:\COBRA508\BREAKOUT\KELL0323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

INPUT SCREEN FIVE - DYNAMIC BASE INFORMATION

Name: ROBINS, GA

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	0%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	0%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0					
			Perc Family Housing ShutDown:			0.0%

Name: TINKER, OK

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	0%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	0%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0					
			Perc Family Housing ShutDown:			0.0%

INPUT SCREEN SIX - BASE PERSONNEL INFORMATION

Name: KELLY, TX

	1996	1997	1998	1999	2000	2001
Off Force Struc Change:	0	0	0	0	0	0
Enl Force Struc Change:	0	0	0	0	0	0
Civ Force Struc Change:	0	0	0	0	0	0
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	0	0	-1	0	0	0
Enl Scenario Change:	0	0	-9	0	0	0
Civ Scenario Change:	0	0	-458	0	0	0
Off Change(No Sal Save):	0	0	0	0	0	0
Enl Change(No Sal Save):	0	0	0	0	0	0
Civ Change(No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

Department : Air Force
 Option Package : Kelly AFB
 Scenario File : C:\COBRA508\BREAKOUT\KELL0323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

INPUT SCREEN SEVEN - BASE MILITARY CONSTRUCTION INFORMATION

Name: KELLY, TX

Description	Categ	New MilCon	Rehab MilCon	Total Cost (\$K)
TRC Rearr/Renovate	OTHER	0	181,000	4,080
Squeeze Down Costs	OTHER	0	316,000	11,000

STANDARD FACTORS SCREEN ONE - PERSONNEL

Percent Officers Married:	76.80%	Civ Early Retire Pay Factor:	9.00%
Percent Enlisted Married:	66.90%	Priority Placement Service:	60.00%
Enlisted Housing MilCon:	80.00%	PPS Actions Involving PCS:	50.00%
Officer Salary (\$/Year):	78,668.00	Civilian PCS Costs (\$):	28,800.00
Off BAQ with Dependents (\$):	7,073.00	Civilian New Hire Cost (\$):	4,000.00
Enlisted Salary (\$/Year):	36,148.00	Nat Median Home Price (\$):	114,600.00
Enl BAQ with Dependents (\$):	5,162.00	Home Sale Reimburse Rate:	10.00%
Avg Unemploy Cost (\$/Week):	174.00	Max Home Sale Reimburs (\$):	22,385.00
Unemployment Eligibility (Weeks):	18	Home Purch Reimburse Rate:	5.00%
Civilian Salary (\$/Year):	46,642.00	Max Home Purch Reimburs (\$):	11,191.00
Civilian Turnover Rate:	15.00%	Civilian Homeowning Rate:	64.00%
Civilian Early Retire Rate:	10.00%	HAP Home Value Reimburse Rate:	22.90%
Civilian Regular Retire Rate:	5.00%	HAP Homeowner Receiving Rate:	5.00%
Civilian RIF Pay Factor:	39.00%	RSE Home Value Reimburse Rate:	0.00%
SF File Desc:	Depot Factors	RSE Homeowner Receiving Rate:	0.00%

STANDARD FACTORS SCREEN TWO - FACILITIES

RPMA Building SF Cost Index:	0.93	Rehab vs. New MilCon Cost:	0.00%
BOS Index (RPMA vs population):	0.54	Info Management Account:	0.00%
(Indices are used as exponents)		MilCon Design Rate:	0.00%
Program Management Factor:	10.00%	MilCon SIOH Rate:	0.00%
Caretaker Admin (SF/Care):	162.00	MilCon Contingency Plan Rate:	0.00%
Mothball Cost (\$/SF):	1.25	MilCon Site Preparation Rate:	0.00%
Avg Bachelor Quarters (SF):	256.00	Discount Rate for NPV.RPT/ROI:	2.75%
Avg Family Quarters (SF):	1,320.00	Inflation Rate for NPV.RPT/ROI:	0.00%
APPDET.RPT Inflation Rates:			
1996: 0.00%	1997: 2.90%	1998: 3.00%	1999: 3.00%
			2000: 3.00%
			2001: 3.00%

STANDARD FACTORS SCREEN THREE - TRANSPORTATION

Material/Assigned Person (Lb):	710	Equip Pack & Crate (\$/Ton):	284.00
HHG Per Off Family (Lb):	14,500.00	Mil Light Vehicle (\$/Mile):	0.43
HHG Per Enl Family (Lb):	9,000.00	Heavy/Spec Vehicle (\$/Mile):	1.40
HHG Per Mil Single (Lb):	6,400.00	POV Reimbursement (\$/Mile):	0.18
HHG Per Civilian (Lb):	18,000.00	Avg Mil Tour Length (Years):	4.10
Total HHG Cost (\$/100Lb):	35.00	Routine PCS (\$/Pers/Tour):	6,437.00
Air Transport (\$/Pass Mile):	0.20	One-Time Off PCS Cost (\$):	9,142.00
Misc Exp (\$/Direct Employ):	700.00	One-Time Enl PCS Cost (\$):	5,761.00

Department : Air Force
 Option Package : Kelly AFB
 Scenario File : C:\COBRAS08\BREAKOUT\KELL0323.CBR
 Std Fctrs File : C:\COBRAS08\BREAKOUT\DEPOT.SFF

STANDARD FACTORS SCREEN FOUR - MILITARY CONSTRUCTION

Category	UM	\$/UM	Category	UM	\$/UM
-----	--	----	-----	--	----
Horizontal	(SY)	0	Optional Category A	()	0
Waterfront	(LF)	0	Optional Category B	()	0
Air Operations	(SF)	0	Optional Category C	()	0
Operational	(SF)	0	Optional Category D	()	0
Administrative	(SF)	0	Optional Category E	()	0
School Buildings	(SF)	0	Optional Category F	()	0
Maintenance Shops	(SF)	0	Optional Category G	()	0
Bachelor Quarters	(SF)	0	Optional Category H	()	0
Family Quarters	(EA)	0	Optional Category I	()	0
Covered Storage	(SF)	0	Optional Category J	()	0
Dining Facilities	(SF)	0	Optional Category K	()	0
Recreation Facilities	(SF)	0	Optional Category L	()	0
Communications Facil	(SF)	0	Optional Category M	()	0
Shipyards Maintenance	(SF)	0	Optional Category N	()	0
RDT & E Facilities	(SF)	0	Optional Category O	()	0
POL Storage	(BL)	0	Optional Category P	()	0
Ammunition Storage	(SF)	0	Optional Category Q	()	0
Medical Facilities	(SF)	0	Optional Category R	()	0
Environmental	()	0			

Department : Air Force
 Option Package : McClellan AFB
 Scenario File : C:\COBRA508\BREAKOUT\MCCLO323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

Starting Year : 1996
 Final Year : 1996
 ROI Year : Never

NPV in 2015 (\$K): 44,305
 1-Time Cost (\$K): 41,680

	Net Costs (\$K) Constant Dollars						Total	Beyond
	1996	1997	1998	1999	2000	2001		
MilCon	6,357	3,178	3,178	3,178	3,178	0	19,070	0
Person	0	0	0	0	0	0	0	0
Overhd	476	752	828	904	779	654	4,394	253
Moving	1,757	1,757	1,811	0	0	0	5,325	0
Missio	0	0	0	0	0	0	0	0
Other	5,034	5,034	5,187	0	0	0	15,255	0
TOTAL	13,624	10,722	11,004	4,082	3,957	654	44,044	253

	1996	1997	1998	1999	2000	2001	Total
POSITIONS ELIMINATED							
Off	0	0	0	0	0	0	0
Enl	0	0	0	0	0	0	0
Civ	0	0	0	0	0	0	0
TOT	0	0	0	0	0	0	0

	1996	1997	1998	1999	2000	2001	Total
POSITIONS REALIGNED							
Off	0	0	0	0	0	0	0
Enl	0	0	0	0	0	0	0
Stu	0	0	0	0	0	0	0
Civ	0	0	0	0	0	0	0
TCT	0	0	0	0	0	0	0

Summary:

 COBRA File 3 of 5. This IS NOT a stand-alone file.

At the request of the DBRCA, separate COBRA files for each installation were created using the same data previously used for the Air Force's consolidation recommendation. The recommendation (and data used to develop the COBRA files) was based on a package approach and it is not appropriate to examine each installation in isolation. The data used in this file is simply a shred-out of the data used for the TRC portion of the recommendation.

