United States General Accounting Office

GAO

Supplement to a Report to the Congress and the Chairman, Defense Base Closure and Realignment Commission

May 1993

MILITARY BASES

Letters and Requests Received on Proposed Closures and Realignments

GAO/NSIAD-93-173S

GAO

United States
General Accounting Office
Washington, D.C. 20548

Comptroller General
of the United States

B-253062

May 25, 1993

To the President of the Senate and the
Speaker of the House of Representatives

The Honorable James Courter
Chairman, Defense Base Closure and
Realignment Commission

This is a supplement to our report entitled Military Bases: Analysis of DOD's Recommendations and Selection Process for Closures and Realignments (GAO/NSIAD-93-173, Apr. 15, 1993).

Many interested parties, including Members of Congress, local government officials, and private citizens, have sent us correspondence on base closures. Several of these letters were from multiple requesters and included attachments of data, analyses, and/or evaluations. Additionally, some were delivered as part of a briefing or explanatory presentation.

In some instances, the letters and material provided useful leads. In other cases, the materials add support to issues we were actively pursuing. We were not able to follow up on many of the issues or points because of the limited time available to us. However, we believe that the letters and materials may be helpful to the Commission as it considers the proposed closures and realignments. Consequently, we are providing all of the letters and materials to the Commission for consideration. Appendix I contains copies of the letters and some of the materials we received.

We are sending copies of this report to the Chairmen, Senate and House Committees on Armed Services and Subcommittees on Defense, Senate and House Committees on Appropriations; individual Members of Congress; and the Secretaries of Defense, the Army, the Navy, and the Air Force. We will also make copies available to others on request.

This supplement was prepared under the direction of Donna M. Heivilin, Director, Defense Management and NASA Issues, who may be reached on (202) 512-8412 if you or your staff have any questions.

for Frank C Conahan

Charles A. Bowsher
Comptroller General
of the United States

Contents

Letters and Other Material Received on Proposed Base Closures and Realignments

13 March 1993

General Accounting Office
441 G St. N. W.
Washington, DC 20548

Dear Comptroller General,

I now work for the Defense Contract Management District Mid-Atlantic (DCMDM) in South Philadelphia. Yesterday, it was announced that our facility was being realigned as a part of the new round of base closures.

I feel angry and betrayed. I'm writing to ask for your support in reversing or modifying the total Philadelphia recommended closures/realignments.

My facility is a District Headquarters for Defense contract administration. Our eastern boundaries cover the states from New Jersey south through the end of Virginia at the North Carolina line. Our western boundaries are from Detroit south to the end of West Virginia. We are the headquarters for the second largest number of contracts and dollars within the current five contract administration Districts. No other existing District office can claim the diversity of contract types, contractors, commodities, and major weapon systems programs. Whatever DoD buys or whatever item is made in the USA, we administer a contract for it somewhere in the Mid-Atlantic District. For example, we administer contracts for tanks, tracked vehicles, trucks, postal vans, helicopters, guidance systems, radars, clothing and textiles, medical supplies, air defense systems, jamming devices, radios, speciality machined goods, studies, think-tank proposals, state of the art technologies, electronic components, aircraft engines, missile guidance systems, warheads, torpedoes - just to name a few. The two offices slated to assume our work don't have even half that range of products and services. We deal with the Fortunes 500 companies like Martin Marietta, General Dynamics, GE, Boeing, IBM, ITT, Westinghouse as well as small and medium sized companies. Our District has always administered the greatest number of cost contracts and has resolved the greatest number of cost accounting standards issues.

I recount these facts and figures to give you a sense of the diverse working knowledge that the DCMDM staff has acquired to be mission successful. About four years, our geography and scope of responsibility quadrupled. We assimilated that increased workload without significant staff increases. In the Philadelphia District staff office, we have always met the challenge of doing more with less without risking quality. We have a proven record of successfully resolving complicated issues to best serve the Government's interest. We have been a driving force behind many successful DLA initiatives. More than half of the DCMDM staff has participated in and conducted projects for our headquarters office in Cameron Station, VA since they lacked the depth of understanding and required technical expertise to do the job.

Page 2 of 3

Our proposed closure is not only an economic loss to the Philadelphia area; but, a loss to the quality and professionalism of government and the Department of Defense. No existing contract administration headquarters can successfully execute oversight responsibilities and lend the needed degree of technical guidance with the span of control which is being proposed by this base closure, particularly with the void of technical knowledge and expertise of the agency headquarters staff at Cameron Station, VA. Further, what is saved in manpower will be lost in travel costs and bad decision making.

There must be a way to reduce needless functions and still retain the current 5 District boundaries. I have several streamlining ideas which are probably too numerous to outline here. I'm willing to elaborate upon request. My ideas include such items as the elimination of the total quality management (TQM) initiatives, all internal monthly reporting systems, the program status database(PSD)system. (By the way, the PSD system is an electronic system to report status on a very limited number (less than 150) programs to OSD. So far, it has cost the agency over $1 million.in a software development contract and another $1 million in agency wide resources to support prototyping of the system. After a year and half, the system still doesn't work and it does not provide the detail nor accuracy of the paper system which it has replaced. Another $1 million follow on contract is being contemplated to correct the problems with the current software version.)

I understand that our future was allied with that of our "landlord", Defense Personnel Support Center (DPSC). DPSC's functions as well as the functions of the Defense Industrial Supply Center (DISC) and Aviation Supply Office (ASO) are being moved to New Cumberland and Mechanicsburg, PA. Obviously, those jobs are critical to the national defense. It is just plain stupid, to recreate an organization in a totally different location. No amount of savings will ever justify the collective experience and technical knowledge which is being lost with those planned moves. Moves and consolidation of critical functions just don't improve or retain the quality of those functions. This is a lesson which should have been learned with the consolidation of the DLA finance offices at the Defense Finance and Accounting Center (DFAS) in Columbus, Ohio. DFAS has been paying more prompt payment interest in a typical month that the total prompt payment interest paid annually by all those finances offices whose functions DFAS assumed. Let's not repeat the DFAS debacle. I don't believe the Harrisburg area has several thousand people with the procurement expertise to fill the jobs being moved there. Further, I can't believe the Harrisburg metropolitan area is more depressed than the Philadelphia metropolitan area. In addition to the proposed closure or downsizing of the Navy Yard, Mc Guire Air Force Base, Fort Dix, Willow Grove, DPSC, DCMDM, DISC, and ASO, Philadelphia has been losing private sector jobs at an alarming pace like GE, Campbell's, Mrs. Paul's, Whitman Chocolates. In case you did not recall, Philadelphia is teetering on the edge of bankruptcy. This move might push us over the edge.

I believe that economies could be achieved without losing 9000 jobs in Philadelphia. Further, those economies could be extended nationwide and worldwide if we simply eliminate needless functions. Let's eliminate the frills and all the effort to support the Government bureaucracy. We don't need TQM and fancy computer systems to award and administer defense contracts. Although it is a nice benefit, we don't need to pay 100% of after hours college and graduate courses. We don't need to attend expensive executive seminars. We don't need extensive public affairs staffs and agency human interest magazines. Nor do we need to prepare extensive formal briefings for the executive staff on a regular basis. We don't need duplicate reports, multiple layered management chains, management vision statements, and tactical plans. What we need is to eliminate the Military in the critical DLA decision making processes (since they are never forced to live with the consequences of their bad decisions) and make civilian managers accountable for their actions.

I know this letter is running rather long but I needed to outline the facts fully so you could understand my point of view. I'm willing to provide further details as need. I thank you for your time and I hope you can do something to reverse the base closure decision.

ERNEST F. HOLLINGS
SOUTH CAROLINA

OFFICES:
1835 ASSEMBLY STREET
COLUMBIA, SC 29201
803-765-5731

103 FEDERAL BUILDING
SPARTANBURG, SC 29301
803-585-3702

126 FEDERAL BUILDING
GREENVILLE, SC 29603
803-233-5366

112 CUSTOM HOUSE
200 EAST BAY STREET
CHARLESTON, SC 29401
803-727-4525

United States Senate

125 RUSSELL OFFICE BUILDING
WASHINGTON, DC 20510-4002
202-224-6121

COMMITTEES:
COMMERCE, SCIENCE, AND TRANSPORTATION: CHAIRMAN
APPROPRIATIONS
COMMERCE, JUSTICE, STATE AND THE JUDICIARY: CHAIRMAN
DEFENSE
LABOR, HEALTH AND HUMAN SERVICES, EDUCATION
ENERGY AND WATER DEVELOPMENT
INTERIOR
BUDGET
DEMOCRATIC POLICY COMMITTEE
OFFICE OF TECHNOLOGY ASSESSMENT
NATIONAL OCEAN POLICY STUDY

March 15, 1993

Mr. Charles A. Bowsher
Comptroller General
441 G Street, NW
Room 025
Washington D.C., 20548

Dear Mr. Bowsher:

As you and your staff begin what I know will be a thorough review of the FY 93 proposals for Base Closure, I request that you pay particular attention to the methodology, analytical data, and rationale provided by the Navy to support their recommendations. According to my understanding of the process, the Navy is required to conduct comparative analysis among type installations, which should support their final recommendations. It is my belief that the Navy cannot establish a clear, objective case for a number of their recommendations.

In the case of Naval Shipyards, following the clearly established evaluation requirements, the Navy should be able to present data which shows the Charleston Shipyard less efficient and less valuable than the 7 Shipyards remaining in the Navy inventory. I flatly do not believe that to be the case, and my belief is based on more than parochial opinion. I assert that a one-on-one comparison between the Charleston Shipyard and other comparable shipyards left unaffected in this proposal, will show Charleston's efficiency and economic benefit to the taxpayer to be superior. The supporting data provided to me by the Navy does not make a clear case for their recommendations for Shipyards nor for Naval Stations.

Accordingly, I request that in addition to the overall review you will provide to the Congress, you provide directly to me a summary of your findings concerning the validity of the Navy's justification for its proposals regarding both Shipyards and Naval Stations.

With warmest personal regards, I am

Sincerely,

Ernest F. Hollings

SHERWOOD BOEHLERT
33d District, New York

COMMITTEES:
SCIENCE, SPACE, AND TECHNOLOGY
RANKING REPUBLICAN, SUBCOMMITTEE ON SCIENCE

PUBLIC WORKS AND TRANSPORTATION
RANKING REPUBLICAN, SUBCOMMITTEE ON WATER RESOURCES AND ENVIRONMENT
SUBCOMMITTEE ON AVIATION
SUBCOMMITTEE ON ECONOMIC DEVELOPMENT
SELECT COMMITTEE ON AGING

U.S. DELEGATION, NORTH ATLANTIC ASSEMBLY
CHAIRMAN, NORTHEAST AGRICULTURE CAUCUS
NORTHEAST-MIDWEST CONGRESSIONAL COALITION

Congress of the United States
House of Representatives
Washington, DC 20515-3223

WASHINGTON OFFICE:
1127 LONGWORTH HOUSE OFFICE BUILDING
WASHINGTON, DC 20515-3223
(202) 225-3665

CENTRAL OFFICE:
ALEXANDER PIRNIE FEDERAL BUILDING
10 BROAD STREET
UTICA, NY 13501
(315) 793-8148

TOLL FREE: 1-800-228-3925

March 23, 1992

Mr. Robert Meyers
General Accounting Office
441 G Street, N.W., Room 5100
Washington, D.C. 20548

Dear Bob:

In 1991 the Pentagon submitted the following cost-to-close figures to the Base Closure Commission.

Plattsburgh--$27 million
Barksdale----$198.5 million
Griffiss-----$220.1 million
McGuire--No cost to close since air mobility bases were exempt.

In 1993, the Pentagon submitted the following cost-to-close figures to the Base Closure Commission.

Plattsburgh--$114 million
Barksdale----$567 million
Griffiss-----$416 million
McGuire------$300 million

Please note that the jump in the Plattsburgh figure is over 4 times. The jump in the Barksdale figure is 3 times. Finally, the figure for Griffiss isn't even doubled. The two bases above with the biggest jumps in cost-to-close are the ones the Pentagon has picked to keep open. What makes me suspicious of the Pentagon numbers for 1993 is the fact that in 1991 the low cost-to-close and immediate payback possibilities made these same bases, Barksdale and Plattsburgh, prime targets for closure. Of further interest is the fact that the bases with the biggest jumps in cost-to-close have flying missions, the cheapest things to move. Griffiss AFB, has bombers, tankers, the Rome Lab, the 485th EIG, and NORAD. Except for the flying mission at Griffiss, the remaining facilities are extremely expensive to close. If the Barksdale cost-to-close jumps 3 times, Plattsburgh 4 times, then in essence, the cost-to-close Griffiss should have multiplied at least six fold.

I'm asking the General Accounting Office (GAO) to take a close look at the Pentagon's 1993 cost-to-close figures of the four bases. Something is amiss.

In the Pentagon announcement, the runway at Griffiss is closed and Plattsburgh is named the mobility base of the East. As you know, Griffiss takes care of the deployment of Fort Drum personnel and equipment under the SIOP. If Plattsburgh is to be the mobility base in the East, the extension of the runway at Fort Drum, from 5,000 to 10,000 feet to accommodate airlift aircraft for future deployments, becomes necessary, since Fort Drum personnel and equipment can't go to Plattsburgh (reaction time). The cost of the extension then becomes a part of the cost-to-establish Plattsburgh, as the mobility base. General Carl Franklin, of the Pentagon Base Closure, agreed.

Page Two
Mr. Robert Meyers, GAO

General Franklin told us at the March 15, 1993 briefing, Griffiss AFB, that the cost of extending the runway at Fort Drum was $23 million. I find that figure to be unbelievably low. Especially in view of the fact that the Fort Drum runway also needs to be strengthened to handle heavy airlift aircraft. Incidentally, General Hall, New York State National Guard, stated that the Guard cannot come over to Griffiss AFB and set up control tower facilities in the time frame required in the SIOP for deployment of Fort Drum units.

I'm asking the GAO to determine the real cost to extend and strengthen the runway at Fort Drum to include taxiway, lighting, etc. required for FAA certification. We are informed that the cost is more like $67 million.

I believe that the Air Force is grossly underestimating the cost it will incur in deploying the Army's 10th Mountain Division swiftly in the event of a national emergency, once Griffiss AFB is closed. Transporting that division is an Air Force mission performed at Griffiss, and in my view the readiness operations and maintenance costs of moving the division quickly have not been made a part of the costs-to-close Griffiss.

In the Pentagon announcement the Air Force proposes to move the 485th Engineering Installations Group from Griffiss AFB, to Hill AFB, Ogden, Utah. As you may know, the 485th EIG is responsible for the engineering and installation of communications equipment throughout the Northern U.S., Canada, Europe, and the Near East. They accomplish 49.5% of the E&I communications equipment of the Air Force. Fifty percent of their workload is overseas. The 485th, at Griffiss, is close to the Pentagon and Andrews AFB, who are two of their prime customers and housed with the Rome Laboratory, the super lab for (C3I). When General Franklin was asked how the move of the 485th EIG to Hill AFB saves the Pentagon money, his response was that the savings to the Pentagon is in the O&M costs of closing the Griffiss runway, removing all support personnel, and fencing in the Rome Laboratory.

It is difficult for me to see how the Air Force is saving money by moving the 485th EIG to Utah. It will now take the engineers at least two days more of travel time, TDY expense, and travel expense, just to get to the same job sites as before. Furthermore, part of the Pentagon announcement has the 1849th Electronics Installation Squadron moving from McClellan AFB to Hill AFB, Utah to consolidate with the 485th EIG. Now that McClellan AFB has been taken off the DOD closure list, this consolidation package has been disrupted.

Can the GAO determine how much more the move and operation (annual basis) of the 485th EIG from Griffiss AFB to Hill AFB will cost the DOD?

Attached is a copy of General Franklin's chart on "Costs to Establish". It is not a cost/benefit analysis; it is a cost analysis. However, even the cost numbers fail to show any relationship to the 1993 Base Closure Report to the Commission (for example the closure cost of Plattsburgh is stated as $25.8 million not $114 million. It is interesting to note that the number of $25.8 million is closer to that used in the 1991 closure study of $27 million and casts into doubt the basis for the new Plattsburgh closure number.

Page Three
Mr. Robert Meyers, GAO

This table doesn't surprise anyone. If, for example, you review the Air Force's methodology for comparison, as presented by General Franklin, it states as one of its criteria: "compare costs of keeping and developing each base to satisfy mission". This, as opposed to comparing costs and benefits. It is possible that major OMB requirements have been violated.

I would like to know if this table or chart forwarded to the Base Closure Commission and the GAO. Does this chart analysis comply with OMB Circular A-94? Can I access the GAO as you audit this financial data? Have base closure requirements been violated?

Finally let me say that I hope that the GAO would analyze the Air Force preference for one base, one mission, one boss, which is the policy driving the closure decisions. The Air Force recently preferred multiple mission bases, such as Griffiss, as the Navy and Army still do, where operations and maintenance costs can be spread over many functions. Griffiss has been a multiple mission base, and what had been one of its chief strengths has now become a major liability, in the eyes of some people within the Air Force, because of the new preference.

With warmest regards,

Sincerely,

Sherwood Boehlert
Member of Congress

SB:pm
enc.