Department : Air Force
 Option Package : McClellan AFB
 Scenario File : C:\COBRA508\BREAKOUT\MCCLO323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

Costs (\$K)	Constant Dollars						Total	Beyond
	1996	1997	1998	1999	2000	2001		
MilCon	6,357	3,178	3,178	3,178	3,178	0	19,070	0
Person	0	0	0	0	0	0	0	0
Overhd	538	938	1,138	1,338	1,338	1,338	6,630	1,000
Moving	1,757	1,757	1,811	0	0	0	5,325	0
Missio	0	0	0	0	0	0	0	0
Other	5,034	5,034	5,187	0	0	0	15,255	0
TOTAL	13,686	10,908	11,315	4,517	4,517	1,338	46,280	1,000

Savings (\$K)	Constant Dollars						Total	Beyond
	1996	1997	1998	1999	2000	2001		
MilCon	0	0	0	0	0	0	0	0
Person	0	0	0	0	0	0	0	0
Overhd	62	186	310	434	559	684	2,236	746
Moving	0	0	0	0	0	0	0	0
Missio	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
TOTAL	62	186	310	434	559	684	2,236	746

Department : Air Force
 Option Package : McClellan AFB
 Scenario File : C:\COBRA508\BREAKOUT\MCCLO323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

(All values in Dollars)

Category	Cost	Sub-Total
-----	----	-----
Construction		
Military Construction	19,070,000	
Family Housing Construction	0	
Information Management Account	0	
Land Purchases	0	
Total - Construction		19,070,000
Personnel		
Civilian RIF	0	
Civilian Early Retirement	0	
Civilian New Hires	0	
Eliminated Military PCS	0	
Unemployment	0	
Total - Personnel		0
Overhead		
Program Planning Support	0	
Mothball / Shutdown	2,030,000	
Total - Overhead		2,030,000
Moving		
Civilian Moving	0	
Civilian PPS	0	
Military Moving	0	
Freight	0	
One-Time Moving Costs	5,325,000	
Total - Moving		5,325,000
Other		
HAP / RSE	0	
Environmental Mitigation Costs	0	
One-Time Unique Costs	15,255,000	
Total - Other		15,255,000
Total One-Time Costs		41,680,000
One-Time Savings		
Military Construction Cost Avoidance:	0	
Family Housing Cost Avoidances	0	
Military Moving	0	
Land Sales	0	
One-Time Moving Savings	0	
Environmental Mitigation Savings	0	
One-Time Unique Savings	0	
Total One-Time Savings		0
Total Net One-Time Costs		41,680,000

Department : Air Force
 Option Package : McClellan AFB
 Scenario File : C:\COBRAS08\BREAKOUT\MCCCL0323.CBR
 Std Fctrs File : C:\COBRAS08\BREAKOUT\DEPOT.SFF

INPUT SCREEN ONE - GENERAL SCENARIO INFORMATION

Model Year One : FY 1996

Model does Time-Phasing of Construction/Shutdown: Yes

Base Name	Strategy:
-----	-----
HILL, UT	Realignment
KELLY, TX	Realignment
MCCLELLAN, CA	Realignment
ROBINS, GA	Realignment
TINKER, OK	Realignment

Summary:

COBRA File 3 of 5. This IS NOT a stand-alone file.

At the request of the DBRCA, separate COBRA files for each installation were created using the same data previously used for the Air Force's consolidation recommendation. The recommendation (and data used to develop the COBRA files) were based on a package approach and it is not appropriate to examine each installation in isolation. The data used in this file is simply a shred-out of the data used for the TRC portion of the recommendation.

INPUT SCREEN TWO - DISTANCE TABLE

From Base:	To Base:	Distance:
-----	-----	-----
HILL, UT	KELLY, TX	1,363 mi
HILL, UT	MCCLELLAN, CA	671 mi
HILL, UT	ROBINS, GA	2,006 mi
HILL, UT	TINKER, OK	1,152 mi
KELLY, TX	MCCLELLAN, CA	1,733 mi
KELLY, TX	ROBINS, GA	1,045 mi
KELLY, TX	TINKER, OK	488 mi
MCCLELLAN, CA	ROBINS, GA	2,570 mi
MCCLELLAN, CA	TINKER, OK	1,641 mi
ROBINS, GA	TINKER, OK	929 mi

INPUT SCREEN THREE - MOVEMENT TABLE

INPUT SCREEN FOUR - STATIC BASE INFORMATION

Name: HILL, UT

Total Officer Employees:	617	RPMA Non-Payroll (\$K/Year):	6,020
Total Enlisted Employees:	3,949	Communications (\$K/Year):	2,402
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	16,024
Total Civilian Employees:	8,691	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	31.0%	Family Housing (\$K/Year):	9,588
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.91
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	13,772	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	0	Activity Code:	38
Enlisted VHA (\$/Month):	26		
Per Diem Rate (\$/Day):	98	Homeowner Assistance Program:	No
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

Department : Air Force
 Option Package : McClellan AFB
 Scenario File : C:\COBRA508\BREAKOUT\MCCLO323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

INPUT SCREEN FOUR - STATIC BASE INFORMATION

Name: KELLY, TX

Total Officer Employees:	801	RPMA Non-Payroll (\$K/Year):	16,993
Total Enlisted Employees:	3,419	Communications (\$K/Year):	3,681
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	13,945
Total Civilian Employees:	12,678	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	14.0%	Family Housing (\$K/Year):	2,870
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.84
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities (KSF):	16,316	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	106	Activity Code:	43
Enlisted VHA (\$/Month):	80	Homeowner Assistance Program:	No
Per Diem Rate (\$/Day):	97	Unique Activity Information:	No
Freight Cost (\$/Ton/Mile):	0.07		

Name: MCCLELLAN, CA

Total Officer Employees:	449	RPMA Non-Payroll (\$K/Year):	5,663
Total Enlisted Employees:	2,325	Communications (\$K/Year):	2,978
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	21,097
Total Civilian Employees:	8,882	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	32.0%	Family Housing (\$K/Year):	6,330
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	1.24
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities (KSF):	11,516	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	168	Activity Code:	58
Enlisted VHA (\$/Month):	126	Homeowner Assistance Program:	No
Per Diem Rate (\$/Day):	101	Unique Activity Information:	No
Freight Cost (\$/Ton/Mile):	0.07		

Name: ROBINS, GA

Total Officer Employees:	739	RPMA Non-Payroll (\$K/Year):	6,147
Total Enlisted Employees:	3,269	Communications (\$K/Year):	3,887
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	21,001
Total Civilian Employees:	11,119	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	54.0%	Family Housing (\$K/Year):	6,225
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.65
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities (KSF):	13,709	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	56	Activity Code:	76
Enlisted VHA (\$/Month):	35	Homeowner Assistance Program:	No
Per Diem Rate (\$/Day):	69	Unique Activity Information:	No
Freight Cost (\$/Ton/Mile):	0.07		

Name: TINKER, OK

Total Officer Employees:	1,430	RPMA Non-Payroll (\$K/Year):	3,616
Total Enlisted Employees:	5,995	Communications (\$K/Year):	6,714
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	26,012
Total Civilian Employees:	11,678	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	7.5%	Family Housing (\$K/Year):	3,068
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.90
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities (KSF):	14,607	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	16	Activity Code:	83
Enlisted VHA (\$/Month):	19	Homeowner Assistance Program:	No
Per Diem Rate (\$/Day):	77	Unique Activity Information:	No
Freight Cost (\$/Ton/Mile):	0.07		

Department : Air Force
 Option Package : McClellan AFB
 Scenario File : C:\COBRA508\BREAKOUT\MCLL0323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

INPUT SCREEN FIVE - DYNAMIC BASE INFORMATION

Name: HILL, UT

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Req'd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	0%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	0%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0	Perc Family Housing ShutDown:				0.0%

Name: KELLY, TX

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Req'd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	0%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	0%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0	Perc Family Housing ShutDown:				0.0%

Name: MCCLELLAN, CA

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	5,034	5,034	5,187	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	1,757	1,757	1,811	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Req'd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	200	600	800	1,000	1,000	1,000
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	0%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	0%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	1,624	Perc Family Housing ShutDown:				0.0%

Department : Air Force
 Option Package : McClellan AFB
 Scenario File : C:\COBRA508\BREAKOUT\MCCLO323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

INPUT SCREEN FIVE - DYNAMIC BASE INFORMATION

Name: ROBINS, GA

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	0%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	0%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0	Perc Family Housing ShutDown:				0.0%

Name: TINKER, OK

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	0%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	0%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0	Perc Family Housing ShutDown:				0.0%

INPUT SCREEN SEVEN - BASE MILITARY CONSTRUCTION INFORMATION

Name: MCCLELLAN, CA

Description	Categ	New MilCon	Rehab MilCon	Total Cost (\$K)
TRC Rearr/Renovate	OTHER	0	834,000	18,770
Squeeze Down Costs	OTHER	0	8,000	300

Department : Air Force
 Option Package : McClellan AFB
 Scenario File : C:\COBRA508\BREAKOUT\MCCLO323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

STANDARD FACTORS SCREEN ONE - PERSONNEL

Percent Officers Married:	76.80%	Civ Early Retire Pay Factor:	9.00%
Percent Enlisted Married:	66.90%	Priority Placement Service:	60.00%
Enlisted Housing MilCon:	80.00%	PPS Actions Involving PCS:	50.00%
Officer Salary(\$/Year):	78,668.00	Civilian PCS Costs (\$):	28,800.00
Off BAQ with Dependents(\$):	7,073.00	Civilian New Hire Cost(\$):	4,000.00
Enlisted Salary(\$/Year):	36,148.00	Nat Median Home Price(\$):	114,600.00
Enl BAQ with Dependents(\$):	5,162.00	Home Sale Reimburse Rate:	10.00%
Avg Unemploy Cost(\$/Week):	174.00	Max Home Sale Reimburs(\$):	22,385.00
Unemployment Eligibility(Weeks):	18	Home Purch Reimburse Rate:	5.00%
Civilian Salary(\$/Year):	46,642.00	Max Home Purch Reimburs(\$):	11,191.00
Civilian Turnover Rate:	15.00%	Civilian Homeowning Rate:	64.00%
Civilian Early Retire Rate:	10.00%	HAP Home Value Reimburse Rate:	22.90%
Civilian Regular Retire Rate:	5.00%	HAP Homeowner Receiving Rate:	5.00%
Civilian RIF Pay Factor:	39.00%	RSE Home Value Reimburse Rate:	0.00%
SF File Desc:	Depot Factors	RSE Homeowner Receiving Rate:	0.00%

STANDARD FACTORS SCREEN TWO - FACILITIES

RPMA Building SF Cost Index:	0.93	Rehab vs. New MilCon Cost:	0.00%
BOS Index (RPMA vs population):	0.54	Info Management Account:	0.00%
(Indices are used as exponents)		MilCon Design Rate:	0.00%
Program Management Factor:	10.00%	MilCon SIOH Rate:	0.00%
Caretaker Admin(SF/Care):	162.00	MilCon Contingency Plan Rate:	0.00%
Mothball Cost (\$/SF):	1.25	MilCon Site Preparation Rate:	0.00%
Avg Bachelor Quarters(SF):	256.00	Disc.unt Rate for NPV.RPT/ROI:	2.75%
Avg Family Quarters(SF):	1,320.00	Inflation Rate for NPV.RPT/ROI:	0.00%
APPDET.RPT Inflation Rates:			
1996: 0.00%	1997: 2.90%	1998: 3.00%	1999: 3.00%
		2000: 3.00%	2001: 3.00%

STANDARD FACTORS SCREEN THREE - TRANSPORTATION

Material/Assigned Person(Lb):	710	Equip Pack & Crate(\$/Ton):	284.00
HHG Per Off Family (Lb):	14,500.00	Mil Light Vehicle(\$/Mile):	0.43
HHG Per Enl Family (Lb):	9,000.00	Heavy/Spec Vehicle(\$/Mile):	1.40
HHG Per Mil Single (Lb):	6,400.00	POV Reimbursement(\$/Mile):	0.18
HHG Per Civilian (Lb):	18,000.00	Avg Mil Tour Length (Years):	4.10
Total HHG Cost (\$/100Lb):	35.00	Routine PCS(\$/Pers/Tour):	6,437.00
Air Transport (\$/Pass Mile):	0.20	One-Time Off PCS Cost(\$):	9,142.00
Misc Exp (\$/Direct Employ):	700.00	One-Time Enl PCS Cost(\$):	5,761.00

STANDARD FACTORS SCREEN FOUR - MILITARY CONSTRUCTION

Category	UM	\$/UM	Category	UM	\$/UM
Horizontal	(SY)	0	Optional Category A	()	0
Waterfront	(LF)	0	Optional Category B	()	0
Air Operations	(SF)	0	Optional Category C	()	0
Operational	(SF)	0	Optional Category D	()	0
Administrative	(SF)	0	Optional Category E	()	0
School Buildings	(SF)	0	Optional Category F	()	0
Maintenance Shops	(SF)	0	Optional Category G	()	0
Bachelor Quarters	(SF)	0	Optional Category H	()	0
Family Quarters	(EA)	0	Optional Category I	()	0
Covered Storage	(SF)	0	Optional Category J	()	0
Dining Facilities	(SF)	0	Optional Category K	()	0
Recreation Facilities	(SF)	0	Optional Category L	()	0
Communications Facil	(SF)	0	Optional Category M	()	0
Shipyards Maintenance	(SF)	0	Optional Category N	()	0
RDT & E Facilities	(SF)	0	Optional Category O	()	0
PCL Storage	(SF)	0	Optional Category P	()	0
Ammunition Storage	(SF)	0	Optional Category Q	()	0
Medical Facilities	(SF)	0	Optional Category R	()	0
Environmental	()	0			

Department : Air Force
 Option Package : Robins AFB
 Scenario File : C:\COBRA508\BREAKOUT\ROBI0323.CBR
 Std Pctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

Starting Year : 1996
 Final Year : 1998
 ROI Year : 1999 (1 Year)

NPV in 2015(\$K): -205,930
 1-Time Cost(\$K): 29,387

Net Costs (\$K) Constant Dollars	1996						Total	Beyond
	1996	1997	1998	1999	2000	2001		
MilCon	7,193	3,597	0	-10,600	0	0	190	0
Person	115	115	-7,997	-17,499	-17,499	-17,499	-60,265	-17,499
Overhd	391	731	1,402	187	187	187	3,086	187
Moving	2,342	2,342	5,948	0	0	0	10,633	0
Missio	0	0	0	0	0	0	0	0
Other	1,798	1,798	1,853	0	0	0	5,449	0
TOTAL	11,840	8,584	1,206	-27,912	-17,312	-17,312	-40,906	-17,312

POSITIONS ELIMINATED	1996						Total
	1996	1997	1998	1999	2000	2001	
Off	0	0	1	0	0	0	1
Enl	0	0	7	0	0	0	7
Civ	0	0	368	0	0	0	368
TOT	0	0	376	0	0	0	376

POSITIONS REALIGNED	1996						Total
	1996	1997	1998	1999	2000	2001	
Off	0	0	0	0	0	0	0
Enl	0	0	0	0	0	0	0
Stu	0	0	0	0	0	0	0
Civ	40	40	38	0	0	0	118
TOT	40	40	38	0	0	0	118

Summary:

COBRA File 4 of 5. This IS NOT a stand-alone file.

At the request of the DBRCA, separate COBRA files for each installation were created using the same data previously used for the Air Force's consolidation recommendation. The recommendation (and data used to develop the COBRA files) was based on a package approach and it is not appropriate to examine each installation in isolation. The data used in this file is simply a shred-out of the data used for the TRC portion of the recommendation.