SHERWOOD BOEHLERT
23D DISTRICT, NEW YORK

COMMITTEES:
SCIENCE, SPACE, AND TECHNOLOGY
RANKING REPUBLICAN, SUBCOMMITTEE ON SCIENCE

PUBLIC WORKS AND TRANSPORTATION
RANKING REPUBLICAN, SUBCOMMITTEE ON WATER RESOURCES AND ENVIRONMENT
SUBCOMMITTEE ON AVIATION
SUBCOMMITTEE ON ECONOMIC DEVELOPMENT

SELECT COMMITTEE ON AGING

U.S. DELEGATION, NORTH ATLANTIC ASSEMBLY
CHAIRMAN, NORTHEAST AGRICULTURE CAUCUS
NORTHEAST-MIDWEST CONGRESSIONAL COALITION

Congress of the United States
House of Representatives
Washington, DC 20515-3223

WASHINGTON OFFICE:
1127 LONGWORTH HOUSE OFFICE BUILDING
WASHINGTON, DC 20515-3223
(202) 225-3665

CENTRAL OFFICE:
ALEXANDER PIRNIE FEDERAL BUILDING
10 BROAD STREET
UTICA, NY 13501
(315) 793-8146

TOLL FREE: 1-800-235-2525

ADDENDUM

March 23, 1993

Mr. Robert Meyers
General Accounting Office
441 G Street, N.W., Room 5100
Washington, D.C. 20548

Dear Bob:

I apologize for leaving out one important issue in my earlier correspondence to you today, but I want to bring an important matter to your attention that is contained in the Department of the Air Force Analyses and Recommendations, Volume V.

Please note on page 17, Geographically Key/Mission Essential Exclusions, Kirtland AFB, New Mexico: Supports several irreplaceable research and testing facilities essential to DOD, DOE, and other governmental agencies (Phillips Lab). On page 18, Wright-Patterson AFB, Ohio: Unique combination of organizations and facilities supporting aerospace research, development, and acquisition and Headquarters AFMC (Wright Lab). On page 23, Category/Subcategory Exclusions, Subtitle Industrial/Technical Support Category--Product Center and Laboratory Subcategory: Brooks AFB, Texas, human engineering research (Armstrong Lab).

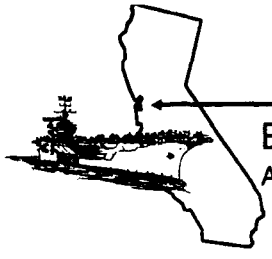
Three of the four Air Force bases containing the Air Force super labs were excluded from closure/realignment consideration because of the importance of their research activities. Rome Lab, the C3I research and testing facility of the Air Force, did not receive the same treatment. Why? The Air Force, after an exhaustive study, consolidated all of its research activities into 4 super labs with an announcement on November 27, 1990. Rome Lab, Griffiss AFB, is the C3I super lab.

With warmest regards,

Sincerely,

Sherwood Boehlert
Member of Congress

SB:pm



BCDC

Base Closure Defense Committee

Alameda Naval Complex P.O. Box 1704 Alameda, CA 94501

March 24, 1993

Charles A. Bowsher, Comptroller General
U.S. General Accounting Office (GAO)
Washington, D.C. 20548

Subject: Comments on 1993 Navy Base Closure Selection Process
- Naval Air Station and Naval Aviation Depot, Alameda

Enclosures: (1) Military Value Matrix for Naval Aviation Depots
(2) Naval Air Systems Command memo AIR 4221A/1091 dated 19 Feb 1991

The following information is provided for GAO's consideration and investigation of the 1993 base closure process. Our organization has worked closely with Alameda County (Calif.) officials over the past three years to articulate the compelling case for retaining the Alameda naval complex. We welcome GAO's involvement in the process and stand ready to assist in any way we can.

1. PROBLEMS WITH OBTAINING DATA.

Attempts to obtain information from the Navy using the contact listed in the Navy's report have been unsuccessful. We were told to request data via the Freedom of Information Act. Thus, the ready availability of closure data is in itself a process problem that needs to be addressed. By the time that interested parties obtain the information needed, the GAO process is over, the Commission hearings are over, and the bases are closed!

We have reviewed the official Navy closure report to the Commission, Analyses and Recommendations (Volume IV) (March 1993). This report, though claiming to be a comprehensive study, fails to provide the specific "matrices" and methods of analysis used to determine the military value of an installation. We were able to obtain enclosure (1), which we believe is the military value matrix used for evaluating Naval Aviation Depots (NADEPs), through other channels. As discussed later on, this matrix contains either outright errors or inappropriate weightings which (1) unfairly lowered NADEP Alameda's military value; and (2) artificially inflated the value of other NADEPs.

2. HISTORICAL BIAS AGAINST ALAMEDA

"Instructions received indicate that Alameda reports are to be done in favor of closure."

The preceding statement, contained in an internal Navy memo (enclosure 2) during the previous closure round (1991), shows the bias against NAS/NADEP Alameda that has existed for some years within certain parts of the Navy establishment.

The exposure of this memo coupled with the lack of documentation or justification on the part of the Navy in 1991, helped result in NAS/NADEP Alameda being removed from the 1991 list submitted to the Closure Commission. This year's list of Bay Area navy bases is nothing but a rerun of the 1990 closure attempt and the aborted 1991 attempt - re-packaged in a new "comprehensive study" wrapping for 1993.

The history of the Navy's attempts to close NAS/NADEP Alameda since 1990 clearly shows an anti-Alameda bias. The 1993 Navy process is documented in its report (Vol. IV). However, what isn't shown in the report is that the same Navy captain that signed enclosure (2) was once again directly involved as the person who coordinated input of data into the Navy's COBRA model.

We do not claim that this individual on his own is responsible for the bias shown against Alameda. Rather, it is obvious that this is coming from much higher within the Navy's chain-of-command, and he was just following orders. **However, it is certainly inappropriate that someone who was knowingly or unknowingly a part of a previous biased effort to close a facility is once again placed "in the loop!"**

3. METHODS OF ANALYSIS AND/OR DATA APPEARS TO HAVE BEEN MANIPULATED

Recent history, coupled with the Navy's admission that it used "military judgement" to select its closure candidates rather than an empirical evaluation of military value and future strategic needs, that causes us to look at the data and process with apprehension. Our review of the data indicates that **facilities were targeted first, and data "made to fit" later.**

For example on page two of the NADEP military value matrix (enclosure (1)), the first two questions of the Cost section are given a point value of 3.7 points each. These questions were not asked in any of the Data Calls requested of the NADEPs, nor is it clear of what specific value the information is to making a closure decision. What is clear is that the questions and the weighting assigned them give the NADEPs at Cherry Point and Jacksonville 7.4 points each out of the "66" and "65" points total each received in being rated the two top NADEPs on "military value."

It is also unclear as to why "Cost" criteria are given high

weights of 3.7 points, while under "Strategic Concerns" there are just three questions weighted at 1.68, 0.20, and 1.68 points respectively. Neither Jacksonville nor Cherry Point is co-located with a deepwater port, nor was the question even considered as a strategic concern.

NAS Alameda, the only certified nuclear carrier homeport on the west coast, somehow receives a lower military value rating than facilities that do not even exist (Everett, WA)!. There is obviously something wrong with a process that rates long-standing strengths such as deepwater ports, adjacent airfield facilities, and nuclear carrier capability as either excess or not of value militarily.

Additional examples are:

1. Alameda closure scenarios contained in the Navy's 1990 and 1991 closure efforts, are now re-introduced in the form of the POM outyear data used to drive 1993 decisions. For example, the NADEP military value matrix question No. 5a correctly gives NADEP Alameda credit for having missile repair capability. Question 5b however, does not give credit in the POM outyears.

POM outyear projections can slant military value analysis for any targeted facility by assuming capability dis-establishment at that site, reducing their workload and thereby diminishing military value. Question 5b had a value of 1.61 points, not given to Alameda.

2. In the Equipment and Facilities section, NADEP Alameda was not given credit for having "...special facilities, equipment, or skills to perform aircraft repairs" (question 4c); engine repairs (question 6c); component repairs (question 7c); or aircraft modifications (10c). These capabilities do indeed exist at NADEP Alameda, and the specific data call responses from NADEP Alameda provided many pages of documentation proving this. An additional 6.43 points should have been credited to NADEP Alameda for these questions.

4. NAVY'S DATA COLLECTION PROCESS WAS FLAWED

Those with the greatest technical knowledge about a facilities unique capabilities and value (the bases themselves) were routinely given just a few days to one week to answer a series of detailed "Data Calls." The data was sent (for Naval Aviation Depots) to Patuxent River MD for further analysis and input, and then on to the the Navy's BSEC.

a. As no information was ever sent back to the facilities being studied on exactly what was said about them, it is not clear as to whether data was either changed, omitted, or added to

present an incorrect picture about a facility's value.

b. The Navy's certification process does not guarantee a fair and impartial process. It instead guaranteed that those who would make the final decision would be the ones who "certified" the data.

c. Though we do not yet have concrete proof, we have been told that data certified at lower levels of the Navy process, **was altered.**

5. LACK OF CIVILIAN REVIEW

An assumption that was inherent in the base closing process was that there would always be a review of military recommendations by the proper civilian authority within both the Department of the Navy and DoD. However, this was not the case for the 1993 round of closures, and was a major factor in the targeting of the Bay Area's Navy facilities.

The change of administrations on January 21 coupled with a moved-up deadline of 22 February to DoD for individual service recommendations provided Navy admirals with the unique opportunity to target Bay Area bases without any civilian oversight to stop them. The Navy's list was submitted directly from Chief of Naval Operations Adm. Kelso to the Secretary of Defense. The "list" was then "leaked" to the New York Times in advance so that Secretary Aspin couldn't remove them without it appearing "political." He couldn't delay the list without risking having no closures take place by missing legal deadlines. Additionally, Secretary Aspin had little or no staff in place to help him review the list and was also in ill health.

Thus, facilities such as Alameda are in danger of being closed with the taxpayers facing a **$2 BILLION** cost to build replacement facilities. Does anyone believe that it is politically "normal" to recommend the closure of all four bases in the district of the Chairman of the House Armed Services Committee? In 1995, the Clinton administration will have had time to place civilian oversight in place to prevent biased lists from being created.

PAUL S. NAHM

ALAMEDA COUNTY EDAB ECONOMIC DEVELOPMENT ADVISORY BOARD

Alameda County
Economic Development Advisory Board

March 25, 1993

Mr. Charles A. Bowsher, Comptroller General
General Accounting Office
Washington, D.C. 20548

Dear Mr. Bowsher:

Subject: Comments on 1993 Navy Base Closure Selection Process

Enclosure (1) is provided by the Base Retention Committee of the Alameda County Economic Development Advisory Board (EDAB) for GAO's consideration in their analysis of the Navy's 1993 base closure process. For your information EDAB has been actively involved in base closure issues for several years and is a public/private organization comprised of business, labor, environmental and educational groups as well as Alameda County and all fourteen of its cities.

The enclosure, Shortcomings in the Navy's Analysis of Military Value and Cost Factors Among West Coast Carrier Facilities, itemizes several flaws in the methodology used by the Navy in reaching their recommendation to close NAS Alameda and related facilities. These include: a) the failure to compare the military value of a homeport for nuclear aircraft carriers on a uniform basis; b) inadequate accounting of costs; c) failure to adequately recognize the military value of facilities that do exist; d) giving credit for military value to facilities that don't exist; and, e) lack of an adequate cost comparison between the two West Coast facilities that are the focal point of the Navy's analysis.

Among the scoring discrepancies discovered in the Navy's evaluation of Alameda facilities is the fact that Alameda was given a score of 2 for being able to berth a nuclear aircraft carrier because it is a Naval Air Station, while Everett was given a score of 10 because it is being built as a Naval Station. No credit was given for Alameda's two (2) other licensed homeport berths for nuclear carriers.

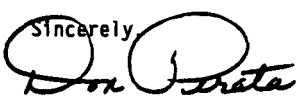
If the capability to homeport a nuclear carrier has intrinsic value, Alameda should be evaluated on an equal basis with all other facilities capable of homeporting nuclear carriers and should be given a score of 30 rather than a score of 2.

Steven C. Szalay, County Administrator – Bruce L. Kern, Director of Economic Development
1221 Oak Street, Suite 555, Oakland, CA 94612
Phone: 510-272-6984 Fax: 510-272-3784 or 272-5007

Charles A. Bowsher, page 2

This analysis is preliminary and we continue to refine our information. We will forward additional information as it becomes available. Should you have questions we would be pleased to provide whatever assistance we can. Thank you for your consideration of this matter.

Sincerely,



Don PERATA
Chair EDAB

DP/RGS:0408c
cc: Senator Diane Feinstein
Senator Barbara Boxer
Congressman Ron Dellums
Copeland Hatfield and Lowery

DIANNE FEINSTEIN
CALIFORNIA

United States Senate
WASHINGTON, DC 20510-0504

March 26, 1993

The Honorable Charles A. Bowsher
Comptroller General of the United States
General Accouting Office
441 G Street, NW
Washington, D.C. 20548

Dear Mr. Bowsher:

Under the procedures of Title XXIX of National Defense Authorization Act, the General Accounting Office (GAO) plays a critical role in the defense base closure and realignment process. Pursuant to statute, the GAO is directed to monitor and review the analysis done by the Department of Defense (DoD) in its recommendations to the Defense Base Closure and Realignment Commission.

As you know, eight major naval installations have been recommended for closure in California, and an additional two bases (McClellan Air Force Base and the Presidio of Monterey) may also be considered for closure in the near future. As a result of DoD's base closure recommendations, over 100,000 jobs and $4.4 billion in economic activity could be lost in California alone. Closures of these facilities will have a significant adverse impact on the surrounding communities and the entire region.

I have attached two memoranda that describe possible flaws in the Navy's reasoning process as it related to the recommendation to close four Alameda County installations. I urge you to carefully review this information, and suggest that a complete audit of the Navy's data collection and analysis may be warranted.

Thank you, in advance, for your prompt attention to this matter. If I may be of further assistance, please feel free to contact me or Robert Mestman of my staff at (202) 224-2743.

Sincerely,

Dianne Feinstein

DF:ram

Enclosures

ROBERT A. BORSKI
3D DISTRICT, PENNSYLVANIA

COMMITTEES:
PUBLIC WORKS AND TRANSPORTATION
CHAIRMAN—SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT
FOREIGN AFFAIRS
SELECT COMMITTEE ON AGING

Congress of the United States
House of Representatives
Washington, DC 20515-3803

WASHINGTON OFFICE:
ROOM 2161
RAYBURN HOUSE OFFICE BLDG.
(202) 225-8251
FAX: (202) 225-4628

DISTRICT OFFICES:
7141 FRANKFORD AVE.
PHILADELPHIA, PA 19135
(215) 335-3355
FAX: (215) 333-4608

2630 MEMPHIS ST.
PHILADELPHIA, PA 19125
(215) 426-4616

March 31, 1993

Mr. Robert L. Meyer
Assistant Director for Logistics
General Accounting Office
Room 5102
Washington, DC 20548

Dear Mr. Meyer:

I am writing to request your review of the enclosed report by the Naval Supply Systems Command on the consolidation of the Aviation Supply Office and the Ships Parts Control Center.

As you know, on March 12, the Department of Defense (DOD) recommended the closure of the Aviation Supply Office (ASO), located in my congressional district in Philadelphia, and its relocation to the Ship Parts Control Center (SPCC) in Mechanicsburg, PA. The Department of the Navy claims that this consolidation would save $102.8 million in reduced excess capacity costs over twenty years.

On August 28, 1992, the Naval Supply Systems Command (NAVSUP) was tasked by the Department of the Navy to study the merits of consolidating these two facilities. The report concludes that such consolidation does not make sense both from a readiness and business perspective.

I would greatly appreciate your full review of the data, analysis, and recommendations presented in this report. I believe that such a review is needed to determine whether the Navy accurately assessed the cost-effectiveness of this consolidation in its recommendation to DOD.

I would also like to request a meeting at your earliest convenience between you and my Legislative Director, Mark Vieth, to discuss these matters further.

Thank you for attention to these important matters. If you require any additional information, please call Mr. Vieth at (202) 225-8251.

Sincerely,

ROBERT A. BORSKI
Member of Congress

RAB/mdv
Enclosure

PRINTED ON RECYCLED PAPER

CLIFF STEARNS
5TH DISTRICT, FLORIDA

COMMITTEES:

ENERGY AND COMMERCE
SUBCOMMITTEES:
RANKING MEMBER
COMMERCE, CONSUMER PROTECTION, AND COMPETITIVENESS
ENERGY AND POWER
CHAIRMAN
MILITARY PERSONNEL TASK FORCE
HEALTH CARE POLICY TASK FORCE

Congress of the United States
House of Representatives
Washington, DC 20515-0906

REPLY TO:
☐ 332 CANNON BUILDING
WASHINGTON, DC 20515-0906
(202) 225-5744
FAX: (202) 225-3973

FLORIDA DISTRICT OFFICES:
☐ 115 S.E. 25TH AVENUE
OCALA, FL 34471
(904) 351-8777
FAX: (904) 351-8011
☐ 1726 KINGSLEY AVE., SE
SUITE 8
ORANGE PARK, FL 32073
(904) 269-3203
FAX: (904) 269-3343
☐ 111 S. 6TH STREET
LEESBURG, FL 34748
(904) 326-8285
FAX: (904) 326-8430

April 1, 1993

Mr. Robert L. Meyer
Assistant Director of Logistics Issues
U.S. General Accounting Office
441 G Street N.W., Room 5102
Washington, DC 20548

Dear Mr. Meyer:

Thank you for meeting with me and my staff to discuss issues relating to the General Accounting Office review of the Department of the Navy base closure process. I appreciated the opportunity to discuss my concerns regarding the Navy's review of Naval Air Station Cecil Field.

According to Navy spokesmen, the desire to reduce maximum excess capacity throughout that service was the driving force behind the decision to recommend NAS Cecil Field for closure. This recommendation was made in spite of the fact that expensive military construction at receiving facilities would be necessary in order to accommodate units currently stationed at Cecil Field.

We are concerned that no cost analysis of capacity reduction alternatives was performed by the Navy, making it impossible to determine the most truly cost-effective closure strategy. For example, the Navy did not run cost determinations on the alternative of closing Naval Air Station Oceana, in spite of the fact that Oceana scored significantly lower under military value criteria.