Department : Air Force
 Option Package : Robins AFB
 Scenario File : C:\COBRA508\BREAKOUT\ROB10323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

Costs (\$K)	Constant Dollars						Total	Beyond
	1996	1997	1998	1999	2000	2001		
MilCon	7,193	3,597	0	0	0	0	10,790	0
Person	115	115	755	0	0	0	985	0
Overhd	410	822	2,076	1,088	1,088	1,088	6,573	1,088
Moving	2,342	2,342	5,948	0	0	0	10,633	0
Missio	0	0	0	0	0	0	0	0
Other	1,798	1,798	1,853	0	0	0	5,449	0
TOTAL	11,859	8,675	10,632	1,088	1,088	1,088	34,431	1,088

Savings (\$K)	Constant Dollars						Total	Beyond
	1996	1997	1998	1999	2000	2001		
MilCon	0	0	0	10,600	0	0	10,600	0
Person	0	0	8,751	17,499	17,499	17,499	61,250	17,499
Overhd	18	91	674	901	901	901	3,487	901
Moving	0	0	0	0	0	0	0	0
Missio	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
TOTAL	18	91	9,426	29,000	18,400	18,400	75,337	18,400

Department : Air Force
 Option Package : Robins AFB
 Scenario File : C:\COBRAS08\BREAKOUT\ROBI0323.CBR
 Std Fctrs File : C:\COBRAS08\BREAKOUT\DEPOT.SFF

(All values in Dollars)

Category	Cost	Sub-Total
-----	----	-----
Construction		
Military Construction	10,790,000	
Family Housing Construction	0	
Information Management Account	0	
Land Purchases	0	
Total - Construction		10,790,000
Personnel		
Civilian RIF	527,521	
Civilian Early Retirement	205,691	
Civilian New Hires	112,000	
Eliminated Military PCS	49,469	
Unemployment	90,828	
Total - Personnel		985,509
Overhead		
Program Planning Support	158,597	
Mothball / Shutdown	1,371,250	
Total - Overhead		1,529,847
Moving		
Civilian Moving	2,691,435	
Civilian PPS	3,196,800	
Military Moving	0	
Freight	26,851	
One-Time Moving Costs	4,718,000	
Total - Moving		10,633,087
Other		
HAP / RSE	0	
Environmental Mitigation Costs	0	
One-Time Unique Costs	5,449,000	
Total - Other		5,449,000
Total One-Time Costs		29,387,443

One-Time Savings		
Military Construction Cost Avoidances	10,600,000	
Family Housing Cost Avoidances	0	
Military Moving	0	
Land Sales	0	
One-Time Moving Savings	0	
Environmental Mitigation Savings	0	
One-Time Unique Savings	0	
Total One-Time Savings		10,600,000
Total Net One-Time Costs		18,787,443

Department : Air Force
 Option Package : Robins AFB
 Scenario File : C:\COBRA508\BREAKOUT\ROBI0323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

Base: HILL, UT
 (All values in Dollars)

Category	Cost	Sub-Total
Construction		
Military Construction	0	
Family Housing Construction	0	
Information Management Account	0	
Land Purchases	0	
Total - Construction		0
Personnel		
Civilian RIF	0	
Civilian Early Retirement	0	
Civilian New Hires	112,000	
Eliminated Military PCS	0	
Unemployment	0	
Total - Personnel		112,000
Overhead		
Program Planning Support	0	
Mothball / Shutdown	0	
Total - Overhead		0
Moving		
Civilian Moving	0	
Civilian PPS	0	
Military Moving	0	
Freight	0	
One-Time Moving Costs	0	
Total - Moving		0
Other		
HAP / RSE	0	
Environmental Mitigation Costs	0	
One-Time Unique Costs	0	
Total - Other		0
Total One-Time Costs		112,000
One-Time Savings		
Military Construction Cost Avoidances	0	
Family Housing Cost Avoidances	0	
Military Moving	0	
Land Sales	0	
One-Time Moving Savings	0	
Environmental Mitigation Savings	0	
One-Time Unique Savings	0	
Total One-Time Savings		0
Total Net One-Time Costs		112,000

Department : Air Force
 Option Package : Robins AFB
 Scenario File : C:\COBRA508\BREAKOUT\ROBI0323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

Base: ROBINS, GA
 (All values in Dollars)

Category	Cost	Sub-Total

Construction		
Military Construction	10,790,000	
Family Housing Construction	0	
Information Management Account	0	
Land Purchases	0	
Total - Construction		10,790,000
Personnel		
Civilian RIF	527,521	
Civilian Early Retirement	205,691	
Civilian New Hires	0	
Eliminated Military PCS	49,469	
Unemployment	90,828	
Total - Personnel		873,509
Overhead		
Program Planning Support	158,597	
Mothball / Shutdown	1,371,250	
Total - Overhead		1,529,847
Moving		
Civilian Moving	2,691,435	
Civilian PPS	3,196,800	
Military Moving	0	
Freight	26,851	
One-Time Moving Costs	4,718,000	
Total - Moving		10,633,087
Other		
HAP / RSE	0	
Environmental Mitigation Costs	0	
One-Time Unique Costs	5,449,000	
Total - Other		5,449,000

Total One-Time Costs		29,275,443

One-Time Savings		
Military Construction Cost Avoidances	10,600,000	
Family Housing Cost Avoidances	0	
Military Moving	0	
Land Sales	0	
One-Time Moving Savings	0	
Environmental Mitigation Savings	0	
One-Time Unique Savings	0	

Total One-Time Savings		10,600,000

Total Net One-Time Costs		18,675,443

Department : Air Force
 Option Package : Robins AFB
 Scenario File : C:\COBRA508\BREAKOUT\ROBI0323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

INPUT SCREEN ONE - GENERAL SCENARIO INFORMATION

Model Year One : FY 1996

Model does Time-Phasing of Construction/Shutdown: Yes

Base Name	Strategy:
-----	-----
HILL, UT	Realignment
KELLY, TX	Realignment
MCCLELLAN, CA	Realignment
ROBINS, GA	Realignment
TINKER, OK	Realignment

Summary:

 COBRA File 4 of 5. This IS NOT a stand-alone file.

At the request of the DBRCA, separate COBRA files for each installation were created using the same data previously used for the Air Force's consolidation recommendation. The recommendation (and data used to develop the COBRA files) was based on a package approach and it is not appropriate to examine each installation in isolation. The data used in this file is simply a shred-out of the data used for the TRC portion of the recommendation.

INPUT SCREEN TWO - DISTANCE TABLE

From Base:	To Base:	Distance:
-----	-----	-----
HILL, UT	KELLY, TX	1,363 mi
HILL, UT	MCCLELLAN, CA	671 mi
HILL, UT	ROBINS, GA	2,006 mi
HILL, UT	TINKER, OK	1,152 mi
KELLY, TX	MCCLELLAN, CA	1,733 mi
KELLY, TX	ROBINS, GA	1,045 mi
KELLY, TX	TINKER, OK	486 mi
MCCLELLAN, CA	ROBINS, GA	2,570 mi
MCCLELLAN, CA	TINKER, OK	1,641 mi
ROBINS, GA	TINKER, OK	929 mi

INPUT SCREEN THREE - MOVEMENT TABLE

Transfers from ROBINS, GA to HILL, UT

	1996	1997	1998	1999	2000	2001
-----	----	----	----	----	----	----
Officer Positions:	0	0	0	0	0	0
Enlisted Positions:	0	0	0	0	0	0
Civilian Positions:	40	40	38	0	0	0
Student Positions:	0	0	0	0	0	0
Missn Eqpt (tons):	0	0	0	0	0	0
Suppt Eqpt (tons):	0	0	0	0	0	0
Military Light Vehicles:	0	0	0	0	0	0
Heavy/Special Vehicles:	0	0	0	0	0	0

Department : Air Force
 Option Package : Robins AFB
 Scenario File : C:\COBRA508\BREAKOUT\ROBI0323.CBR
 Std Pctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

INPUT SCREEN FOUR - STATIC BASE INFORMATION

Name: HILL, UT

Total Officer Employees:	617	RPMA Non-Payroll (\$K/Year):	6,020
Total Enlisted Employees:	3,949	Communications (\$K/Year):	2,402
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	16,024
Total Civilian Employees:	8,691	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	31.0%	Family Housing (\$K/Year):	9,588
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.91
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	13,772	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	0	Activity Code:	36
Enlisted VHA (\$/Month):	26	Homeowner Assistance Program:	No
Per Diem Rate (\$/Day):	98	Unique Activity Information:	No
Freight Cost (\$/Ton/Mile):	0.07		

Name: KELLY, TX

Total Officer Employees:	801	RPMA Non-Payroll (\$K/Year):	16,993
Total Enlisted Employees:	3,419	Communications (\$K/Year):	3,681
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	13,945
Total Civilian Employees:	12,678	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	14.0%	Family Housing (\$K/Year):	2,870
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.84
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	16,316	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	106	Activity Code:	43
Enlisted VHA (\$/Month):	80	Homeowner Assistance Program:	No
Per Diem Rate (\$/Day):	97	Unique Activity Information:	No
Freight Cost (\$/Ton/Mile):	0.07		

Name: MCCLELLAN, CA

Total Officer Employees:	449	RPMA Non-Payroll (\$K/Year):	5,663
Total Enlisted Employees:	2,325	Communications (\$K/Year):	2,978
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	21,097
Total Civilian Employees:	8,882	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	32.0%	Family Housing (\$K/Year):	6,330
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	1.24
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	11,516	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	168	Activity Code:	58
Enlisted VHA (\$/Month):	126	Homeowner Assistance Program:	No
Per Diem Rate (\$/Day):	101	Unique Activity Information:	No
Freight Cost (\$/Ton/Mile):	0.07		

Name: ROBINS, GA

Total Officer Employees:	739	RPMA Non-Payroll (\$K/Year):	6,147
Total Enlisted Employees:	3,269	Communications (\$K/Year):	3,887
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	21,001
Total Civilian Employees:	11,119	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	54.0%	Family Housing (\$K/Year):	6,225
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.85
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	13,709	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	56	Activity Code:	76
Enlisted VHA (\$/Month):	35	Homeowner Assistance Program:	No
Per Diem Rate (\$/Day):	69	Unique Activity Information:	No
Freight Cost (\$/Ton/Mile):	0.07		

Department : Air Force
 Option Package : Robins AFB
 Scenario File : C:\COBRA508\BREAKOUT\ROBI0323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

INPUT SCREEN FOUR - STATIC BASE INFORMATION

Name: TINKER, OK

Total Officer Employees:	1,430	RPMA Non-Payroll (\$K/Year):	3,616
Total Enlisted Employees:	5,995	Communications (\$K/Year):	6,714
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	26,012
Total Civilian Employees:	11,678	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	7.5%	Family Housing (\$K/Year):	3,068
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.90
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	14,607	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	16	Activity Code:	83
Enlisted VHA (\$/Month):	19		
Per Diem Rate (\$/Day):	77	Homeowner Assistance Program:	No
Freight Cost (\$/Ton/Mile):	0.07	Unique Activity Information:	No

INPUT SCREEN FIVE - DYNAMIC BASE INFORMATION

Name: HILL, UT

	1996	1997	1998	1999	2000	2001
	----	----	----	----	----	----
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Req'd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	0%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	0%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0	Perc Family Housing ShutDown:				0.0%

Name: KELLY, TX

	1996	1997	1998	1999	2000	2001
	----	----	----	----	----	----
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Req'd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	0%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	0%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0	Perc Family Housing ShutDown:				0.0%

Department : Air Force
 Option Package : Robins AFB
 Scenario File : C:\COBRA508\BREAKOUT\ROBI0323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

INPUT SCREEN FIVE - DYNAMIC BASE INFORMATION

Name: MCCLELLAN, CA

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Req'd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	0%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	0%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0	Perc Family Housing ShutDown:				0.0%

Name: ROBINS, GA

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	1,798	1,798	1,853	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	1,557	1,557	1,604	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Req'd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	200	600	800	1,000	1,000	1,000
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	0%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	0%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	10,600	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	1,097	Perc Family Housing ShutDown:				0.0%

Name: TINKER, OK

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Req'd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	0%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	0%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0	Perc Family Housing ShutDown:				0.0%

Department : Air Force
 Option Package : Robins AFB
 Scenario File : C:\COBRAS08\BREAKOUT\ROBI0323.CBR
 Std Fctrs File : C:\COBRAS08\BREAKOUT\DEPOT.SFF

INPUT SCREEN SIX - BASE PERSONNEL INFORMATION

Name: ROBINS, GA

	1996	1997	1998	1999	2000	2001
Off Force Struc Change:	0	0	0	0	0	0
Enl Force Struc Change:	0	0	0	0	0	0
Civ Force Struc Change:	0	0	0	0	0	0
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	0	0	-1	0	0	0
Enl Scenario Change:	0	0	-7	0	0	0
Civ Scenario Change:	0	0	-368	0	0	0
Off Change(No Sal Save):	0	0	0	0	0	0
Enl Change(No Sal Save):	0	0	0	0	0	0
Civ Change(No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

INPUT SCREEN SEVEN - BASE MILITARY CONSTRUCTION INFORMATION

Name: ROBINS, GA

Description	Categ	New MilCon	Rehab MilCon	Total Cost (\$K)
TRC Rearr/Renovate	OTHER	0	386,000	8,690
Squeeze Down Costs	OTHER	0	64,000	2,100

STANDARD FACTORS SCREEN ONE - PERSONNEL

Percent Officers Married:	76.80%	Civ Early Retire Pay Factor:	9.00%
Percent Enlisted Married:	66.90%	Priority Placement Service:	60.00%
Enlisted Housing MilCon:	80.00%	PPS Actions Involving PCS:	50.00%
Officer Salary(\$/Year):	78,668.00	Civilian PCS Costs (\$):	28,800.00
Off BAQ with Dependents(\$):	7,073.00	Civilian New Hire Cost(\$):	4,000.00
Enlisted Salary(\$/Year):	36,148.00	Nat Median Home Price(\$):	114,600.00
Enl BAQ with Dependents(\$):	5,162.00	Home Sale Reimburse Rate:	10.00%
Avg Unemploy Cost(\$/Week):	174.00	Max Home Sale Reimburs(\$):	22,385.00
Unemployment Eligibility(Weeks):	18	Home Purch Reimburse Rate:	5.00%
Civilian Salary(\$/Year):	46,642.00	Max Home Purch Reimburs(\$):	11,191.00
Civilian Turnover Rate:	15.00%	Civilian Homeowning Rate:	64.00%
Civilian Early Retire Rate:	10.00%	HAP Home Value Reimburse Rate:	22.90%
Civilian Regular Retire Rate:	5.00%	HAP Homeowner Receiving Rate:	5.00%
Civilian RIF Pay Factor:	39.00%	RSE Home Value Reimburse Rate:	0.00%
SF File Desc:	Depot Factors	RSE Homeowner Receiving Rate:	0.00%

STANDARD FACTORS SCREEN TWO - FACILITIES

RPMA Building SF Cost Index:	0.93	Rehab vs. New MilCon Cost:	0.00%
BOS Index (RPMA vs population):	0.54	Info Management Account:	0.00%
(Indices are used as exponents)		MilCon Design Rate:	0.00%
Program Management Factor:	10.00%	MilCon: SIOH Rate:	0.00%
Caretaker Admin(SF/Care):	162.00	MilCon Contingency Plan Rate:	0.00%
Methodall Cos (\$/SF)	1.25	MilCon Site Preparation Rate:	0.00%
Avg Bachelor Quarters(SF):	256.00	Discount Rate for NPV.RPT/ROI:	2.75%
Avg Family Quarters(SF):	1,320.00	Inflation Rate for NPV.RPT/ROI:	0.00%
APPDET.RPT Inflation Rates:			
1996: 0.00%	1997: 2.90%	1998: 3.00%	1999: 3.00%
			2000: 3.00%
			2001: 3.00%

Department : Air Force
 Option Package : Robins AFB
 Scenario File : C:\COBRA508\BREAKOUT\ROBI0323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

STANDARD FACTORS SCREEN THREE - TRANSPORTATION

Material/Assigned Person(Lb):	710	Equip Pack & Crate(\$/Ton):	284.00
HHG Per Off Family (Lb):	14,500.00	Mil Light Vehicle(\$/Mile):	0.43
HHG Per Enl Family (Lb):	9,000.00	Heavy/Spec Vehicle(\$/Mile):	1.40
HHG Per Mil Single (Lb):	6,400.00	POV Reimbursement(\$/Mile):	0.18
HHG Per Civilian (Lb):	18,000.00	Avg Mil Tour Length (Years):	4.10
Total HHG Cost (\$/100Lb):	35.00	Routine PCS(\$/Pers/Tour):	6,437.00
Air Transport (\$/Pass Mile):	0.20	One-Time Off PCS Cost(\$):	9,142.00
Misc Exp (\$/Direct Employ):	700.00	One-Time Enl PCS Cost(\$):	5,761.00