Cecil Field possesses facilities for expansion and surge capacity that would be difficult to replicate elsewhere without incurring substantial additional costs to the taxpayer. The base also could easily accept new missions from alternative realignments without significant milcon costs.

While reduction of excess capacity is clearly a step in the process of reducing the cost of defense infrastructure, military value and cost-effectiveness should be the key determinants. A GAO review of the Navy's methodology in recommending the closure of Cecil Field could clarify the questions raised by their recommendation.

I have attached a list describing some of the specific concerns that have been raised regarding the proposed closure of Cecil Field. Thank you for your consideration of this request, and I look forward to hearing from you.

Sincerely,

Cliff Stearns
Member of Congress

Enclosure
CS/tdb

APRIL 1, 1993

MEMORANDUM TO MR. ROBERT L. MEYER

FROM: REPRESENTATIVE CLIFF STEARNS

SUBJ: DEPARTMENT OF DEFENSE CLOSURE RECOMMENDATION REGARDING NAVAL AIR STATION CECIL FIELD

Along with Jacksonville's Mayor's Commission on Base Realignment and Closure, I have reviewed the Department of Defense recommendations for closing Naval Air Station Cecil Field as part of the 1993 BRAC process. I would like to request that the GAO review the following points in the Navy's analysis:

o The Navy did not study alternative realignment options to determine the most cost-effective east coast configuration. In view of the requirement to spend hundreds of millions of dollars at receiving facilities to accommodate assets from Cecil Field, other options should have been explored. On the other hand, Cecil Field's existing capacity could absorb all east coast F/A 18's at a single location. No cost analysis of this option were conducted.

o Additionally, the Navy did not analyze the cost-effectiveness and military value results of closing Naval Air Station Oceana in spite of the fact that Oceana's military value was rated 10 points below Cecil Field and the severe civilian encroachment problems already existing at that location.

o In its analysis, the Navy assumes savings of $56.7 million per year for closing Cecil Field. Officials of the Jacksonville's base closure commission have stated the annual operating budget for Cecil Field at $10.3 million. This would result in a return on investment of more than 30 years, as opposed to the 6 years estimated by the Navy.

The factors included in the Jacksonville analysis were fixed costs related strictly to operating Cecil Field: civilian employees, utilities, facility maintainence and vehicle costs. The other costs of operation at Cecil would either be eliminated altogether or replicated elsewhere, resulting in no net savings related to closing Cecil.

o Comments regarding future civilian encroachment at Cecil Field are largely unfounded, particularly compared to already-existing problems at MCAS Cherry Point and NAS Oceana.

The Navy report recognizes, but the BRAC analysis does not adequately address, the environmental, noise, and operational impacts of the proposed realignment on eastern North Carolina. Quoting the Navy report:

"The proposed realignment of F-18 aircraft to MCAS Cherry Point will result in significant noise and other environmental impacts, will result in significantly higher levels of operations over eastern North Carolina, and may jeopardize the current special use airspace proposal for the Cherry 1 and Core MOAs. As a result, significant environmental and legal challenges to increased utilization of MCAS Cherry Point and related assets in North Carolina can be expected."

-- more --

Also, existing encroachment of businesses and homes around NAS Oceana present a safety hazard to both pilots and people on the ground.

April 2, 1993

Robert L. Meyer, Assistant Director
DMN
U.S. General Accounting Office
441 G Street, N.W.
Room 5100
Washington DC 20548

Sir:

Thank you again for speaking with me this morning regarding the Defense Language Institute at the Presidio of Monterey. I am attaching a Fact paper that I have put together as my briefing outline for a meeting scheduled at 3:00 Monday afternoon with the Commission staff and several Commissioners.

Part of my approach is to make the Commission and staff aware of the types of information available to the Secretary of Defense when he made his decision to pull the Presidio and DLI off of the list, as well as to provide them with specific information regarding the Army analysis that we believe to be very faulty.

The Army's proposal was developed without coordination with the General Officer Steering Committee (GOSC), a multi-service general officer group that sets policy direction for DLI, or coordination with the Defense Language Institute itself. As a result, the analysts at TRADOC and Department of Army Headquarters misinterpreted some of the fundamental student load data. This mistreatment of the Training Mission then ripples throughout the analysis in terms of skewing the costs in favor of contracting out and moving to Ft. Huachuca.

Additionally, we believe that the Army's analysis is based on the $37 million proposal by University of Arizona which appears to be a number that is not supported by any analysis, just a statement from the University. Our concern after looking at their presentation, is that they do not understand the full scope of the mission.

Additionally, major capital improvement costs have been left out of Army analysis. The University of Arizona did indicate a willingness to construct facilities, but not for free. Their $37 million mark appears to only address a portion of the language training mission, not the construction costs and not the full range of language training support missions.

Our next issue is that the cost of the DLI mission in Monterey is grossly over inflated. The Army analysis charges DLI with the base operation costs of all Defense activities remaining on Ft. Ord after the 7th Division deactivates, even though DLI's mission needs at Ft. Ord are modest. Most of the proposed activities at Ft. Ord will support other Federal activities, such as the Navy Postgraduate School, the Defense Data Manpower Center, the retired community, et al. The community has argued from the beginning that the Army's requested enclave was far beyond the needs of the military.

In summary, we would appreciate it if your audit would focus on the appropriateness and completeness of the side by side comparison of costs of Ft. Huachuca as compared to the Presidio of Monterey, an analysis of the proposal from the University of Arizona for its adequacy as the basis of comparison with the Army costs, and an audit of the specific mission required facilities at DLI needs that will located at the Presidio or at Ft. Ord.

Sincerely,

Fred Meurer
City Manager

"AN INDUSTRIAL FAMILY"

NNA THE NADEP NORVA ASSOCIATION

C/O 1056 Saw Pen Point Trail, Virginia Beach, VA 23455

2 April 1993

Dear Ms. Heivilin,

On behalf of the 4,300 employees at NADEP Norfolk and as a follow-up to your recent visit to the NADEP, I am forwarding some information which you may find useful in your review of the Navy/DoD recommendation to close NADEP Norfolk.

Following the completion of the Defense Depot Maintenance Council's (DDMC) commodity study on engines, NADEP Norfolk prepared a "minority report" to capture the essence of our concern about the validity of the decision to move Norfolk's engine work to Oklahoma City ALC. After sharing our concerns with Congressman Pickett, the Congressman invited Mr. Mike Cocchiola, Executive Director for the Deputy Assistant Commander for Aviation Depots, and Mr. Dan Howard, Assistant Secretary of the Navy, to address some of the NADEP's employees most directly affected by the DDMC decision. Mr. Cocchiola and Mr. Howard explained that the decision to take Norfolk out of the engine business was part of the Navy's master plan which would establish our NADEP as the East Coast center for tactical tailhook aircraft repair and modification. This intent was documented in a series of high level Navy and DoD plans. Furthermore, Mr. Cocchiola and Mr. Howard convinced us that the lost engine work would be offset by new manufacturing work. Based on this information, the NADEP NORVA Association discontinued its challenge to the movement of our engine programs. Based upon recent events it appears that this decision was made prematurely. A copy of our "minority report" is hereby enclosed for your review and consideration.

In reviewing the BSEC/BSAT military value computer model/matrix it became clear that NADEP Norfolk was hurt by the absence of an engine program. As a result, we have prepared a series of questions relating to the decision to move our engine programs to Oklahoma City ALC and the impact of that decision on the military value of NADEP Norfolk. These questions are enclosed as an "Engine Program Point Paper."

We have thoroughly reviewed the Navy's military value matrix and the scores assigned to Norfolk relative to the associated questions. Serious concerns have arisen relative to the way the information our NADEP provided in response to a series of data calls was evaluated. These concerns have been captured in a series of specific questions about the assessment of Norfolk's military value. These, too, are enclosed for your review and consideration.

Finally, a thorough review of the Navy's "Yellow Book" raises still further concerns about the validity of the BSEC/BSAT recommendation to close NADEP Norfolk. These concerns are captured in a paper simply titled "Point Paper" (dated 30 March 1993). This information is also enclosed for your review and consideration.

Very respectfully,

R.C. Haines

Ross Haines

OLD DOMINION UNIVERSITY

College of Business and Public Administration
Graduate School of Business and Public Administration
Norfolk, Virginia 23529-0219
804-683-3488

Mr. Bob Meyer
GAO Auditor
Base Closure and Alignment

5 April 1993

Dear Mr. Meyer:

Mr. Jerry Ghiselli, Naval Aviation Depot Alameda indicated you might be contacting me to discuss the relationships among capacity, inventory and lead time. I did my dissertation research on the benefits of adopting Synchronous Manufacturing/Theory of Constraints at Alameda Aviation Depot. I built two large scale simulation models based on the processes at the engine components division at Alameda. The results have provided me with some insights as the use of capacity and the effect of capacity utilization on lead time and inventory.

I believe that the use of higher levels of capacity, required by the closures of several depots, will drastically increase the lead time required to rework units. This increase in lead time will lead to an increase in the amount of spares required and, as a direct result, higher levels of expense in inventory. The relationship between work-in-process inventory is not a linear relationship. It appears that even relatively small increases in work-in-process lead to large increases in the lead time required for material to flow through a shop. I've experimented with increasing the utilization of capacity in the models I've built and the results indicate a very large increase in lead time. In addition, I've found that this increased utilization makes the depot environment much more complex and difficult to manage.

My work has shown that dramatic reductions in lead time required to rework units at a depot is possible by implementing Synchronous Manufacturing/Theory of Constraints. However, these improvements may well not be possible if capacity is tightly constrained at all depots. By attempting to balance capacity with demand the entire system becomes a capacity constrained resource.

The depot environment is different. The requirements on any firm in remanufacturing/repair operations are more demanding than a traditional job shop. The capacity measurements traditionally used will not provide useful results in this environment.

I will be glad to provide you with any further information. I can be contacted at the numbers below.

Sincerely,

V. Daniel R. Guide, Jr., Ph.D.
Assistant Professor of Operations Management
College of Business and Public Administration
Old Dominion University
Norfolk, VA 23529

April 6, 1993

Mr. Bob Meyer
General Accounting Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Meyer,

I am writing to you regarding the proposed closure of the Naval Aviation Depot and Naval Air Station in Alameda, California and the **process** of how the Navy arrived at its recommendations. I work at the Naval Aviation Depot, Alameda and my position is that of Chief Engineer and Technical Director. As an educated, trained and experienced engineer and engineering manager, I deal with **facts** when solving problems. It is from this factual sense that I provide the following for your consideration:

1. We responded to numerous data calls from our headquarters. All of these had very short response times. The data pages numbered into the hundreds.

2. It is apparent that the Navy Base Structure Evaluation Committee (BSEC) did not use the data to make their recommendations. Why do I say that?

a. Several questions appeared in the final report that were not part of any data call that we received. For example:

(1) Pg No. 10, Qst Ltr e under Production: "Is the amount of total annual depot level Aircraft Modification work greater than 10% of the DON total?"

Alameda received "0" for this and question 10d (15%), however Alameda is currently performing the Navy's largest aircraft modification program, the EP-3 ARIES II.

(2) Questions 4.c, 6.c, 7.c, and 10.c under Facilities and Equipment ask if the NADEP has "special facilities, equipment, or skills to perform" airframe repairs, engine repairs, component repairs, and aircraft modifications.

Alameda received "0" for all four of these 1.69 point value questions (10.c is 1.36) however NADEP Alameda is currently capable and is currently performing all these functions.

(3) Questions 13.c and 13.d under Cost: Is the actual overhead cost rate applied to direct labor less than $36/hour and is the actual hourly direct labor cost less than $23/hour?

Alameda received "0" on these 3.70 point value (each) questions however these questions were not in any of our data calls.

b. The Naval Air Station, Alameda is currently capable of homeporting several nuclear-powered aircraft carriers. The naval base at Everett, Washington is an incomplete facility and is currently **not** capable of homeporting a nuclear-powered aircraft carrier (CVN). The BSEC made two **erroneous** assumptions.

(1) That Everett is a complete and useable facility. (the Navy has conservatively estimated that it will cost at least $700M to complete Everett)

(2) That all piers are equal. (The Navy's BSEC is apparently unaware of the unique Department of Energy requirements including shore power and support services that are required to properly berth a nuclear-powered aircraft carrier at a pier)

(3) With regard to **strategic** location, it takes a CVN about one hour from NAS Alameda to reach open water outside San Francisco Bay and then about 16 hours to the training area off San Diego. From Everett, it takes 7-8 hours to reach open water followed by a day and a half to reach the San Diego training area. Being in the center of the west coast and near open waters, NAS Alameda is clearly located more strategically than Everett, Washington.

The BSEC concluded by giving Everett **more** points than Alameda for capability to berth nuclear-powered aircraft carriers. This was a major error. It would be interesting to trace the "certification" process of the Everett data.

It is clear to me that the BSEC was unable to reach a decision from the data collected. Instead of calculating "military value", the BSEC used their "military judgement" by taking a map of the United States of America and determining where they would like "things" to be, considering goals like consolidating all training, establishing master jet bases, and looking for major navy concentrations that could be entirely eliminated (these ended up being Charleston, SC and the San Francisco Bay Area). The BSEC then went into the data base and:

(1) looked for capabilities that would justify the retention of the Naval Aviation Depot at Cherry Point, North Carolina and the Naval Aviation Depot at Jacksonville, Florida. The BSEC concluded that Cherry Point has unique "composite repair" capability and Jacksonville has unique "electro-optics" capability. The BSEC failed to recognize that other Naval Aviation Depots perform composite repairs and that the electro-optics equipment at Jacksonville could be easily relocated. The BSEC also concluded that movement of workload from Alameda, Pensacola and Norfolk would significantly increase the military value of the three remaining NADEPs.

(2) used the data base to justify the cost savings of closing the "remaining" facilities.

The remainder of my comments relate to a significant part of the **process** that was overlooked by the BSEC and that is **unique** capabilities and the costs (dollars and loss of readiness) to move these capabilities to other Naval Aviation Depots.

The Naval Aviation Depot, Alameda has a number of **unique** programs and workloads that the Navy is not planning to eliminate. Therefore, these programs and workloads must be moved, at great expense, to other locations. The following is a brief list of these unique programs:

a. Of all six Naval Aviation Depots, Alameda has the **largest** component program. The work involves the depot-level repair of aviation components removed at the organization and intermediate maintenance levels and sent to the depot level (since the O&I levels are not capable to effect the repair). Alameda has unique capability for over 5,000 components, i.e, **capability** currently **does not** exist at the other five Naval Aviation Depots. To move this capability elsewhere would involve:

- relocation/re-installation of industrial plant equipment
- relocation of unique program support and test equipment
- development of new technical work orders at the gaining activity
- relocation of the material spares inventories
- hiring and training of personnel at the gaining activity or moving the NADEP Alameda personnel under Transfer of Function
- probable facility modification and/or MILCON

The above steps are involved in what we call **capability**. The development of **capability** is a very expensive process. The COBRA input, used by the Navy, did not consider the relocation costs for unique programs. For consolidation/ realignment purposes, it would seem that a simple and effective approach would be to examine those Naval Aviation Depots which have the smallest number of unique programs/workloads, because this would translate to the lowest costs to move to another location. Previous navy studies have consistently shown that Naval Aviation Depot, Jacksonville is the lowest cost depot to close, simply because Jacksonville has the smallest (of all six NADEPs) number of unique programs.

b. Alameda is the only overhaul depot for the Navy's S-3 aircraft and T56 and TF-34 engines. All of the above comments about the costs of moving **capability** apply to these major programs. Alameda is also the sole depot for the Air Force TF-34 engine (A-10 aircraft). Again, COBRA did not consider the true costs to relocate these programs (and their **capability**).

c. Alameda is the Navy's Cognizant Field Activity (engineering and logistics center) for the P-3 and S-3 aircraft and the T56 and TF-34 engines. This engineering staff of several hundred performs the vital fleet support functions of in-service engineering, without which, many aircraft would be grounded as unsafe to fly. This cadre of engineers is the Navy's corporate knowledge and history for the above programs. Although most of the P-3 aircraft depot maintenance is now accomplished at Naval Aviation Depot, Jacksonville (a December 1990 decision implemented in 1992 under "single-siting" because Jacksonville had no unique aircraft depot maintenance program), the P-3 Cognizant Field Activity resides at Alameda. Repairs, maintenance instructions for all three levels of maintenance, and major modifications for the P-3 are designed by the Alameda engineers. Recently, my P-3 engineers developed a totally new maintenance concept for the P-3 aircraft. When implemented, the new Phased Depot Maintenance (PDM) will reduce the fleet-level maintenance hours, improve the overall material condition of the P-3, and make the aircraft more available for flight. Our headquarters, the Naval Air Systems Command, has enthusiastically embraced this new PDM concept. In fact, they have directed the other Naval Aviation Depots to review the PDM concepts for application to Navy/Marine aircraft for which they are Cognizant Field Activity.