STANDARD FACTORS SCREEN FOUR - MILITARY CONSTRUCTION

Category	UM	\$/UM	Category	UM	\$/UM
-----	--	----	-----	--	----
Horizontal	(SY)	0	Optional Category A	()	0
Waterfront	(LF)	0	Optional Category B	()	0
Air Operations	(SF)	0	Optional Category C	()	0
Operational	(SF)	0	Optional Category D	()	0
Administrative	(SF)	0	Optional Category E	()	0
School Buildings	(SF)	0	Optional Category F	()	0
Maintenance Shops	(SF)	0	Optional Category G	()	0
Bachelor Quarters	(SF)	0	Optional Category H	()	0
Family Quarters	(EA)	0	Optional Category I	()	0
Covered Storage	(SF)	0	Optional Category J	()	0
Dining Facilities	(SF)	0	Optional Category K	()	0
Recreation Facilities	(SF)	0	Optional Category L	()	0
Communications Facil	(SF)	0	Optional Category M	()	0
Shipyard Maintenance	(SF)	0	Optional Category N	()	0
RDT & E Facilities	(SF)	0	Optional Category O	()	0
POL Storage	(BL)	0	Optional Category P	()	0
Ammunition Storage	(SF)	0	Optional Category Q	()	0
Medical Facilities	(SF)	0	Optional Category R	()	0
Environmental	()	0			

Department : Air Force
 Option Package : Tinker AFB
 Scenario File : C:\COBRA508\BREAKOUT\TINK0323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

Starting Year : 1996
 Final Year : 1998
 ROI Year : 1999 (1 Year)

NPV in 2015(\$K): -569,615
 1-Time Cost(\$K): 39,704

Net Costs (\$K)	Constant Dollars						Total	Beyond
	1996	1997	1998	1999	2000	2001		
MilCon	7,760	3,880	0	0	0	0	11,640	0
Person	128	128	-20,870	-46,443	-46,443	-46,443	-159,943	-46,443
Overhd	451	794	1,369	-272	-272	-272	1,798	-272
Moving	1,861	1,861	10,764	0	0	0	14,486	0
Missio	0	0	0	0	0	0	0	0
Other	2,940	2,940	3,029	0	0	0	8,909	0
TOTAL	13,140	9,603	-5,708	-46,715	-46,715	-46,715	-123,110	-46,715

	1996	1997	1998	1999	2000	2001	Total
POSITIONS ELIMINATED							
Off	0	0	1	0	0	0	1
Enl	0	0	18	0	0	0	18
Civ	0	0	980	0	0	0	980
TOT	0	0	999	0	0	0	999

	1996	1997	1998	1999	2000	2001	Total
POSITIONS REALIGNED							
Off	0	0	0	0	0	0	0
Enl	0	0	0	0	0	0	0
Stu	0	0	0	0	0	0	0
Civ	45	45	43	0	0	0	133
TOT	45	45	43	0	0	0	123

Summary:

 COBRA File 5 of 5. This IS NOT a stand-alone file.

At the request of the DBRCA, separate COBRA files for each installation were created using the same data previously used for the Air Force's consolidation recommendation. The recommendation (and data used to develop the COBRA files) was based on a package approach and it is not appropriate to examine each installation in isolation. The data used in this file is simply a shred-out of the data used for the TRC portion of the recommendation.

Department : Air Force
 Option Package : Tinker AFB
 Scenario File : C:\COBRA508\BREAKOUT\TINK0323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

Costs (\$K) Constant Dollars	1996						Total	Beyond
	1996	1997	1998	1999	2000	2001		
MilCon	7,760	3,880	0	0	0	0	11,640	0
Person	128	128	2,353	0	0	0	2,609	0
Overhd	457	854	2,560	1,105	1,105	1,105	7,186	1,105
Moving	1,861	1,861	10,764	0	0	0	14,486	0
Missio	0	0	0	0	0	0	0	0
Other	2,940	2,940	3,029	0	0	0	8,909	0
TOTAL	13,146	9,663	18,706	1,105	1,105	1,105	44,830	1,105

Savings (\$K) Constant Dollars	1996						Total	Beyond
	1996	1997	1998	1999	2000	2001		
MilCon	0	0	0	0	0	0	0	0
Person	0	0	23,223	46,443	46,443	46,443	162,552	46,443
Overhd	6	60	1,191	1,377	1,377	1,377	5,387	1,377
Moving	0	0	0	0	0	0	0	0
Missio	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
TOTAL	6	60	24,414	47,819	47,819	47,819	167,939	47,819

Department : Air Force
 Option Package : Tinker AFB
 Scenario File : C:\COBRA508\BREAKOUT\TINK0323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

(All values in Dollars)

Category	Cost	Sub-Total
-----	----	-----
Construction		
Military Construction	11,640,000	
Family Housing Construction	0	
Information Management Account	0	
Land Purchases	0	
Total - Construction		11,640,000
Personnel		
Civilian RIF	1,618,944	
Civilian Early Retirement	470,151	
Civilian New Hires	128,000	
Eliminated Military PCS	112,840	
Unemployment	278,748	
Total - Personnel		2,608,683
Overhead		
Program Planning Support	356,451	
Mothball / Shutdown	1,703,750	
Total - Overhead		2,060,201
Moving		
Civilian Moving	2,902,809	
Civilian PPS	8,467,200	
Military Moving	0	
Freight	28,111	
One-Time Moving Costs	3,088,000	
Total - Moving		14,486,121
Other		
HAP / RSE	0	
Environmental Mitigation Costs	0	
One-Time Unique Costs	8,909,000	
Total - Other		8,909,000
Total One-Time Costs		39,704,005
One-Time Savings		
Military Construction Cost Avoidances	0	
Family Housing Cost Avoidances	0	
Military Moving	0	
Land Sales	0	
One-Time Moving Savings	0	
Environmental Mitigation Savings	0	
One-Time Unique Savings	0	
Total One-Time Savings		0
Total Net One-Time Costs		39,704,005

Department : Air Force
 Option Package : Tinker AFB
 Scenario File : C:\COBRA508\BREAKOUT\TINK0323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

Base: HILL, UT
 (All values in Dollars)

Category	Cost	Sub-Total
-----	----	-----
Construction		
Military Construction	0	
Family Housing Construction	0	
Information Management Account	0	
Land Purchases	0	
Total - Construction		0
Personnel		
Civilian RIF	0	
Civilian Early Retirement	0	
Civilian New Hires	112,000	
Eliminated Military PCS	0	
Unemployment	0	
Total - Personnel		112,000
Overhead		
Program Planning Support	0	
Mothball / Shutdown	0	
Total - Overhead		0
Moving		
Civilian Moving	0	
Civilian PPS	0	
Military Moving	0	
Freight	0	
One-Time Moving Costs	0	
Total - Moving		0
Other		
HAP / RSE	0	
Environmental Mitigation Costs	0	
One-Time Unique Costs	0	
Total - Other		0
Total One-Time Costs		112,000

One-Time Savings		
Military Construction Cost Avoidances	0	
Family Housing Cost Avoidances	0	
Military Moving	0	
Land Sales	0	
One-Time Moving Savings	0	
Environmental Mitigation Savings	0	
One-Time Unique Savings	0	
Total One-Time Savings		0

Total Net One-Time Costs		112,000

Department : Air Force
 Option Package : Tinker AFB
 Scenario File : C:\COBRA508\BREAKOUT\TINK0323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

Base: MCCLELLAN, CA
 (All values in Dollars)

Category	Cost	Sub-Total
-----	----	-----
Construction		
Military Construction	0	
Family Housing Construction	0	
Information Management Account	0	
Land Purchases	0	
Total - Construction		0
Personnel		
Civilian RIF	0	
Civilian Early Retirement	0	
Civilian New Hires	16,000	
Eliminated Military PCS	0	
Unemployment	0	
Total - Personnel		16,000
Overhead		
Program Planning Support	0	
Mothball / Shutdown	0	
Total - Overhead		0
Moving		
Civilian Moving	0	
Civilian PPS	0	
Military Moving	0	
Freight	0	
One-Time Moving Costs	0	
Total - Moving		0
Other		
HAP / RSE	0	
Environmental Mitigation Costs	0	
One-Time Unique Costs	0	
Total - Other		0
Total One-Time Costs		16,000
One-Time Savings		
Military Construction Cost Avoidances	0	
Family Housing Cost Avoidances	0	
Military Moving	0	
Land Sales	0	
One-Time Moving Savings	0	
Environmental Mitigation Savings	0	
One-Time Unique Savings	0	
Total One Time Savings		0
Total Net One-Time Costs		16,000

Department : Air Force
 Option Package : Tinker AFB
 Scenario File : C:\COBRA508\BREAKOUT\TINK0323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

Base: TINKER, OK
 (All values in Dollars)