It is doubtful that this highly experienced staff would relocate. Their aerospace/ aeronautical skills are very marketable. The loss of this corporate knowledge and history would be a major negative impact to the readiness of the P-3 fleet. It would take many years for another Naval Aviation depot to replicate such a required and necessary staff of experienced engineers. This also applies to the S-3 aircraft and T56 and TF-34 Cognizant Field Activity engineering staff.

d. Naval Aviation Depot, Alameda competed with over twenty commercial aerospace companies and one U.S. Air Force Logistics Center (depot) for the task of paint stripping, corrosion treatment and repainting of the Air National Guard F-15 and F-16 aircraft. Naval Aviation Depot, Alameda **won** the competition and has been performing this work for two years. The major reason that the Air National Guard had to contract out this work was that most of the Air National Guard aircraft paint facilities around the United States were not in compliance with environmental regulations and were secured. Naval Aviation Depot, Alameda has aircraft paint stripping, corrosion control, and painting facilities that meet all San Francisco Bay Area, State of California, and Environmental Protection Agency (EPA) pollution abatement regulations. In fact, in June 1992, the EPA formally recognized the Naval Aviation Depot, Alameda for its leadership and accomplishments of reducing paint air emissions by more than 50%. In addition, Naval Aviation Depot, Alameda has a new, environmentally compliant plating facility. This plating facility is state-of-the-art and undoubtedly one of the finest in the United States. It would not make sense (common or fiscal) to abandon these expensive facilities or to endure the cost of building duplicate facilities elsewhere.

e. The Naval Aviation Depot, Alameda is also unique among the six Naval Aviation Depots in that it has a facility designed for the sole purpose of

repairing/modifying tactical missile guidance and control (G&C) sections. This missile G&C workload consists of SPARROW, PHOENIX, and SHRIKE. The Naval Aviation Depot, Alameda has also been selected as the depot for HARM and AMRAAM, with the latter selection conducted under competitive rules. In 1991, a Defense Depot Maintenance Council (DDMC) sponsored study, recommended that all Army, Air Force and Navy tactical missile G&C work be consolidated at Letterkenny Army Depot (LEAD) in Pennsylvania. To my staff of missile engineers, this recommendation made no sense because LEAD did not have the **capability** to perform the work, e.g. no trained people, no equipment, no facilities, etc. However, we were instructed to follow the decision and work with LEAD so they could gain **capability.** We have been doing that, however it is now two years since the recommendation. Following numerous Army, Navy, and Air Force meetings and the development of transition plans, nothing (people or equipment) has moved and no facilities have been modified/constructed at LEAD. In my opinion, many taxpayer dollars have been wasted because of a faulty study recommendation and the failure to recognize the true costs of developing or moving **capability**.

3. All of this capability and workload translates to **capacity**. The Navy's BSEC tried to look at capacity simply by looking at facility square footage by type of work. This is a very simplistic, ineffective approach. I have enclosed portions of minutes from a conference call. Page 6 talks to **capacity**.

4. Finally, I believe that the Navy only scratched the surface in analyzing the "technical centers" listed in Attachment K of the Department of Navy Analyzes and Recommendations (Volume IV) of March 1993. When you consider the hundreds of millions of dollars invested in the industrial NADEPs, it makes more sense to move the technical centers to the NADEPs than to close the NADEPs.

Sincerely,

Thomas E. McFarland

Enclosure:
4 pages of 3/26/93 conference call
minutes among NAVAIRSYSCOM and NADEP
Commanding Officers

6 April 1993

Honorable Charles Bowsher
Comptroller General of the United States
General Accounting Office
441 G St., NW
Washington, D.C. 20548

Dear Mr. Bowsher:

Now that the Department of Defense has published its 1993 list of base closures, I am compelled to inform you why the Naval Aviation Depot and Naval Air Station in Alameda, California should be removed from that list.

With premier corrosion control and component plating facilities amongst all depots and a long-standing, award-winning, dedicated commitment to producing the highest quality products for the Department of Defense, Naval Aviation Depot Alameda stands atop the list of defense industrial complexes.

Only Naval Aviation Depot Alameda performs overhaul of S-3 aircraft and related components. The S-3 is one of the most important support aircraft in Navy carrier air groups. Sustaining both P-3 and S-3 aircraft Cognizant Field Activity (CFA) responsibilities, Naval Aviation Depot Alameda retains nearly all corporate engineering and logistical knowledge for the two aircraft. Many P-3 and S-3 engineering and logistical staff indicate they are reluctant to pull up deep roots in the Bay Area and locate elsewhere if the programs move. This could detrimentally affect P-3 and S-3 aircraft programs.

Many aircraft component repair and overhaul programs are supported only at Naval Aviation Depot Alameda. Many, like the missile program, are performed here at less cost than can be performed elsewhere.

Naval Aviation Depot Jacksonville, Florida was spared from the 1993 list of base closures. However, upon examination of the Naval Aviation Depot corporate economic figures provided by our command, Naval Aviation Depot Jacksonville has had the highest labor cost of all depots for the last two fiscal quarters. Due to locational nature, Naval Aviation Depot Alameda has suffered in the past from high labor costs, but over the last several years we have taken great strides towards reducing our costs and bringing them more in line with the other depots. Such reductions have come through modernization of facilities, reducing overhead, and finding more efficient, cost effective ways to process workload.

The most recent base closure and realignment plan shows that of six original Navy depot level aviation repair facilities, two east coast repair facilities (Naval Aviation Depots Cherry Pt., NC and Jacksonville, FL) and one west coast repair facility (Naval Aviation Depot San Diego, CA) will remain. Considering the hundreds of millions of dollars it would cost to relocate Naval Aviation Depot Alameda programs and build new facilities elsewhere for those programs, the vulnerability the United States Navy will

experience having only one depot level aviation repair site on the west coast, and Naval Aviation Depot Alameda's impressive record on modifying, overhauling, and engineering A-6, S-3, and P-3 aircraft; T-56, J-52, and TF-34 aircraft engines; and the many other components that make Navy aircraft work, I have strong concern that closing Naval Aviation Depot Alameda is neither economically, strategically, nor politically fair to the Bay Area, the state of California, and our nation.

My concerns regarding Naval Air Station Alameda are simple and straight forward. The only way to replace the nuclear aircraft carrier home porting capability, not to mention finding new homes for all the conventional aircraft carriers and other ships home-ported at Alameda, is for the Navy to build new facilities elsewhere. The most recent information I've obtained indicates these facilities would be constructed in San Diego, CA and Everett, WA.

Officials say completion of the yet inoperative Everett complex will cost $500 million and construction of new facilities at San Diego will cost $100-200 million. Judging from past experience, actual costs will probably far exceed these numbers.

Considering Naval Air Station Alameda already has all necessary home-porting facilities, has recently added a large tract of modern Navy housing to accomodate the increasingly large number of Navy families located in Alameda, and the fact that Alameda Navy families have recently indicated they are happy living in the Bay Area and are in no hurry to leave, I must exercise my right as a taxpayer to protest the idea of needlessly spending $1+ billion on new Navy shipyard facilities, new Navy family housing, and other costs associated with closing the Alameda Naval complex.

If the Navy wants more modern facilities for its ships, why don't they just improve the facilities at Alameda? Why doesn't the Navy move the P-3 aircraft squadrons resident at the already closing NAS Moffett Field in Mountain View, CA to NAS Alameda where P-3 engineering, logistics, overhaul, repair, and modification facilities currently exist at the Naval Aviation Depot there? Closing Naval Aviation Depot Alameda and Naval Air Station Alameda won't eliminate the workload performed there. It will just be money spent elsewhere. The Bay Area is strategically one of the best locations the United States has to offer the United States Navy. Operation Desert Storm was a testament to that.

Please do all that you can to enlighten the Base Closure and Realignment Commision and other government policy makers on the issues I have brought forth herein. We must oppose the seemingly insensible idea of closing Naval Aviation Depot Alameda and Naval Air Station Alameda.

Ted E. Price
Aerospace Engineer

H. JAMES SAXTON
3D DISTRICT NEW JERSEY

COMMITTEES
HOUSE ARMED SERVICES
SUBCOMMITTEES
MILITARY ACQUISITION
MILITARY INSTALLATIONS AND FACILITIES

DISTRICT OF COLUMBIA

JOINT ECONOMIC COMMITTEE

Congress of the United States
House of Representatives
Washington, DC 20515-3003

COMMITTEES
MERCHANT MARINE AND FISHERIES
SUBCOMMITTEES
RANKING REPUBLICAN
ENVIRONMENTAL AND NATURAL RESOURCES
OCEANOGRAPHY, GREAT LAKES AND OUTER CONTINENTAL SHELF

SELECT COMMITTEE ON AGING
SUBCOMMITTEES
HEALTH AND LONG TERM CARE
HUMAN SERVICES
TASK FORCE ON SOCIAL SECURITY AND WOMEN

April 6, 1993

Mr. Bob Meyer
U.S. Gerneral Accounting Office
441 G Street
Room 5102
Washington, D.C. 20548

Dear Mr. Meyer:

I was glad that you and Dave took time out of your busy schedules to meet with Steve Moffitt, Barry Rhoads and me.

I have enclosed several documents that state clearly the problems associated with transporting fuel to Plattsburgh during the Winter.

The Defense Logistics Agency believes that during normal operations there will be a 200 to 300 thousand barrel shortfall of JP-4 during the winter months of normal day to day operations.

No contingencies could be conducted out of Plattsburgh during the winter without its storage tanks being emptied. Therefore, there is no way the Air Force can turn this base into the Mobile Regional Contingency Center as it has planned.

I also believe that by calling General Gray or his staff at McGuire Air Force Base you will find that they have many serious concerns about carrying out the mission in the "north country."

I hope this information is helpful as you prepare your report. If you have any questions regarding the enclosed material, or the information we gave you at my office, please feel free to contact me.

Sincerely,

Jim Saxton
Member of Congress

REPLY TO
☐ 438 CANNON HOUSE OFFICE BUILDING WASHINGTON, DC 20515-3003 (202) 225-4765
☐ 100 HIGH ST., SUITE 301 MT. HOLLY, NJ 08060 (609) 261-6800
☐ 7 HADLEY AVE TOMS RIVER, N.J. 08753 (908) 914-2020
☐ 1 MAINE AVENUE CHERRY HILL, NJ 08002 (609) 428-0520

United States Senate
WASHINGTON, DC 20510

April 9, 1993

Mr. Charles A. Bowsher
Comptroller General
General Accounting Office
441 G St. NW
Washington, DC 20548

Dear Mr. Bowsher:

We are writing to share our concerns about Defense Logistics Agency's recommendations to the Defense Base Closure and Realignment Commission to disestablish the Defense Logistics Services Center (DLSC) and to relocate the Defense Reutilization and Marketing Service (DRMS), both of which are currently located at the Federal Center in Battle Creek, Michigan.

We believe there are significant errors in the information and assumptions used by the Department of Defense in formulating these recommendations. The Defense Logistics Agency (DLA) did not use the accurate information provided by tenants of the Battle Creek Federal Center in calculating the costs of operations there. DLA has not provided supporting information for its assumptions about costs that would be incurred in Columbus, Ohio if its proposed realignments were implemented. Critical mission requirements and capabilities of the present site were not appropriately weighed by DLA. We believe a more complete and accurate assessment of all costs associated with moving DLSC and DRMS missions would have yielded a very different recommendation.

DLA's recommendations would have a devastating impact on the Battle Creek and Kalamazoo area economies and, if implemented, could result in additional loss of tenants and employees at the Federal Center. Because the analysis supporting DLA's recommendations is so inadequate, implementation might actually result in higher costs to the government and significant disruption in the essential missions of these agencies.

GAO's report on the 1991 BRAC recommendations cited "inaccurate data," "inadequate documentation of decision-making and deliberation," and "improper pre-selection of candidates for closure/realignment" as major problems. All of those factors should be investigated with respect to the DLA's 1993 BRAC recommendations.

Mr. Charles A. Bowsher
April 9, 1993
Page Two

We formally request that you examine at least those issues outlined in the attached questions as you review the work that the Department of Defense has presented to the Base Closure and Realignment Commission.

Thank you for your attention to these concerns.

Sincerely,

Donald W. Riegle, Jr.
United States Senator

Carl Levin
United States Senator

Nick Smith
Member of Congress

enclosure

cc: The Honorable James A. Courter, Chairman
Defense Base Closure and Realignment Commission
1700 North Moore Street, Suite 1425
Arlington, VA 22209

STATE OF OHIO
WASHINGTON OFFICE

GEORGE V. VOINOVICH
GOVERNOR

MIKE DEWINE
LT. GOVERNOR

THOMAS F. X. NEEDLES
DIRECTOR

April 13, 1993

Ted —

As we discussed, the attached material was prepared by our National Guard and we believe it makes a very effective case on behalf of the 178th. I hope Mr. Conahan will review this information prior to his testimony next week.

Many thanks, Ted.

Tom

444 N. Capitol Street, N.W. • Suite 546 • Washington, D.C. 20001 • (202) 624-5844

INFORMATION PAPER ON AIR NATIONAL GUARD
REALIGNMENT AS LOOKED AT BY 1993
BASE CLOSURE EXECUTIVE GROUP (BCEG)

BACKGROUND: Due to high operational costs, Rickenbacker ANGB was identified for closure by the 1991 Base Realignment and Closure (BRAC) Commission.

The two Air National Guard (ANG) and one Air Force Reserve (AF RES) flying units located there were programmed to move to Wright Patterson Air Force Base.

Rickenbacker Airport was subsequently opened to commercial use which presented an option to moving the ANG units.

ANG units typically operate for very low costs on civilian airfields.

Cost studies showed that leaving the ANG units at Rickenbacker as tenants to the newly formed Rickenbacker Port Authority was more cost effective than moving the units to Wright Patterson AFB.

PROBLEM: After Rickenbacker became a civilian airfield, the Governor of Ohio proposed the option of leaving the ANG units at Rickenbacker as tenants.

For unknown reasons, but under the pretense of "excess capacity" at Wright Patterson AFB, the BCEG only explored two options:

1. Move Rickenbacker units to Wright Patterson AFB.
2. Move the Springfield ANG unit to Wright Patterson AFB.

In reality, cost analyses reflect that neither option is cost effective. The payback period in both cases is far beyond 20 years.

ANALYSIS: ANG units on civilian airfields are efficient operations and very inexpensive to operate. Thus, there is not much to be saved in operating costs if a unit is moved onto an active base.

Conversely, moving is expensive. Change always incurs construction costs which are expensive. Closing/activating facilities, and moving people and equipment are also expensive.

One of the eight criteria considered by the BRAC commission requires a return on investment (ROI) of 5 years or less.

Typical ANG cost models reflect ROI's of 20-100 years and up.

ANG COSTS MODELS: This information was obtained from published minutes of 1993 Air Force BCEG meetings.

12 January 1993 -- General Sheppard, NGB/CF, presented a briefing on potential closure and realignment of ANG units.

Assumptions were that ANG units stay within states and move to active Air Force installations.

Since savings would be low (as discussed above), the ANG only evaluated potentially low costs moves. General Sheppard's slides reflected 31 ANG units as possible options.

After assessing each base, the ANG recommended three (3) potential options for further evaluation (Great Falls, MT; McEntire, SC; Lincoln, NE).

General Sheppard also proposed leaving ANG units in the cantonment area at Rickenbacker and the BCEG agreed that all components of this proposal be evaluated.

1 February 1993 -- General Sheppard briefed on ANG excursions developed for the ANG locations identified in the 12 January 1993 meeting.

The ANG developed three excursions moving Great Falls IAP to Malstrom AFB, however, none of them were sufficiently attractive to warrant further consideration.

The ANG prepared two excursions for moving McEntire to Shaw AFB, and they were clearly not effective.

The Lincoln to Offutt excursion appeared to be cost effective and the BCEG directed the ANG to perform a site survey on this excursion.

General Sheppard again recommended leaving the Rickenbacker units in the cantonment area and also stated the ANG would prefer keeping the Guard unit at Springfield. The costs comparison summary only reflected two options:

1. Rickenbacker units to Wright Patterson AFB.
2. Springfield unit to Wright Patterson AFB.

An additional excursion of moving Tucson to Davis Monthan AFB was also reviewed. This move would require $60 million in construction and would never yield a payback.

9 February 1993 -- Lt Colonel Callaghan, AF/XOOR, briefed proposed redirection of moves previously directed by BRAC I and II.

One proposal was for ANG units at Rickenbacker to remain in the cantonment area and the Springfield unit would move to Wright Patterson AFB.

10 February 1993 -- The BCEG reviewed estimates for moving the Springfield unit to Wright Patterson. Estimated costs were $3 million for construction and $1 million to relocate for a total of $4 million. Recurring savings were estimated at approximately $1 million per year.

SUMMARY:

The BCEG reviewed 31 ANG units (locations) for possible relocation to active Air Force bases (did not include Rickenbacker or Springfield).

Various excursions were examined for each proposed ANG move. The excursions looked at various combinations of unit aircraft conversions, and facilities used on the active base (new and/or excessed).

The least costly excursion of all options reviewed assumed:

1. The Guard would convert to KC-135 aircraft at "no cost to BRAC."

2. The Air Force would consolidate KC-135 units to make room for the Guard to minimize construction.

Even with no-cost/min-cost assumptions, the payback on this excursion was six years.

As a separate issue, the BCEG reviewed a redirect of the 1991 BRAC decision on Rickenbacker.

Due to "excess space" at Wright Patterson AFB, the BCEG reviewed Rickenbacker or Springfield to move to Wright Patterson AFB.

Springfield was an obvious less costly option since it was only one unit (Rickenbacker was two) and was much closer (15 miles vs. 65 miles).

FALLACIES:

After a review of 31 ANG units and several excursions for moving, none of the options presented a payback of less than six years. And, this option with a six year payback, assumed no cost to convert a unit from F-16 aircraft to KC-135 aircraft.

The BCEG erred in assuming that "excess space" at Wright Patterson AFB required either Springfield or Rickenbacker to move.

GEORGE J. MITCHELL
MAINE

United States Senate

WASHINGTON, DC 20510-1902

April 14, 1993

The Honorable Charles A. Bowsher
Comptroller General of the United States
General Accounting Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Bowsher:

I am writing to express my strong opposition to any action by the General Accounting Office (GAO), in its report on the Defense Department's 1993 base closure and realignment recommendations, to single out Portsmouth Naval Shipyard as a possible substitute for either of the shipyards recommended for closure.

As you know, under the law the GAO must submit by April 15 a report containing a detailed analysis of the Defense Department's 1993 base closure recommendations and selection process. This must be a fair and balanced review that does not prejudice any particular facility not selected for closure by the Defense Department.

In order to comply with the base closure law, the Navy undertook an analysis of shipyards that was consistent with the approved force structure plan. As a result, it did not consider shipyard closure options that would cause a shortfall in the Navy's capacity to support the workload associated with that force structure. Consequently, it would be counter to the law's requirement for consistency with the force structure plan, and therefore inappropriate, for GAO to suggest possible substitutes to the Defense Department's closure recommendations that would not support the certified workload requirements.

In light of the above, I strongly urge you to ensure that Portsmouth Naval Shipyard is not singled out as a possible substitute for either of the shipyards recommended for closure. Such an action would unfairly prejudice the Commission's review of shipyards and could unduly influence its independent assessment of the Defense Department's recommendations.

I appreciate your immediate personal attention to this very important matter.

Sincerely,

George Mitchell

George J. Mitchell

COMMITTEE
ON
APPROPRIATIONS
SUBCOMMITTEES:
COMMERCE, JUSTICE, STATE
AND JUDICIARY
LEGISLATIVE
VICE CHAIRMAN

SELECT COMMITTEE ON HUNGER

Congress of the United States
House of Representatives
Washington, DC 20515-4608

JAMES P. MORAN
8TH DISTRICT OF VIRGINIA

WASHINGTON OFFICE
430 CANNON HOUSE OFFICE BUILDING
WASHINGTON, DC 20515-4608
(202) 225-4376

FEDERAL GOVERNMENT
SERVICE TASK FORCE
CO-CHAIRMAN

April 15, 1993

Mr. Charles Bowsher
Comptroller General of the United States
U.S. General Accounting Office
441 G Street, NW
Washington, D.C. 20548

Dear Mr. Bowsher:

Attached is a copy of a report delivered to Mr. Robert Myer of the GAO by Julian W. Fore, Office Managing Partner of Arthur Anderson. The letter points out many deficiencies which his firm has found in analyzing the data provided by the Department of Defense in recommending closure or realignment of a large number of DoD activities in the National Capital Region.

Specifically, they have found that the Cost of Base Closing and Realignment Actions (COBRA) model does not accurately determine costs associated with such major cost categories such as mission, personnel, overhead, and construction.

Because the COBRA model is central to the analysis supporting these massive closures and realignments, I believe that this research by Arthur Anderson would be extremely useful as the GAO continues to analyze the Department of Defense's recommendations. If I can provide GAO with any further information, please contact me.

Sincerely,

James P. Moran

JPM/jjg

ARTHUR ANDERSEN

ARTHUR ANDERSEN & CO. SC

April 13, 1993

US General Accounting Office
441 G Street, NW
Washington, D.C. 20548

Attn: Mr. Robert Myer
Room 5102

Arthur Andersen & Co.

Suite 400
One Thomas Circle NW
Washington DC 20005-5805
202 833 5500
202 833 5515 Fax

Dear Mr. Myer:

As we discussed last week, Arthur Andersen is working on behalf of the Crystal City Consortium, the Office of Congressman Moran, and other interested parties to independently evaluate the analysis conducted by the Department of Defense ("DoD") which resulted in the recommendation to realign a significant portion of the naval commands presently located within the National Capital Region ("NCR"). In particular, our efforts have focused on an evaluation of the Cost of Base Closing and Realignment Actions ("COBRA") analysis as cost savings is reported to be the primary rationale for this realignment.

To date, we have completed the following tasks:

- Familiarized ourselves with the Navy and DoD base closure (and realignment) process and analytic framework.
- Re-created the NCR arithmetic conclusions from the COBRA analysis by loading inputs into the COBRA model. We received both the inputs and the model from the Defense Base Closure and Realignment Commission ("BCC").
- Copied, reviewed, and inventoried all relevant documents from the BCC Library ("BCCL") pertaining to the NCR. We have visited the BCCL several times to ensure we have accessed all available information. In addition, we reviewed other relevant background documents and reports, such as reports on the 1989 and 1991 base closure processes.
- Compared and verified the COBRA inputs with the "Certified Data Calls" obtained from the BCC and other information received from the Navy.
- Performed sensitivity analyses on the results of the COBRA analysis.

Our more general comments include the following:

- The COBRA computer model is a "black box" model. It is nearly impossible to penetrate it to understand its implicit calculations (i.e., the relationship between input and output is not always clear). It is not possible to verify the accuracy of the result, let alone unstated but potentially significant assumptions internal to the model.

ARTHUR ANDERSEN

ARTHUR ANDERSEN & CO. SC

Mr. Robert Myer
- 2 -
April 13, 1993

- Documentation supporting the assumptions to the COBRA analysis is severely lacking. There are numerous "Certified Data Calls", but we found little documentation linking raw information from the data calls to the COBRA analysis (particularly inputs where analysis or judgment is required).

- COBRA was designed for closing or realigning entire military bases or major functions; it was not designed for realigning purely administrative commands; this, we believe, requires a different kind of analysis.

- As applied to the NCR, the COBRA analysis measures the impact of a potential realignment ***and*** a change the method of procuring space. In other words, in the case of the NCR, the COBRA analysis confuses a locational analysis with a lease versus own analysis. There is no ability to disaggregate the results to determine to what extent the locational analysis -- the realignment decision -- separately affects the end result. Moreover, we believe the COBRA model is not as suited to a "lease versus own" analysis.

- The GSA, as well as the Navy, have conducted indepth studies of housing alternatives in the NCR. The proposed realignment is inconsistent with much of that work. There is no reconciliation or explanation of what has come before. This is particularly germane in that basic assumptions -- such as the requirement of individual commands to be located proximate to the Pentagon -- are widely divergent.

What follows are more specific comments, focusing on four of the six major cost categories in the COBRA analysis: mission, personnel, overhead, and construction.

Mission

According to several DoD and BCC sources, "mission costs" include changes in operating costs not identified elsewhere in the model. Rent savings are often included in this category (or in overhead). However, we have not been able to trace prospective rental savings back to DoD-supplied lease cost estimates reportedly taken from Certified Data Calls. The black box nature of the COBRA model prohibits a property-by-property rental rate evaluation. As such, actual costs and market driven escalation rates cannot be traced. Further, the rental rate used in the COBRA analysis is GSA's standard level usage charge ("SLUC"), which bases charges on market lease rates and GSA overhead. These rates are often considerably higher than the actual rental rates charged by the landlord(s). Since this is primarily a transfer of costs between two federal government entities, it is, we believe, inappropriate to integrate this higher rate into the COBRA analysis which has the effect of distorting the results. These costs could approach a stabilized annual premium of between $5.0 million and $10.0 million over market rental rates.

ARTHUR ANDERSEN

ARTHUR ANDERSEN & CO. SC

Mr. Robert Myer
- 3 -
April 13, 1993

Personnel

The recommendations set forth in *Base Realignment and Closing 1993* ("BRAC-93") assume defacto that significant personnel savings can be generated by realigning individual commands, and by implication that these savings can only be realized through a realignment. This results in a total present value savings of approximately $475.0 million (discounted at 7.0 percent), or 80 percent of total BRAC-93 net savings for the NCR. There is no reason to expect that these same savings could not be realized at the current command locations through a re-organization of proximate functions. Our experience in private industry would suggest that "in place" personnel eliminations are entirely achievable.

We find no materials whatsoever to document this conclusion -- that is, that the personnel eliminations can only be achieved by a realignment. In response to a request from Congressman Moran, The Department of the Navy, Office of the Secretary, has indicated that the number of "positions identified as eliminated" came from individual Certified Data Calls. In search of the facts, we reviewed all data calls in the BCCL, including an inventory of data calls received from each command dated March 17, 1993. Only one of these Certified Data Calls related to the NCR, and it provided no support whatsoever for the number of "positions identied as eliminated". In the same correspondence from Congressman Moran, the question was asked, "Does the analysis consider to what extent these eliminations could be implemented in existing locations?" The response was "No". We are left to conclude that no support is available, that the case is not proven, and that cost savings attributable to personnel eliminations cannot be included as economic support for the NCR realignment.

Overhead

Although rental costs are reported to have been incorporated in mission costs, the volume of overhead savings for certain clusters (e.g., Cruitcom, Patuxent River, and SPCC) suggest that rental costs may have also been incorporated in overhead. Therefore, our comments on mission costs also apply to overhead costs. Further, the actual components of overhead costs and savings are unclear. As such, the results cannot be verified.

Construction

The recommendations set forth in BRAC-93 assume that no capital improvements will be required for substantially all of the existing office space which will receive realigned personnel. A field inspection of the space anticipated to accommodate the BRAC-93 realigned personnel indicates that a significant amount of this space is

ARTHUR ANDERSEN

ARTHUR ANDERSEN & CO. SC

Mr. Robert Myer
- 4 -
April 13, 1993

substandard and does not meet current GSA standards. Such space will then require considerable investment prior to occupancy.

For example, approximately 740,000 rentable square feet of office space will be required to accommodate the personnel realigned to the White Oak Facility (3,799 personnel). The COBRA analysis provides for 110,000 rentable square feet of new construction and 80,000 rentable square feet of renovated space. No provisions are made for the 550,000 rentable square feet of remaining office space requirements. Our field inspection indicates that there are 200,000 rentable square feet of existing available space at the facility. This space does not conform with GSA fire safety standards, as it lacks sprinklers, and is reported to contain a considerable amount of asbestos. This space will require additional renovation to comply with Navy office space standards. Additionally, this space will require additional renovations to comply with Navy office space requirements. The remaining 350,000 rentable square feet of office space that will be required at the White Oak facility will require a combination of new construction and renovation. Our preliminary estimate (discounted at 7.0 percent) for these additional construction costs at the White Oak facility is between $50.0 and $70.0 million. Other receiving facilities have similar problems, though of lesser magnitude. We are forced to conclude that construction costs generally are substantially understated.

Beyond the aforementioned, there are items germane to the analysis of a large-scale relocation that were not given adequate consideration. First, the BRAC-93 evaluation of realignment costs did not consider other significant recurring costs, such as commutation costs, which will likely be incurred as a result of commands being relocated farther from the Pentagon and major Navy contractors, even when the efficiencies of collocation, such as at the Patuxent River facility, are considered. Based on surveys previously prepared by GSA and the Navy, our preliminary estimate of the additional cost of commuting to the Pentagon, major Navy contractors, and commercial airports, as well as between the new, more remote commands, may approach $70.0 million (discounted at 7.0 percent). Moreover, the COBRA analysis did not incorporate the productivity losses which are normally attributable to a large-scale relocation. These costs, in our experience, can be quite significant.

Second, the BRAC-93 evaluation of the NCR includes the realignment of 1,607 personnel from Philadelphia to Mechanicsburg, Pennsylvania. Since neither of these facilities are within the NCR, and since the prospective savings of the realignment is $78.0 million (discounted at 7.0 percent,) it obfuscates the savings inherent in the realignment of the SPCC cluster and the NCR commands under consideration.

Third, no credit was given for the Navy's ability to reasonably secure favorable lease rates in today's market. In fact, the manner in which rental rates are calculated (ignoring, for the moment, any GSA subleasing profit) could overstate actual rents today by $3.00 to $4.00 per

ARTHUR ANDERSEN

ARTHUR ANDERSEN & CO. SC

Mr. Robert Myer
- 5 -
April 13, 1993

rentable square foot. It has been our experience that major, high credit tenants typically seek and receive rental rate reductions in today's market in exchange for lease term extension.

Conclusion

There are very significant gaps in the analytic process starting with the collection of data to the conclusions derived from this data. The COBRA model introduces many items, such as the savings from personnel eliminations, which are confusing and potentially lead to erroneous results. The case for a realignment has simply not been made. Further, the up-front costs, represented by the total adjusted construction and moving costs may not be justified when one considers what could be a very long pay back. The basic presumption of this analysis -- that is a predetermined conclusion to realign selected commands from the NCR -- is flawed. In no way have the efficiencies and savings which could be achieved in-place been examined. If the real issue is a lease versus own decision, then the analysis and conclusions presented do not provide the basis for an informed, business-like decision.

* * * * *

I hope this brief summary of our findings is helpful as you finalize your evaluation. I will keep you up-to-date as our evaluation continues. We would welcome the opportunity to meet with you. Please contact me at your convenience if we can be helpful in any way.

Very truly yours,

ARTHUR ANDERSEN & CO.

by Julian W. Fore

Julian W. Fore

cc Governor L. Douglas Wilder
Senator John W. Warner
Senator Charles S. Robb
Congressman James P. Moran
James B. Hunter III

SMZ60230\Myer.L02

City of Chicago
Richard M. Daley, Mayor

Department of Aviation

David R. Mosena
Commissioner

Suite 3000
20 North Clark Street
Chicago, Illinois 60602
(312) 744-6892
(312) 853-0478 (TT/TDD)
(312) 744-1399 (FAX)

April 15, 1993

Mr. Robert Meyer
Assistant Director
NSIAAD/DMN
General Accounting Office
44 G Street, N.W., Room 5102
Washington, DC 20548

Dear Mr. Meyer:

As you know, the Base Realignment & Closure Commission is now considering the Department of Defense's recommendation to close and relocate the military installation at O'Hare International Airport. Unlike the vast majority of base closures being considered by the Commission, this recommendation is in response to a proposal by the City of Chicago. As someone involved in evaluating whether the recommendation is in keeping with the intent of the closure legislation, I would like to bring certain pertinent facts about our proposal to your attention.

The Mayor of the City of Chicago made this proposal for two reasons, which I believe demonstrate its uniqueness as well as the responsible nature of the suggested action to the national interest as opposed to a parochial desire.

First, O'Hare is the busiest airport in the world and congestion and delay problems at O'Hare affect the entire national aviation system. The findings of the Chicago Delay Task Force, a jointly commissioned study by the City of Chicago, the Federal Aviation Commission and the airline tenants at O'Hare, determined that over 100,000 hours of delay are incurred annually at O'Hare, substantially more than any other airport in the United States. The direct operating costs associated with this magnitude of delay exceed $188 million annually. The resolution of this problem is particularly critical today in light of the serious financial condition of the nation's airline industry. Operational improvements that can be implemented as a result of the proposed military relocation will play a key role in reducing delay problems at O'Hare and across the country.

Second, the Mayor is committed to aggressively identifying all opportunities to maximize economic development for Chicago. Since the City is the owner of the busiest airport in the world, we must utilize every opportunity for airport-related development in order to provide jobs for the people of the City and the region. The relocation of the existing military installations at O'Hare will permit us to accomplish this goal while at the same time providing an economic stimulus to the new military host community.

The enclosed materials are intended to demonstrate how the City's proposal is consistent with the intent of base closure legislation and to address some of the specific concerns already raised by some members of the Commission.

The request by the City of Chicago that the military installation located at the world's busiest airport be closed and its current tenants relocated is exactly the type of community recommendation contemplated in Section 2924, of the Base Closure and Realignment Act. The Committee Report accompanying the bill states specifically that:

> "...[in] the painful process of base closure, special consideration ought to be given to communities that actually want their local facility closed." (H.R. Rep. No. 101-665, p.388.)

Regarding the concerns raised by the Defense Finance and Accounting Services (DFAS) analogy, we understand the responsibility that you have to carefully consider the perception among some that our proposal could possibly create a nationwide bidding war for either the retention or closure of military bases. We do not believe that such an interpretation of our proposal is warranted (see attached discussion). Rather, we believe that, in addition to the specific statutory direction authorizing it, our proposal is consistent with the current federal policy of optimizing the use and coordination of our nation's military and civilian air transportation infrastructure. Furthermore, the Commission, unlike a federal, state or local purchasing agency, is not and cannot be, pursuant to its enabling legislation, guided in determining its recommendations to selecting the lowest or highest responsible bidder as the case may be. The Commission will make, as they have in the past, recommendations based upon the eight statutory selection criteria.

We believe that our request warrants the Commission's favorable consideration because it meets their eight criteria for review (see attached discussion) and will benefit all parties involved. Airfield, roadway and commercial development of the site will benefit not only the local economy but also enhance the efficient operation of the national air transportation system. The receiving location will benefit from the economic stimulus brought by the relocated units, and relocation will enable the military to enhance its operational readiness and potential for increased force structure.

I have also enclosed, for your information, an Executive Summary of our recently published economic impact study which I believe powerfully demonstrates the impact of commercial aviation activity at O'Hare International Airport -- 339,300 permanent jobs and more than $13.5 billion personal income annually.

I hope you found this letter and its enclosures helpful. Should you desire further details, please do not hesitate to contact me at 312-744-6886.

Sincerely,

David R. Mosena, Commissioner

Enclosures

OWEN PICKETT
2ND DISTRICT
VIRGINIA

CONGRESS OF THE UNITED STATES
HOUSE OF REPRESENTATIVES
WASHINGTON, D.C. 20515

COMMITTEES:
ARMED SERVICES
MERCHANT MARINE & FISHERIES

April 20, 1993

93-1255

The Honorable Charles A. Bowsher
Comptroller General of the United States
General Accounting Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Bowsher:

We are writing this letter to request the assistance of the GAO in evaluating the criteria used to disestablish the Norfolk Logistics Systems Business Activity (NLSBA) pursuant to the Base Closure and Realignment Acts (P.L. 100-526 and P.L. 100-510).

This afternoon, we received the enclosed document from the employees of the NLSBA. Based upon that communication and data we received earlier when touring the facility, we have serious reservations about the cost effectiveness of the recommendations of the Secretary of Defense.

We request that the GAO review the cost effectiveness of the OSD recommendations to the Base Closure and Realignment Commission regarding the NLSBA and military value matrices developed for that facility. We would greatly appreciate it if, as a part of that review, GAO personnel could schedule a site visit of the NLSBA.

Thank you very much for your assistance in this matter. If you have any questions, please be sure and let us know.