Category	Cost	Sub-Total
-----	----	-----
Construction		
Military Construction	11,640,000	
Family Housing Construction	0	
Information Management Account	0	
Land Purchases	0	
Total - Construction		11,640,000
Personnel		
Civilian RIF	1,618,944	
Civilian Early Retirement	470,151	
Civilian New Hires	0	
Eliminated Military PCS	112,840	
Unemployment	278,748	
Total - Personnel		2,480,683
Overhead		
Program Planning Support	356,451	
Mothball / Shutdown	1,703,750	
Total - Overhead		2,060,201
Moving		
Civilian Moving	2,902,809	
Civilian PPS	8,467,200	
Military Moving	0	
Freight	28,111	
One-Time Moving Costs	3,088,000	
Total - Moving		14,486,121
Other		
HAP / RSE	0	
Environmental Mitigation Costs	0	
One-Time Unique Costs	8,909,000	
Total - Other		8,909,000
Total One-Time Costs		39,576,005
One-Time Savings		
Military Construction Cost Avoidances	0	
Family Housing Cost Avoidances	0	
Military Moving	0	
Land Sales	0	
One-Time Moving Savings	0	
Environmental Mitigation Savings	0	
One-Time Unique Savings	0	
Total One-Time Savings		0
Total Net One-Time Costs		39,576,005

Department : Air Force
 Option Package : Tinker AFB
 Scenario File : C:\COBRA508\BREAKOUT\TINK0323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

INPUT SCREEN ONE - GENERAL SCENARIO INFORMATION

Model Year One : FY 1996

Model does Time-Phasing of Construction/Shutdown: Yes

Base Name	Strategy:
-----	-----
HILL, UT	Realignment
KELLY, TX	Realignment
MCCLELLAN, CA	Realignment
ROBINS, GA	Realignment
TINKER, OK	Realignment

Summary:

 COBRA File 5 of 5. This IS NOT a stand-alone file.

At the request of the DBRCA, separate COBRA files for each installation were created using the same data previously used for the Air Force's consolidation recommendation. The recommendation (and data used to develop the COBRA files) was based on a package approach and it is not appropriate to examine each installation in isolation. The data used in this file is simply a shred-out of the data used for the TRC portion of the recommendation.

INPUT SCREEN TWO - DISTANCE TABLE

From Base:	To Base:	Distance:
-----	-----	-----
HILL, UT	KELLY, TX	1,363 mi
HILL, UT	MCCLELLAN, CA	671 mi
HILL, UT	ROBINS, GA	2,006 mi
HILL, UT	TINKER, OK	1,152 mi
KELLY, TX	MCCLELLAN, CA	1,733 mi
KELLY, TX	ROBINS, GA	1,045 mi
KELLY, TX	TINKER, OK	488 mi
MCCLELLAN, CA	ROBINS, GA	2,570 mi
MCCLELLAN, CA	TINKER, OK	1,641 mi
ROBINS, GA	TINKER, OK	929 mi

INPUT SCREEN THREE - MOVEMENT TABLE

Transfers from TINKER, OK to HILL, UT

	1996	1997	1998	1999	2000	2001
-----	-----	-----	-----	-----	-----	-----
Officer Positions:	0	0	0	0	0	0
Enlisted Positions:	0	0	0	0	0	0
Civilian Positions:	40	40	39	0	0	0
Student Positions:	0	0	0	0	0	0
Missn Eqpt (tons):	0	0	0	0	0	0
Suppt Eqpt (tons):	0	0	0	0	0	0
Military Light Vehicles:	0	0	0	0	0	0
Heavy/Special Vehicles:	0	0	0	0	0	0

Department : Air Force
 Option Package : Tinker AFB
 Scenario File : C:\COBRA508\BREAKOUT\TINK0323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

INPUT SCREEN THREE - MOVEMENT TABLE

Transfers from TINKER, OK to MCCLELLAN, CA

	1996	1997	1998	1999	2000	2001
	----	----	----	----	----	----
Officer Positions:	0	0	0	0	0	0
Enlisted Positions:	0	0	0	0	0	0
Civilian Positions:	5	5	4	0	0	0
Student Positions:	0	0	0	0	0	0
Missn Eqpt (tons):	0	0	0	0	0	0
Suppt Eqpt (tons):	0	0	0	0	0	0
Military Light Vehicles:	0	0	0	0	0	0
Heavy/Special Vehicles:	0	0	0	0	0	0

INPUT SCREEN FOUR - STATIC BASE INFORMATION

Name: HILL, UT

Total Officer Employees:	617	RPMA Non-Payroll (\$K/Year):	6,020
Total Enlisted Employees:	3,949	Communications (\$K/Year):	2,402
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	16,024
Total Civilian Employees:	8,691	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	31.0%	Family Housing (\$K/Year):	9,588
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.91
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	13,772	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	0	Activity Code:	38
Enlisted VHA (\$/Month):	26	Homeowner Assistance Program:	No
Per Diem Rate (\$/Day):	98	Unique Activity Information:	No
Freight Cost (\$/Ton/Mile):	0.07		

Name: KELLY, TX

Total Officer Employees:	801	RPMA Non-Payroll (\$K/Year):	16,993
Total Enlisted Employees:	3,419	Communications (\$K/Year):	3,681
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	13,945
Total Civilian Employees:	12,678	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	14.0%	Family Housing (\$K/Year):	2,870
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.84
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	16,316	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	100	Activity Code:	43
Enlisted VHA (\$/Month):	80	Homeowner Assistance Program:	No
Per Diem Rate (\$/Day):	97	Unique Activity Information:	No
Freight Cost (\$/Ton/Mile):	0.07		

Name: MCCLELLAN, CA

Total Officer Employees:	449	RPMA Non-Payroll (\$K/Year):	5,663
Total Enlisted Employees:	2,325	Communications (\$K/Year):	2,976
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	21,097
Total Civilian Employees:	8,882	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	32.0%	Family Housing (\$K/Year):	6,330
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	1.24
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	11,516	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	168	Activity Code:	58
Enlisted VHA (\$/Month):	126	Homeowner Assistance Program:	No
Per Diem Rate (\$/Day):	101	Unique Activity Information:	No
Freight Cost (\$/Ton/Mile):	0.07		

Department : Air Force
 Option Package : Tinker AFB
 Scenario File : C:\COBRA508\BREAKOUT\TINK0323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

INPUT SCREEN FOUR - STATIC BASE INFORMATION

Name: ROBINS, GA

Total Officer Employees:	739	RPMA Non-Payroll (\$K/Year):	6,147
Total Enlisted Employees:	3,269	Communications (\$K/Year):	3,887
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	21,001
Total Civilian Employees:	11,119	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	54.0%	Family Housing (\$K/Year):	6,225
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.85
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	13,709	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	56	Activity Code:	76
Enlisted VHA (\$/Month):	35	Homeowner Assistance Program:	No
Per Diem Rate (\$/Day):	69	Unique Activity Information:	No
Freight Cost (\$/Ton/Mile):	0.07		

Name: TINKER, OK

Total Officer Employees:	1,430	RPMA Non-Payroll (\$K/Year):	3,616
Total Enlisted Employees:	5,995	Communications (\$K/Year):	6,714
Total Student Employees:	0	BOS Non-Payroll (\$K/Year):	26,012
Total Civilian Employees:	11,678	BOS Payroll (\$K/Year):	0
Mil Families Living On Base:	7.5%	Family Housing (\$K/Year):	3,068
Civilians Not Willing To Move:	6.0%	Area Cost Factor:	0.90
Officer Housing Units Avail:	0	CHAMPUS In-Pat (\$/Visit):	0
Enlisted Housing Units Avail:	0	CHAMPUS Out-Pat (\$/Visit):	0
Total Base Facilities(KSF):	14,607	CHAMPUS Shift to Medicare:	20.9%
Officer VHA (\$/Month):	16	Activity Code:	83
Enlisted VHA (\$/Month):	19	Homeowner Assistance Program:	No
Per Diem Rate (\$/Day):	77	Unique Activity Information:	No
Freight Cost (\$/Ton/Mile):	0.07		

INPUT SCREEN FIVE - DYNAMIC BASE INFORMATION

Name: HILL, UT

	1996	1997	1998	1999	2000	2001
	----	----	----	----	----	----
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$):	0	0	0	0	0	0
Construction Schedule(%):	0%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	0%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0	Perc Family Housing ShutDown:				0.0%

Department : Air Force
 Option Package : Tinker AFB
 Scenario File : C:\COBRA508\BREAKOUT\TINK0323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