Owen B. Pickett
Member of Congress

Norman Sisisky
Member of Congress

WASHINGTON OFFICE:
2430 RAYBURN BUILDING
WASHINGTON, D.C. 20515
(202) 225-4215

VIRGINIA BEACH OFFICE:
2710 VIRGINIA BEACH BOULEVARD
VIRGINIA BEACH, VIRGINIA 23452
(804) 486-3710

NORFOLK OFFICE:
WARD'S CORNER
112 EAST LITTLE CREEK ROAD
NORFOLK, VA 23505
(804) 583-5892

19 April 1993

The Honorable Owen Pickett
2430 Rayburn Building
Washington, D.C. 20515

Dear Mr. Pickett:

On 17 April 1993, you met with a group of employees from the Information Processing Center located at the Norfolk Naval Base, Norfolk, Virginia.

In response to our discussion, we are submitting the following information under enclosure (1) dealing with the concerns that we have with the credited score we received on the MegaCenter selection list.

We are grateful for the support that you have given and will continue to give us.

Sincerely yours,

Bob Parker

BOB PARKER

On behalf of the employees of the Information Processing Center

Encl:
(1) Background/Facility Credited Scores

Ordering Information

The first copy of each GAO report and testimony is free. Additional copies are $2 each. Orders should be sent to the following address, accompanied by a check or money order made out to the Superintendent of Documents, when necessary. Orders for 100 or more copies to be mailed to a single address are discounted 25 percent.

Orders by mail:

U.S. General Accounting Office
P.O. Box 6015
Gaithersburg, MD 20884-6015

or visit:

Room 1000
700 4th St. NW (corner of 4th and G Sts. NW)
U.S. General Accounting Office
Washington, DC

Orders may also be placed by calling (202) 512-6000 or by using fax number (301) 258-4066.

PRINTED ON RECYCLED PAPER

United States
General Accounting Office
Washington, D.C. 20548

Official Business
Penalty for Private Use $300

First-Class Mail
Postage & Fees Paid
GAO
Permit No. G100

United States General Accounting Office

GAO

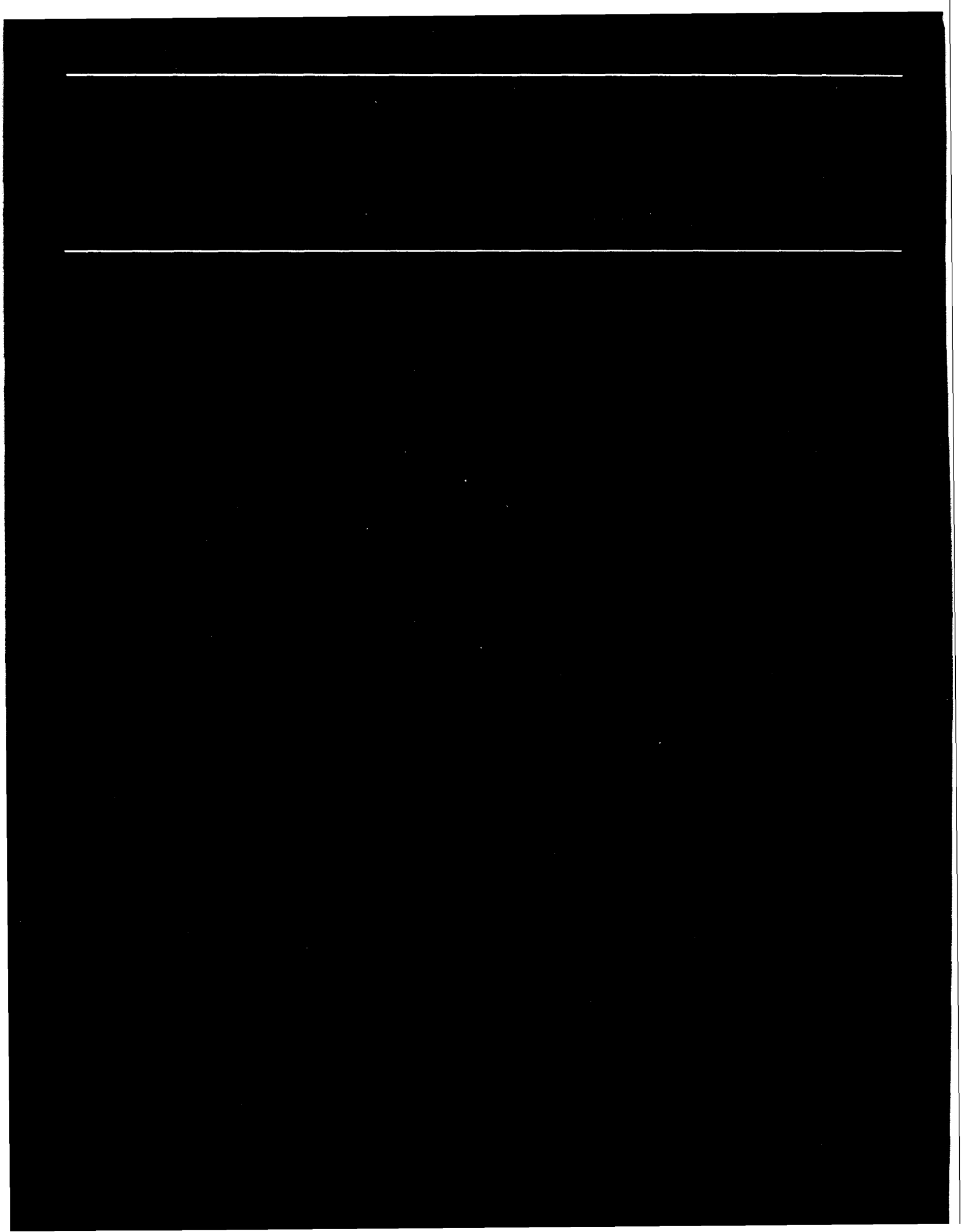
Report to the Chairman, Senate and House Committees on Appropriations

August 1992

MILITARY BASES

Navy's Planned Consolidation of RDT&E Activities

GAO/NSIAD-92-316



GAO

United States
General Accounting Office
Washington, D.C. 20548

National Security and
International Affairs Division

B-248366

August 20, 1992

The Honorable Robert C. Byrd
Chairman, Committee on Appropriations
United States Senate

The Honorable Jamie L. Whitten
Chairman, Committee on Appropriations
House of Representatives

The November 18, 1991, conference report on the Department of Defense's (DOD) fiscal year 1992 Appropriations Act required the General Accounting Office to study and report on DOD's plans to consolidate its defense research and development laboratories, with special emphasis on naval research, development, testing and evaluation; engineering; and fleet support activities. This interim report provides information on the Navy section cited in the conference report, addressing cost and savings data, personnel assumptions, duplication of research among the services, and RDT&E relative to the force structure.

We compared selected costs and savings estimates for the Navy laboratory consolidation plan submitted to the 1991 Base Closure and Realignment Commission in April 1991 to the costs and savings contained in the fiscal year 1993 budget estimates submitted to Congress in January 1992 (FY 1993 budget). Since new military construction and personnel reductions are the major cost and savings factors affecting a closure or realignment decision, we concentrated on those factors for this report. We will issue a report including information on the Air Force and Army consolidation plans in March 1993.

Background

In April 1991, the Navy submitted to the 1991 Base Closure and Realignment Commission (BRAC) its plans to consolidate 36 of its existing research and development activities[1] into one basic research laboratory and four distinct warfare centers: Air, Surface, Undersea, and Command, Control, and Ocean Surveillance. Under the plan, 7 RDT&E activities would be closed and 17 others would be realigned. With the exception of one portion of the Navy Command, Control, and Ocean Surveillance Warfare Center, the Navy's plan was approved by BRAC and endorsed in September

[1]The Navy considered 36 Research, Development, Test, and Evaluation (RDT&E); fleet support; and engineering facilities. Throughout this report we refer to all of these activities as RDT&E activities.

1991 by the Federal Advisory Commission on Consolidation and Conversion of Defense Research and Development Laboratories. DOD's total estimated cost to implement the closures and realignments was $542 million, with a total annual savings of about $115 million after implementation.

DOD directed the military services to use the Cost of Base Realignment Action (COBRA) model for estimating the costs, savings, and payback period related to closure and realignment actions for submission to BRAC. The model was used to estimate one-time closure and realignment costs, such as personnel and equipment moving expenses and new construction at other bases. The model also included one-time savings, such as construction costs that would be avoided altogether, and allowed for estimation of receipts such as land sale proceeds. Additionally, the model was used to estimate the annual recurring savings accrued by eliminating military and civilian personnel authorized positions and reducing base maintenance and overhead expenses. Following the estimation of costs and savings, the model calculated the payback period (the time in years from the completion of a base closure until a net payback would be achieved). We have generally endorsed the use of the model for base closure analyses but recognize its limitations and have made recommendations for improvements.[2] In October 1991, the Institute for Defense Analysis similarly endorsed the model as part of its review of laboratory realignment cost and savings estimates.

Results in Brief

In comparing the Navy's April 1991 estimates with the fiscal year 1993 budget estimates, we determined that the estimated cost of military construction for the Navy laboratory consolidation has not changed materially. We note, however, that the 1993 budget submission was not based on estimates derived from the COBRA model. Rather, the Navy used its regular budget process; therefore, the estimates are difficult to compare.

The difficulty in making comparisons was most pronounced in the area of personnel reductions. The April 1991 plan projected a reduction of 2,280 positions due to the consolidation of laboratories. The fiscal year 1993

[2]Military Bases: An Analysis of the Commission's Realignment and Closure Recommendations (GAO/NSIAD 90-42, Nov. 29, 1989), Military Bases: Observations on the Analyses Supporting Proposed Closures and Realignments (GAO/NSIAD 91-224, May 15, 1991), and letter to the Assistant Secretary of Defense for Production and Logistics (B-234775, June 3, 1992).

budget request includes a reduction of 11,252 positions resulting from work load reductions and consolidation of research and development laboratories. We could not determine what portion of this reduction is specifically related to the consolidation. We analyzed costs related to personnel relocations and determined that the percentage of people relocating would not materially affect the overall costs of the consolidation.

Finally, DOD is taking steps to reduce duplication among the services in common research areas through the Tri-Service Science and Technology Reliance Program. If implemented as planned, this effort, coupled with the Navy's consolidation plan, should reduce duplication among the Navy's RDT&E activities.

We also examined the Navy's RDT&E budget and found no precise relationship to the force structure.

Military Construction Costs

The cost of military construction associated with the consolidation of the Navy's laboratories has not changed substantially since the Navy submitted its estimates to the Base Closure Commission in April 1991. The total cost then was estimated to be $270 million; the 1993 budget request projected a total cost of $274.7 million. However, the 1993 figure was adjusted for inflation; the COBRA model figure was not. When we added inflation, the COBRA model estimate increased by $25.1 million, for a total of $295.1 million (see table 1).[3]

[3]We could not precisely inflate the estimate because the COBRA model did not identify specific projects or a particular year in which construction would occur. Rather, COBRA apportioned construction costs across the years of the realignment based on the estimated number of personnel arriving at the receiving base in a particular year. As a result, the inflated costs are slightly high because most personnel would arrive at a new base in the later years of a relocation, and the military construction would be subjected to higher inflation indices.

Table 1: Changes In The Cost of Military Construction Requirements

Dollars in millions

Warfare center	COBRA estimate	Fiscal year 1993 budget estimate	Difference
Air	$133.1	$122.2	($10.9)
Surface	102.1	95.6	(6.5)
Undersea	41.2	38.9	(2.3)
Command & Control	18.7	18.0	(0.7)
Total	**$295.1**	**$274.7**	**($20.4)**

We believe that the fiscal year 1993 budget requirements are valid based on discussions with officials and a review of justification documents at the three primary locations where construction will take place.[4] Construction at these locations accounts for $208.7 million of the $274.7 million in the budget request. The construction estimates assume space being made available at St. Inigoes, Maryland, resulting from a future BRAC realignment decision.

Personnel Savings

Personnel savings included in the COBRA model data submitted to the Commission in April 1991 were based on the elimination of 2,280 positions because of the consolidation of similar functions. The COBRA model calculated recurring savings by multiplying a standard salary by an estimated number of positions to be eliminated. The fiscal year 1993 budget request projects the reduction of 11,252 positions from research and development laboratories. This reduction includes positions deleted because of work load reductions attributed to budget decreases, as well as the consolidation of the laboratories. We could not break down the reduction to determine the specific personnel reduction due to consolidation.

Personnel Assumptions

In developing the April 1991 estimate, the Navy used standard factors to determine how many people would be available to move if their positions were to be relocated. For the most part, the Navy used the standard factors

[4]The three are the Dahlgren Division of the Surface Warfare Center, Dahlgren, Virginia; the Newport Division of the Undersea Warfare Center, Newport, Rhode Island; and the Aircraft Division of the Air Warfare Center, Lexington Park, Maryland.

developed by the Air Force for use in a 1989 Logistics Management Institute study.[5] The Navy assumed that 53 percent of its employees would be willing to move (assuming that jobs would be available). The remainder was broken down by percentage as follows:

- 8.8 percent would be lost through normal attrition,
- 19.1 percent would retire early rather than move,
- 12.6 percent would quit working for the government, and
- 6.5 percent would be unwilling to move.

The COBRA model estimated costs, based on these percentages, for lump sum annual leave, retirement, severance, and unemployment payments associated with these losses. The model also estimated costs of severance and unemployment pay for employees who would be willing to move but for whom jobs would not be available.

The Navy's assumption that 6.5 percent of the people would be unwilling to relocate was one of the more contentious issues discussed during the base closure review process. To test the sensitivity of costs to this assumption, we asked the Navy to run the COBRA model for two situations with significantly different assumptions. We concluded from the results of this test that the impact on the cost of the percentage of people that would be unwilling to move is minimal.

First, we asked the Navy to determine the total personnel costs for a hypothetical realignment of 1,000 positions, assuming a $2,000 new hire cost and a permanent change of station for all the positions that would be transferring to a new location. The personnel cost of this move was $18.5 million. The Navy then ran the COBRA model assuming that 50 percent of its employees would be unwilling to move and that only 9.5 percent would relocate. The personnel cost of this move would be $19.9 million, an increase of only $1.4 million.

Second, the Navy ran the COBRA model for the Naval Air Development Center portion of the Naval Air Warfare Center consolidation, assuming that 40 percent of the personnel would be unwilling to relocate and 20 percent would move, as compared to the 53 percent originally estimated. The total cost of this move would be $188.5 million versus the

[5]COBRA: THE BASE CLOSURE COST MODEL (Logistics Management Institute Report PL809R1, May 1989).

original $184.2 million, and the payback period would increase from 14 to 15 years.

Duplication of Effort

The Navy's consolidation plan and the Tri-Service Science and Technology Reliance Program are aimed at reducing duplication of research and development work within the Navy and among the three military services.

Navy Consolidation Plan

According to the Navy's consolidation plan, the duplication of efforts ought to be eliminated as each warfare center assumes responsibility for a unique set of functions in one technical area or in specific leadership areas. According to Navy officials, RDT&E activities had previously competed for program funding and maintained similar capabilities. After approving the consolidation plan in April 1991, the Secretary of the Navy directed program managers to send new or additional in-house work to the activity assigned to take the lead in that area. Therefore, program managers will no longer be able to send work to any Navy RDT&E activity willing to perform that work.

The Navy is reorganizing the missions of each warfare center to ensure that similar work previously performed at several locations will be transferred to one assigned location. For example, according to the Navy's plan, the Undersea Warfare Center in Newport, Rhode Island, will be responsible for torpedo and torpedo countermeasure programs. Prior to consolidation, this work was performed at the Naval Underwater Systems Center in Newport, Rhode Island; the Naval Ocean Systems Center in San Diego, California; and the Naval Coastal Systems Center in Panama City, Florida.

In addition, the Naval Air Warfare Center's Aircraft Division is studying opportunities to eliminate duplication and increase the efficiency and effectiveness of its technical work. For example, the Aircraft Division established several teams to seek opportunities for integrating technical areas among its five sites: Trenton, New Jersey; Indianapolis, Indiana; Lakehurst, New Jersey; Warminster, Pennsylvania; and Patuxent River, Maryland. These teams consider (1) physically transferring functions to one location, (2) managing the work of several sites at one location, (3) transferring a function to another unit without physically transferring positions, (4) defining in memorandums of understanding related but nonoverlapping responsibilities within an area, and (5) maintaining the status quo.

Tri-Service Science and Technology Reliance Program

On November 25, 1991, the three services began implementing a science and technology reliance program to reduce redundant capabilities and eliminate duplication of effort in areas of mutual interest. Under this program, science and technology work may be jointly planned, consolidated at one location, or led by a single military service. The military services are to increase reliance efforts in 223 areas of technology: 28 broad areas (for example, conventional air/surface weaponry) and 195 subareas (for example, guidance and control).

DOD assigned responsibility for implementing and verifying compliance with program requirements to four tri-service groups:

- the Joint Directors of Laboratories, which will oversee reliance in 25 combat-related technology areas;
- the Armed Services Biomedical Research Evaluation and Management Committee, which will oversee reliance in medical technology;
- the Training and Personnel Systems Science and Technology Evaluation and Management Committee, which will manage reliance efforts in the manpower, personnel, and training areas; and
- the Joint Engineers, which will oversee reliance in civil engineering and environmental quality technology areas.

According to the Chief of Naval Research, the Navy plans to implement reliance agreements in fiscal year 1993.

RDT&E And the Force Structure

The Department of Defense is reducing and reshaping its military forces to adapt to changes in the strategic environment and the challenges of the post-Cold War era. Anticipated levels of defense funding during fiscal year 1992-97 and a reassessment of probable threats to the United States were key factors DOD used in developing its force structure plan. Under DOD's current plan, the size of the U.S. military will decrease by approximately 25 percent over the next 5 years. For example, the Army will have 6 fewer divisions, Navy battle-force ships will decline from 545 to 451, and the Air Force will have 9 fewer tactical fighter wings and 87 fewer strategic bombers.

The Defense Base Closure and Realignment Act requires DOD's base closure and realignment recommendations to ensure that a balance is maintained between the base structure and the force structure plan. For combat forces, this relationship is direct and relatively easy to define: as the number of planes or ships is reduced, there is a corresponding

reduction in the required base structure. For functions such as RDT&E, however, there is no precise relationship between force structure and the needed RDT&E base structure. Rather, the base structure required to support RDT&E is a function of the amount and type of RDT&E that is included in the budget.

In determining the level of RDT&E funding, the Navy must consider several factors, including the projected technological threat and the actions necessary to catch up or remain in front, the number of technologies that are represented in the current and projected inventory of required weapons systems, and historical data showing results from different investment levels in various RDT&E areas. The rise or fall in the RDT&E funding levels and basing requirements is more related to perceptions regarding those factors than to force structure. Table 2 shows past and current DOD budgets in relation to RDT&E funding.

Table 2: Relation of Navy RDT&E Funding to Navy Total Obligational Authority (TOA)

Dollars in billions

		Adjusted to 1992 dollars	
Year	**Navy TOA**	**Navy RDT&E**	**RDT&E (percent)**
1970	$96.2	$9.7	10.1
1971	76.5	7.8	10.2
1972	81.5	8.2	10.1
1973	80.7	8.1	10.0
1974	73.8	7.5	10.2
1975	66.6	7.3	11.0
1976	69.4	7.3	10.5
1977	76.7	8.0	10.4
1978	77.1	7.9	10.3
1979	74.1	7.9	10.7
1980	76.1	7.4	9.7
1981	84.8	7.5	8.8
1982	96.5	8.2	8.5
1983	106.9	8.3	7.8
1984	105.3	10.0	9.5
1985	117.8	11.4	9.7
1986	115.8	11.7	10.1
1987	113.5	11.7	10.1
1988	118.3	11.0	9.3
1989	108.7	10.3	9.5
1990	108.1	10.2	9.4

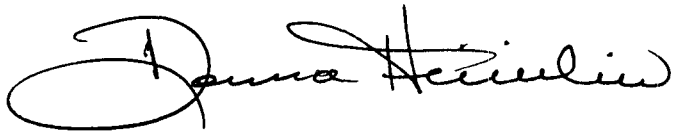
Scope and Methodology

We interviewed officials and analyzed documents obtained from Navy officials at Navy headquarters and field activities of selected naval warfare centers. We focused on military construction and personnel reductions factors because we believe they are the major cost and savings factors affecting a realignment decision.

We performed our work between May and August 1992 in accordance with generally accepted government auditing standards. We did not obtain written agency comments on a draft of this report, but we discussed the findings with Navy program officials and have incorporated their comments where appropriate.

Unless you publicly announce its contents earlier, we plan no further distribution of this report for 30 days. At that time we will send copies to the Chairmen of the Senate and House Committees on Armed Services, the Secretaries of Defense and the Navy, the Director of the Office of Management and Budget, and other interested parties. We will also make copies available to others on request.

Please contact me at (202) 275-8412 if you or your staff have any questions. Major contributors to this report were Robert L. Meyer, Assistant Director, and Raymond C. Cooksey, Senior Evaluator.



Donna M. Heivilin
Director, Logistics Issues

Ordering Information

The first copy of each GAO report and testimony is free. Additional copies are $2 each. Orders should be sent to the following address, accompanied by a check or money order made out to the Superintendent of Documents, when necessary. Orders for 100 or more copies to be mailed to a single address are discounted 25 percent.

U.S. General Accounting Office
P.O. Box 6015
Gaithersburg, MD 20877

Orders may also be placed by calling (202) 275-6241.

United States
General Accounting Office
Washington D.C. 20548

Official Business
Penalty for Private Use $300

First Class Mail
Postage & Fees Paid
GAO
Permit No. G100

Table II.1: Direct Production Hours (in thousands)

Air Logistics Center	Fiscal Year								
	1987	1988	1989	1990	1991	1992	1993	1994	1995[1]
Ogden	8,370	7,412	7,980	7,760	7,235	6,644	6,286	5,495	1,220
Oklahoma City	10,361	8,873	8,657	8,568	7,465	6,999	6,529	7,013	1,704
Sacramento	7,686	6.771	6,710	6,745	6,492	6,180	6,107	5,874	1,337
San Antonio	9,566	8,542	9,107	9,000	8,080	7,696	7,437	6,188	1,427
Warner Robins	7,752	7,037	7,837	8,051	6,738	7,148	7,595	7,533	1,724

[1]As of 12/31/94.

Table II.8: Direct Labor Efficiency

Air Logistics Center	Fiscal Year							
	1988	1989	1990	1991	1992	1993	1994	1995[1]
Ogden	93.9%	92.8%	91.1%	90.3	90.4%	90.4%	86.2%	83.4%
Oklahoma City	95.2%	95.7%	92.2%	95.7%	91.9%	94.3%	90.3%	87.3%
Sacramento	93.1%	97.4%	90.6%	94.3%	94.3%	93.7%	92.8%	90.4%
San Antonio	95.7%	94.8%	90.9%	93.5%	92.3%	81.7%	87.2%	98.3%
Warner Robins	93.7%	90.8%	90.0%	92.6%	95.1%	91.6%	89.8%	82.7%

[1]As of 12/31/94.

Table II.9: Output Per Paid Man-Day

Air Logistics Center	Fiscal Year								
	1987	1988	1989	1990	1991	1992	1993	1994	1995[1]
Ogden	3.96	3.86	3.79	3.71	3.80	3.89	3.77	3.39	3.13
Oklahoma City	3.94	3.84	3.78	3.72	3.95	3.88	3.74	3.69	3.47
Sacramento	4.11	3.84	3.97	3.61	3.98	3.99	3.89	3.73	3.52
San Antonio	4.20	3.87	3.96	3.67	3.81	3.79	3.23	3.11	3.44
Warner Robins	4.05	3.90	3.94	3.80	4.04	4.15	4.03	3.83	3.36

[1]As of 12/31/94.

Table II.16: Size of the Depot Maintenance Workforce (Work Years)

Air Logistics Center	Fiscal Year						
	1988	1989	1990	1991	1992	1993	1994
Ogden							
Civilian	6,765	7,014	7,143	6,452	5,835	5,633	5,196
Military	177	171	166	92	124	139	152
Total	6,942	7,186	7,309	6,644	5,959	5,772	5,348
Oklahoma City							
Civilian	8,360	8,375	8,158	6,888	6,521	6,236	6,451
Military	96	87	82	73	77	76	122
Total	8,456	8,462	8,239	6,962	6,328	6,312	6,573
Sacramento							
Civilian	6,344	6,368	6,488	5,864	5,519	5,552	5,558
Military	122	150	137	71	87	77	51
Total	6,465	6,517	6,624	5,936	5,606	5,629	5,609
San Antonio							
Civilian	8,031	8,356	8,512	7,547	7,198	7,099	6,552
Military	47	49	57	56	66	100	62
Total	8,078	8,405	8,569	7,603	7,264	7,199	6,614
Warner Robins							
Civilian	6,406	6,888	7,264	6,402	6,357	6,545	6,683
Military	77	80	56	56	61	62	76
Total	6,484	6,968	7,330	6,458	6,418	6,607	6,759

Note: Numbers may not total due to rounding.

Table II.17: Financial Operating Results (in millions)[1]

Air Logistics Center	Fiscal Year							
	1988	1989	1990	1991	1992	1993	1994[2]	1995[3]
Ogden								
Revenue	$348.9	$349.5	$381.1	$401.2	$417.4	$488.7	$384.3	$ 79.6
Cost of Goods Sold	376.7	368.0	421.4	383.9	395.0	449.4	417.6	90.8
Net Profit (Loss)	$ 27.8	($ 18.6)	($ 40.3)	($ 17.2)	$ 22.4	$ 39.2	($ 33.3)	($ 11.3)
Oklahoma City								
Revenue	$531.7	$530.1	$488.5	$491.6	$533.8	$642.6	$710.8	$123.2
Cost of Goods Sold	555.0	567.6	564.5	504.3	479.2	630.6	740.2	111.5
Net Profit (Loss)	($ 23.2)	($ 37.5)	($ 76.0)	($ 12.6)	$ 54.5	$ 12.0	($ 29.5)	$ 11.7
Sacramento								
Revenue	$368.4	$366.8	$380.6	$410.4	$478.8	$415.4	$447.3	$ 99.4
Cost of Goods Sold	380.6	376.6	378.8	406.6	412.1	408.5	491.0	121.4
Net Profit (Loss)	($ 12.2)	($ 9.8)	$ 1.7	$ 3.9	$ 66.6	$ 7.0	($ 43.8)	($ 22.0)
San Antonio								
Revenue	$449.2	$478.3	$501.5	$558.6	$512.9	$617.7	$667.1	$180.6
Cost of Goods Sold	483.1	529.0	519.9	517.4	507.4	661.8	712.6	165.3
Net Profit (Loss)	($ 33.9)	($ 50.7)	($ 18.4)	$ 41.2	$ 5.6	($ 44.0)	($ 45.5)	$ 15.3
Warner Robins								
Revenue	$378.8	$395.0	$440.1	$456.4	$474.8	$595.8	$583.9	$124.6
Cost of Goods Sold	389.1	413.7	472.8	455.4	438.2	543.6	583.4	129.3
Net Profit (Loss)	($ 10.3)	($ 18.7)	($ 32.7)	$ 1.1	$ 36.6	$ 52.2	$ .5	($ 4.7)

[1]Numbers may not total due to rounding.

[2]The ALCs' FY94 losses were due primarily to a negative surcharge that was used to return about $227 million in prior year profits to customers.

[3]As of 12/31/94.

Table II.20: Cost Per Direct Product Standard Hour of Work Accomplished (Fiscal Year 1994)

Cost Category	Air Logistics Center				
	Ogden	Oklahoma City	Sacramento	San Antonio	Warner Robins
Direct	$47.34	$75.62	$55.22	$91.21	$52.01
Labor	($28.24)	($24.56)	($28.07)	($22.86)	($24.91)
Materiel	($18.03)	($50.99)	($26.33)	($68.19)	($26.73)
Other	($ 1.07)	($ .06)	($ .82)	($ .17)	($ .38)
Production Overhead	$28.24	$31.45	$24.04	$36.82	$30.22
Labor	($16.73)	($16.10)	($16.53)	($21.62)	($14.39)
Materiel	($ 5.45)	($ 8.65)	($ 2.75)	($ 7.51)	($ 6.89)
Other	($ 6.06)	($ 6.69)	($ 4.76)	($ 7.68)	($ 8.93)
G&A Expenses[1]	$11.95	$8.74	$10.03	$8.46	$4.18
Labor	($ 5.32)	($4.70)	($ 4.52)	($3.59)	($3.37)
Materiel	($ .21)	($ .19)	($ .14)	($ .34)	($ .16)
Other	($ 6.41)	($3.85)	($ 5.37)	($4.53)	($ .65)
Total	$87.53	$115.81	$89.29	$136.49	$86.42
Labor	($50.30)	($ 45.36)	($49.12)	($ 48.07)	($42.67)
Materiel	($23.70)	($ 59.84)	($29.22)	($ 76.04)	($33.78)
Other	($13.54)	($ 10.61)	($10.95)	($ 12.38)	($ 9.97)

[1]General & Administrative Expenses

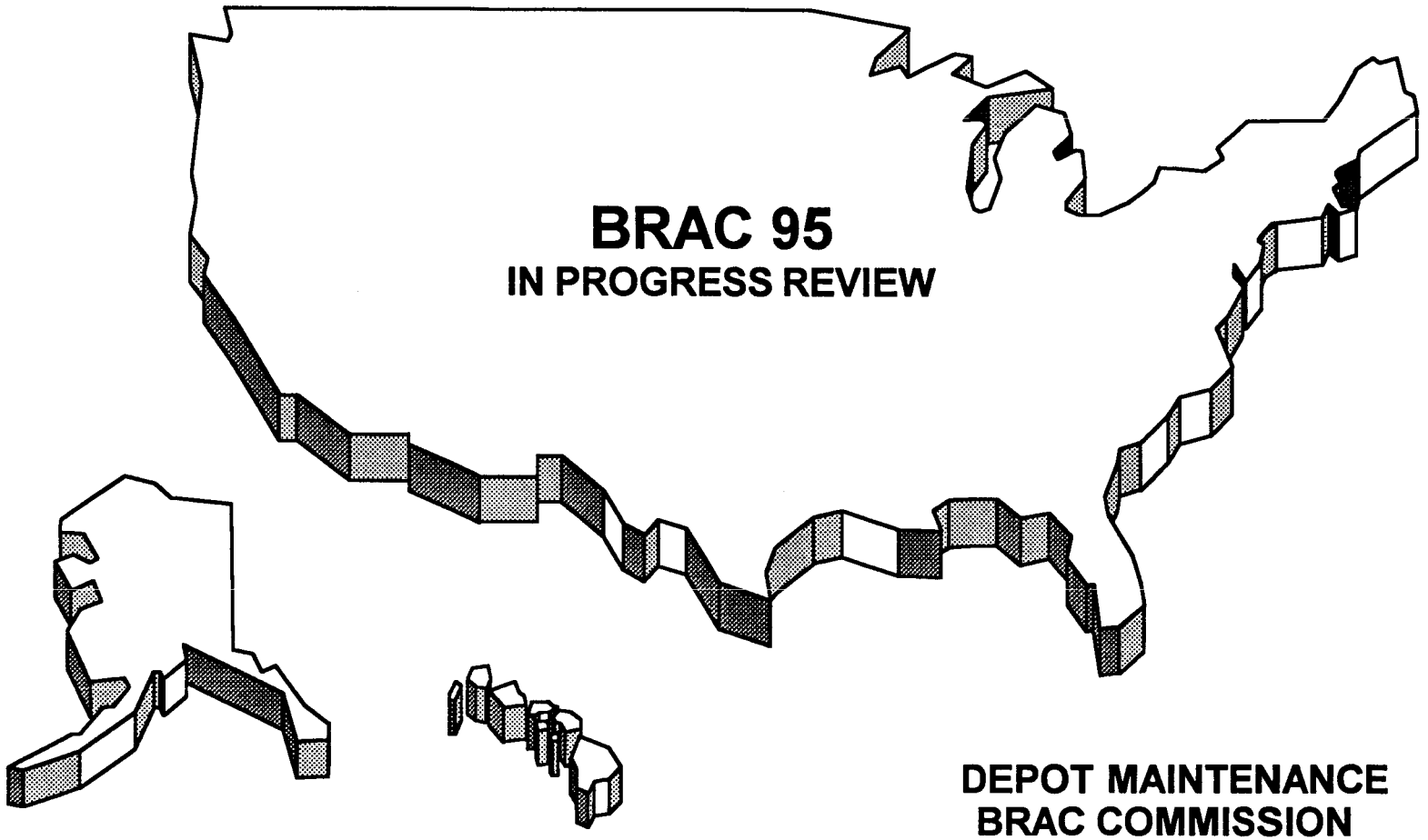
Table III: Direct Product Standard Hours (DPSHs) Produced in Fiscal Year 1994 (000s)

Workload Category	Air Logistics Center					Total
	Ogden	Oklahoma City	Sacramento	San Antonio	Warner Robins	
Aircraft	1,536	2,416	1,668	899	3,176	9,695
Missiles	444	-	-	-	-	444
Engines	11	969	-	931	-	1,911
Exchageables	1,605	2,219	1,840	3,288	2,202	11,154
Other Major End Items[1]	91	-	902	-	-	993
Local Manufacture	102	232	260	105	-	699
Software	843	432	539	115	918	2,847
Other	191	62	247	50	459	1,009
Total	4,823	6,330	5,456	5,388	6,755	28,752

[1]Primarily Communications-Electronics equipment.