INPUT SCREEN FIVE - DYNAMIC BASE INFORMATION

Name: KELLY, TX

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Req'd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	0%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	0%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0	Perc Family Housing ShutDown:				0.0%

Name: MCCLELLAN, CA

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Req'd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	0%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	0%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0	Perc Family Housing ShutDown:				0.0%

Name: ROBINS, GA

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	0	0	0	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	0	0	0	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Req'd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	0	0	0	0	0	0
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	0%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	0%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	0	Perc Family Housing ShutDown:				0.0%

Department : Air Force
 Option Package : Tinker AFB
 Scenario File : C:\COBRA508\BREAKOUT\TINK0323.CBR
 Std Fctrs File : C:\COBRA508\BREAKOUT\DEPOT.SFF

INPUT SCREEN FIVE - DYNAMIC BASE INFORMATION

Name: TINKER, OK

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost (\$K):	2,940	2,940	3,029	0	0	0
1-Time Unique Save (\$K):	0	0	0	0	0	0
1-Time Moving Cost (\$K):	1,019	1,019	1,050	0	0	0
1-Time Moving Save (\$K):	0	0	0	0	0	0
Env Non-MilCon Reqd(\$K):	0	0	0	0	0	0
Activ Mission Cost (\$K):	0	0	0	0	0	0
Activ Mission Save (\$K):	0	0	0	0	0	0
Misc Recurring Cost(\$K):	200	600	800	1,000	1,000	1,000
Misc Recurring Save(\$K):	0	0	0	0	0	0
Land (+Buy/-Sales) (\$K):	0	0	0	0	0	0
Construction Schedule(%):	0%	0%	0%	0%	0%	0%
Shutdown Schedule (%):	0%	0%	0%	0%	0%	0%
MilCon Cost Avoidnc(\$K):	0	0	0	0	0	0
Fam Housing Avoidnc(\$K):	0	0	0	0	0	0
Procurement Avoidnc(\$K):	0	0	0	0	0	0
CHAMPUS In-Patients/Yr:	0	0	0	0	0	0
CHAMPUS Out-Patients/Yr:	0	0	0	0	0	0
Facil ShutDown(KSF):	1,363					
						Perc Family Housing ShutDown: 0.0%

INPUT SCREEN SIX - BASE PERSONNEL INFORMATION

Name: TINKER, OK

	1996	1997	1998	1999	2000	2001
Off Force Struc Change:	0	0	0	0	0	0
Enl Force Struc Change:	0	0	0	0	0	0
Civ Force Struc Change:	0	0	0	0	0	0
Stu Force Struc Change:	0	0	0	0	0	0
Off Scenario Change:	0	0	-1	0	0	0
Enl Scenario Change:	0	0	-18	0	0	0
Civ Scenario Change:	0	0	-980	0	0	0
Off Change (No Sal Save):	0	0	0	0	0	0
Enl Change (No Sal Save):	0	0	0	0	0	0
Civ Change (No Sal Save):	0	0	0	0	0	0
Caretakers - Military:	0	0	0	0	0	0
Caretakers - Civilian:	0	0	0	0	0	0

INPUT SCREEN SEVEN - BASE MILITARY CONSTRUCTION INFORMATION

Name: TINKER, OK

Description	Categ	New MilCon	Rehab MilCon	Total Cost(\$K)
TRC Rearr/Renovate	OTHER	0	357,000	8,040
Squeeze Down Costs	OTHER	0	151,000	3,600

Department : Air Force
 Option Package : Tinker AFB
 Scenario File : C:\COBRAS08\BREAKOUT\TINK0323.CBR
 Std Fctrs File : C:\COBRAS08\BREAKOUT\DEPOT.SFF

STANDARD FACTORS SCREEN ONE - PERSONNEL

Percent Officers Married:	76.80%	Civ Early Retire Pay Factor:	9.00%
Percent Enlisted Married:	66.90%	Priority Placement Service:	60.00%
Enlisted Housing MilCon:	80.00%	PPS Actions Involving PCS:	50.00%
Officer Salary(\$/Year):	78,668.00	Civilian PCS Costs (\$):	28,800.00
Off BAQ with Dependents(\$):	7,073.00	Civilian New Hire Cost(\$):	4,000.00
Enlisted Salary(\$/Year):	36,148.00	Nat Median Home Price(\$):	114,600.00
Enl BAQ with Dependents(\$):	5,162.00	Home Sale Reimburse Rate:	10.00%
Avg Unemploy Cost(\$/Week):	174.00	Max Home Sale Reimburs(\$):	22,385.00
Unemployment Eligibility(Weeks):	18	Home Purch Reimburse Rate:	5.00%
Civilian Salary(\$/Year):	46,642.00	Max Home Purch Reimburs(\$):	11,191.00
Civilian Turnover Rate:	15.00%	Civilian Homeowning Rate:	64.00%
Civilian Early Retire Rate:	10.00%	HAP Home Value Reimburse Rate:	22.90%
Civilian Regular Retire Rate:	5.00%	HAP Homeowner Receiving Rate:	5.00%
Civilian RIF Pay Factor:	39.00%	RSE Home Value Reimburse Rate:	0.00%
SF File Desc:	Depot Factors	RSE Homeowner Receiving Rate:	0.00%

STANDARD FACTORS SCREEN TWO - FACILITIES

RPMA Building SF Cost Index:	0.93	Rehab vs. New MilCon Cost:	0.00%
BOS Index (RPMA vs population):	0.54	Info Management Account:	0.00%
(Indices are used as exponents)		MilCon Design Rate:	0.00%
Program Management Factor:	10.00%	MilCon SIOH Rate:	0.00%
Caretaker Admin(SF/Care):	162.00	MilCon Contingency Plan Rate:	0.00%
Mothball Cost (\$/SF):	1.25	MilCon Site Preparation Rate:	0.00%
Avg Bachelor Quarters(SF):	256.00	Discount Rate for NPV.RPT/ROI:	2.75%
Avg Family Quarters(SF):	1,320.00	Inflation Rate for NPV.RPT/ROI:	0.00%
APPDET.RPT Inflation Rates:			
1996: 0.00%	1997: 2.90%	1998: 3.00%	1999: 3.00%
		2000: 3.00%	2001: 3.00%

STANDARD FACTORS SCREEN THREE - TRANSPORTATION

Material/Assigned Person(Lb):	710	Equip Pack & Crate(\$/Ton):	284.00
HRG Per Off Family (Lb):	14,500.00	Mil Light Vehicle(\$/Mile):	0.43
HRG Per Enl Family (Lb):	9,000.00	Heavy/Spec Vehicle(\$/Mile):	1.40
HRG Per Mil Single (Lb):	6,400.00	POV Reimbursement(\$/Mile):	0.18
HRG Per Civilian (Lb):	18,000.00	Avg Mil Tour Length (Years):	4.10
Total HRG Cost (\$/100Lb):	35.00	Routine PCS(\$/Pers/Tour):	6,437.00
Air Transport (\$/Pass Mile):	0.20	One-Time Off PCS Cost(\$):	9,142.00
Misc Exp (\$/Direct Employ):	700.00	One-Time Enl PCS Cost(\$):	5,761.00

STANDARD FACTORS SCREEN FOUR - MILITARY CONSTRUCTION

Category	UM	\$/UM	Category	UM	\$/UM
Horizontal	(SY)	0	Optional Category A	()	0
Waterfront	(LF)	0	Optional Category B	()	0
Air Operations	(SF)	0	Optional Category C	()	0
Operational	(SF)	0	Optional Category D	()	0
Administrative	(SF)	0	Optional Category E	()	0
School Buildings	(SF)	0	Optional Category F	()	0
Maintenance Shops	(SF)	0	Optional Category G	()	0
Bachelor Quarters	(SF)	0	Optional Category H	()	0
Family Quarters	(EA)	0	Optional Category I	()	0
Covered Storage	(SF)	0	Optional Category J	()	0
Dining Facilities	(SF)	0	Optional Category K	()	0
Recreation Facilities	(SF)	0	Optional Category L	()	0
Communications Facil	(SF)	0	Optional Category M	()	0
Shipyard Maintenance	(SF)	0	Optional Category N	()	0
RDT & E Facilities	(SF)	0	Optional Category O	()	0
POL Storage	(BL)	0	Optional Category P	()	0
Ammunition Storage	(SF)	0	Optional Category Q	()	0
Medical Facilities	(SF)	0	Optional Category R	()	0
Environmental	()	0			