Briefed

PURPOSE

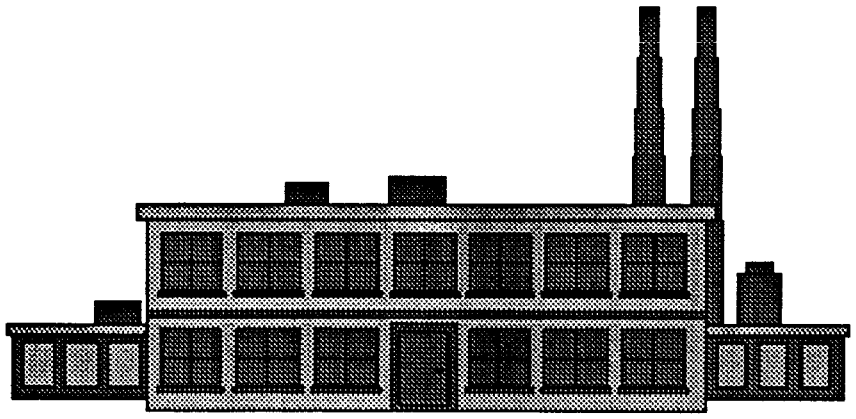


DEPOT MAINTENANCE
BRAC COMMISSION

8 MAY 95

PURPOSE

- IMPACT ON MAINTENACE DEPOTS FROM PAST BRACs
- BRAC 95 ARMY PRELIMINARY DEPOT RECOMMENDATIONS
- CAPACITY ANALYSIS
- BRAC COMMISSION ADDS
- SUMMARY



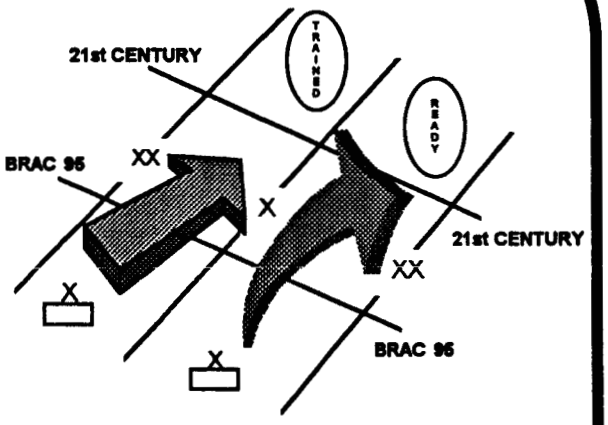
PAST MAINTENANCE DEPOT CLOSURES SINCE 1988

1988 STARTING POINT	10	
CLOSED OR REALIGNED:	5	
LEXINGTON-BLUEGRASS, KY		
SACRAMENTO, CA		
MAINZ,GE		
SENECA, NY		
TOOELE, UT		
SUB TOTAL	5	(50%)
BRAC 95	2	
LETTERKENNY, PA		
RED RIVER, TX		
TOTAL	3	(70%)

PLUS BRAC 95 CLOSED 67% OF THE INDUSTRIAL FACILITIES

STRATFORD ENGINE PLANT
DETROIT TANK PLANT

BRAC 95 STRATEGY



BALANCED APPROACH THAT:

- FOCUSES ON FUTURE - FORCE XXI
- CONSISTENT WITH STATIONING STRATEGY
- MEETS OSD EXPECTATIONS (ROBUST LIST)
- MAXIMIZES SAVINGS / MINIMIZES COST

DEPOTS

OPERATIONAL BLUEPRINT

- **RETAIN "CORE" CAPABILITIES SIZED TO SUPPORT SUSTAINMENT NEEDS**
- **CONSOLIDATE FUNCTIONALLY, MAINTAINING SEPARATE ELECTRONIC-ORIENTED, GROUND, AIR DEPOTS**

INSTALLATION ASSESSMENT

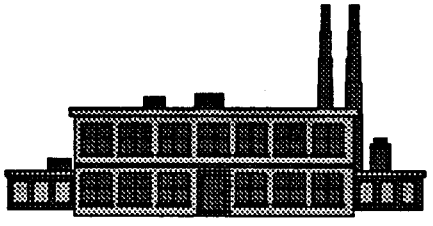
1. (6.4) TOBYHANNA
2. (6.1) ANNISTON
3. (5.0) RED RIVER
4. (2.3) LETTERKENNY

8/10

MILITARY VALUE ASSESSMENT

TOBYHANNA
ANNISTON
RED RIVER
LETTERKENNY

STUDY CANDIDATES



salient
⇒ cost to operate

depot capability
commodity, capacity

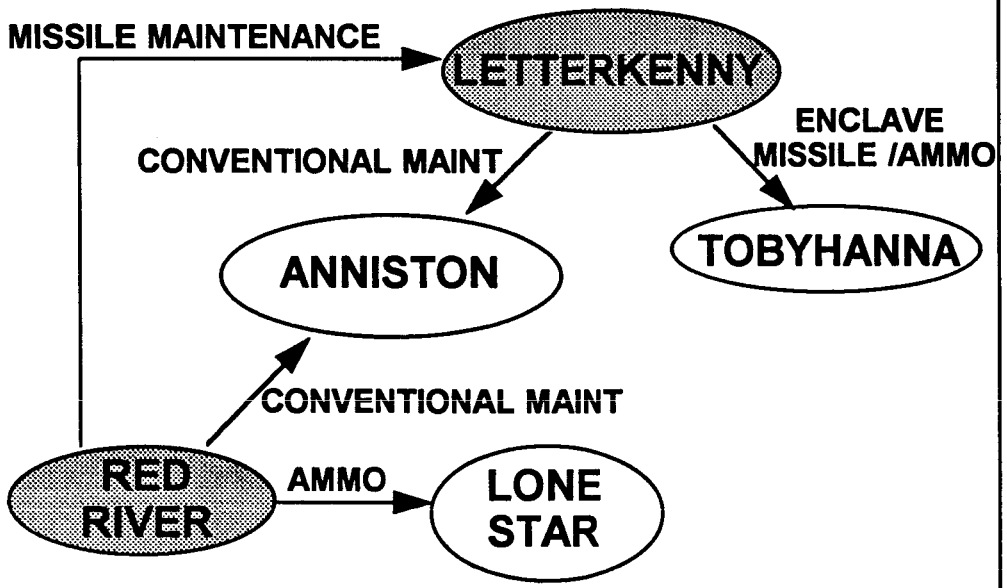
3 ground depots
1 electronic depot

MILITARY VALUE ASSESSMENT

TOBYHANNA AD
ANNISTON AD
CORPUS CHRISTI AD

RED RIVER AD
LETTERKENNY

LETTERKENNY AND RED RIVER ARMY DEPOTS



CLOSE RED RIVER AND LETTERKENNY

COSTS ($M)

O&M	$ 128
MILCON	$ 0
OTHER	$ 6
TOTAL	$ 134

PAYBACK PERIOD (YEARS)	IMMEDIATE
BREAK EVEN YEAR	2000
STEADY STATE ($M)	202
20 YEAR NPV ($M)	2,430

TRADE-OFFS
CLOSING 2 GROUND DEPOTS

PROs

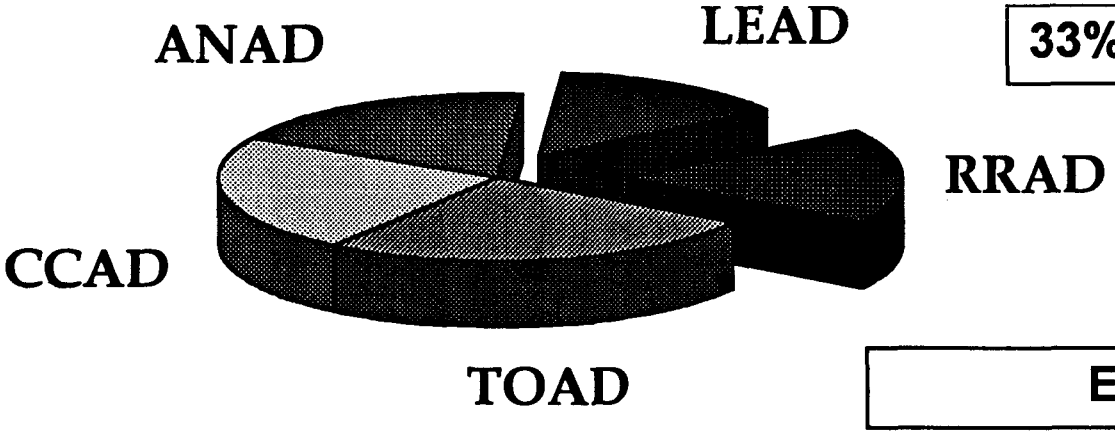
- SUPPORTS STATIONING STRATEGY
  - RETAINS 3 CORE DEPOTS
- JSCG SUPPORTS CLOSURE
- SIGNIFICANT FINANCIAL SAVINGS
  - $ 90 MILLION ANNUALLY
  - ($ 202 MILLION TOTAL)
- DOES NOT AFFECT FUNDED WORKLOAD
- MINIMAL RISK TO WARTIME SURGE
-
- WARTIME REQUIREMENTS SHORTAGE BASED ON 1-8-5, WITH SECOND SHIFT AND 7 DAY SCHEDULE - CAPACITY INCREASES 2.4 TIMES

CONs

- 46% SHORTFALL IN WARTIME (2 MRC) RQMT FOR COMBAT VEHICLES
- STRONG LOBBY EFFORT IN BRAC 91 DEFEATED ARMY'S RECOMMENDATION TO CLOSE

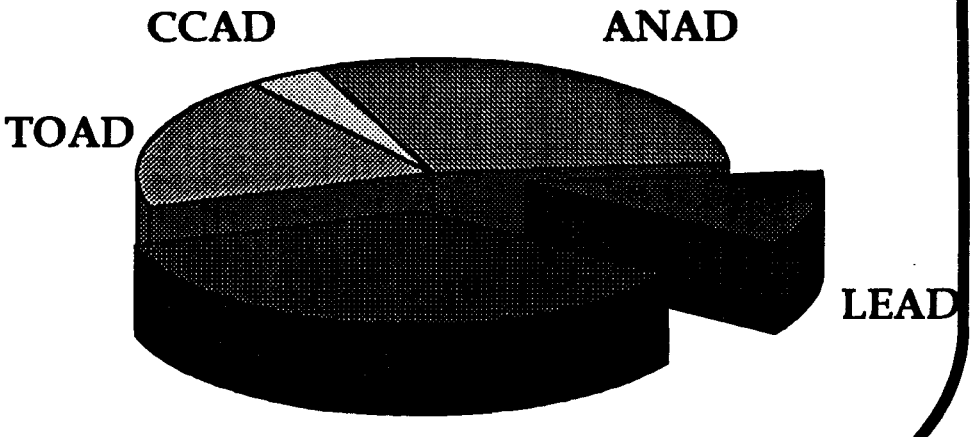
CAPACITY REDUCTION

CAPACITY



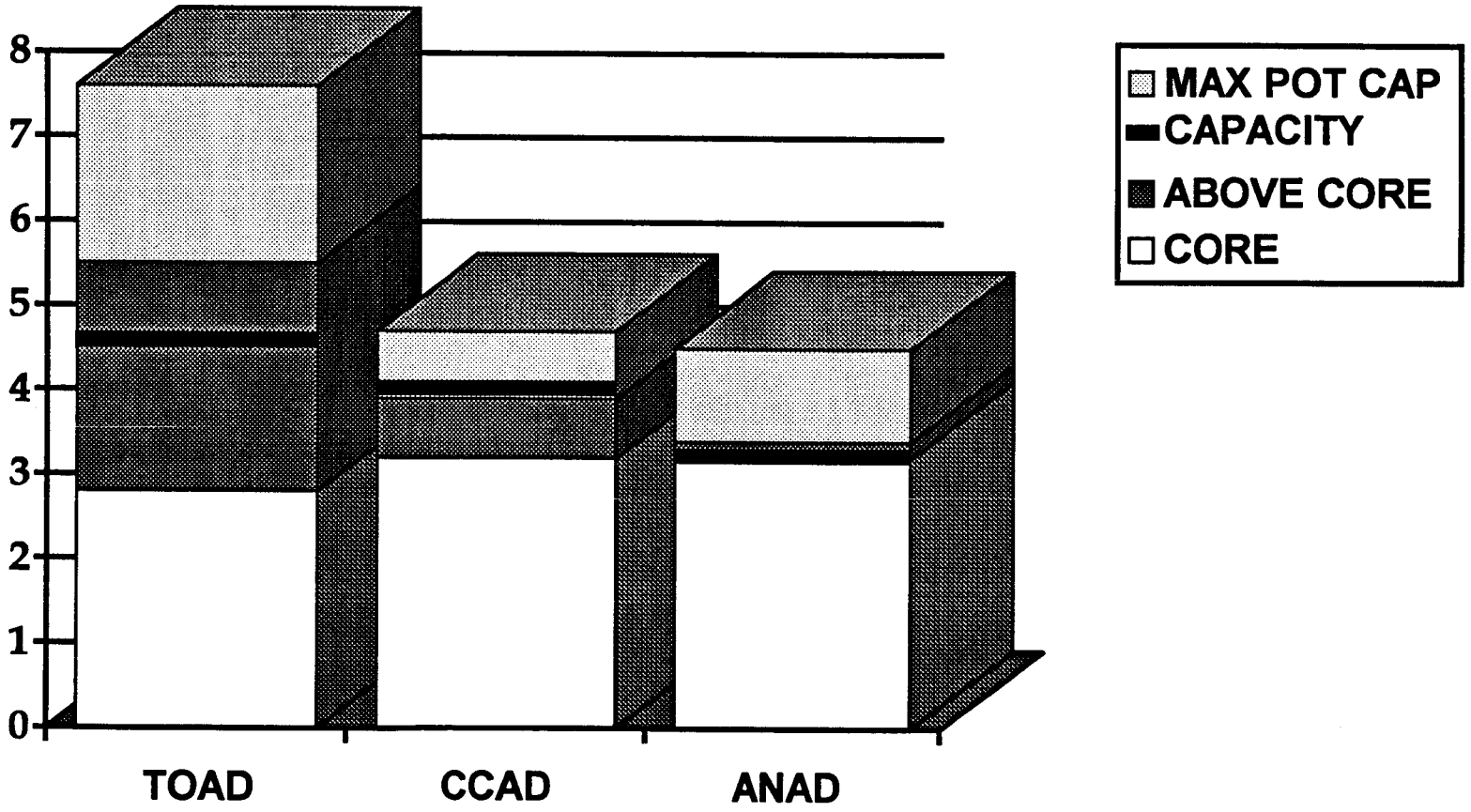
33% REDUCTION IN CAPACITY

EXCESS CAPACITY

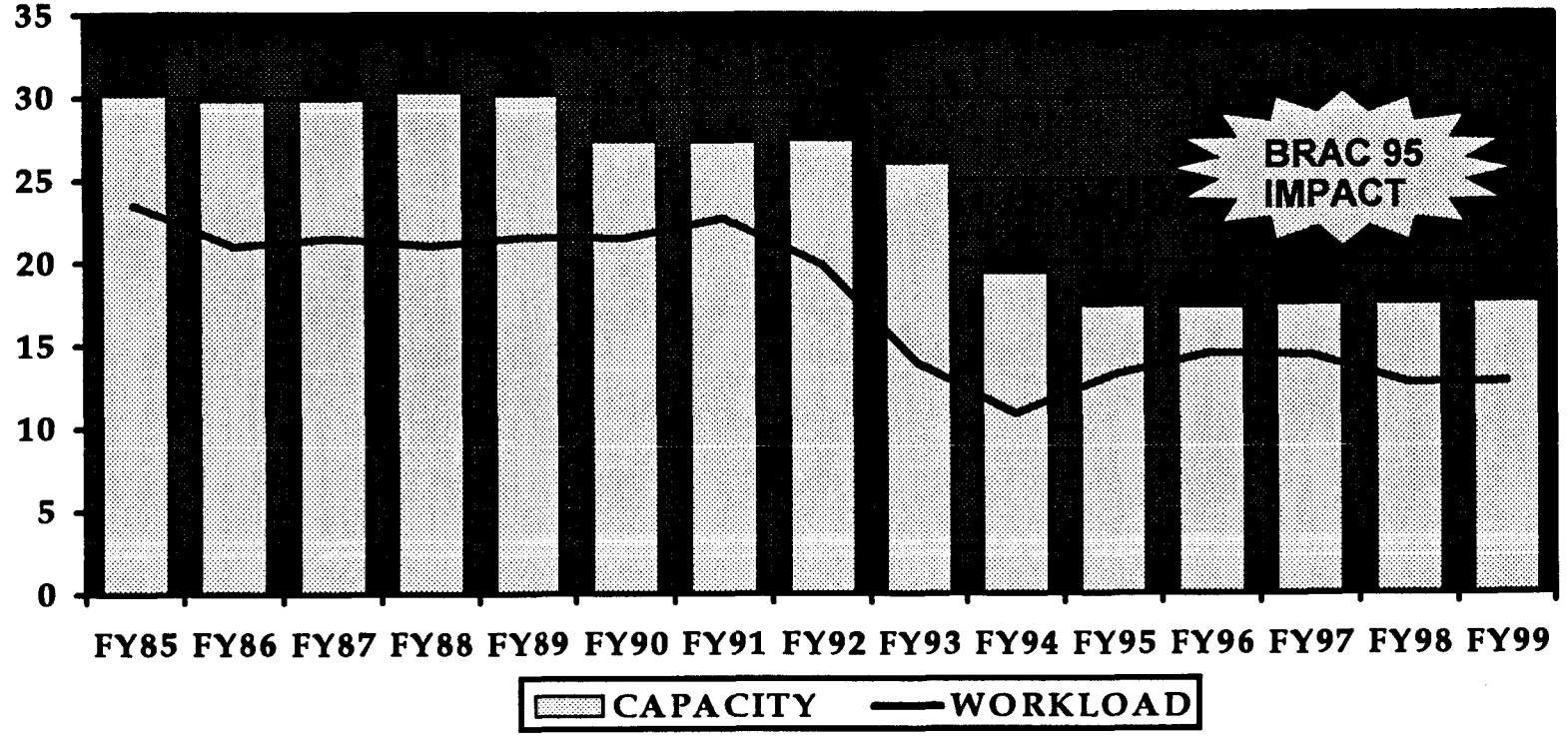


REDUCTION OF 47% IN EXCESS CAPACITY

ARMY DEPOT END STATE



U.S. ARMY DEPOTS CAPACITY AND WORKLOAD



NOTE: DLH IN MILLIONS

ARMY VERSUS COMMISSION ADD COMMUNICATIONS

	REALIGN LETTERKENNY	CLOSE TOBYHANNA
	ARMY	COMMISSION
I-TIME COST	$67 M	$154 M
STEADY STATE SAVINGS	$78 M	$33 M
NET PRESENT VALUE (20 YEARS)	$952 M	$226 M
CIVILIAN EMPLOYEE ELIMINATION	1267	535
MILITARY SPACES SAVED	20	34
RETURN ON INVESTMENT (YEARS)	IMMEDIATE	4
ROI YEAR	1998	2005

ARMY RECOMMENDATIONS:

- 43% CHEAPER IN 1 TIME COST
- 2 TIMES THE STEADY STATE SAVINGS
- 4 YEARS EARLIER RETURN ON INVESTMENT

ARMY VERSUS COMMISSION ADD TACTICAL MISSILES

	REALIGN LETTERKENNY	CLOSE - LEAD MOVE TO HILL AFB	REALIGN - LEAD MOVE TO HILL AFB
	ARMY	COMMISSION	COMMISSION
I-TIME COST	$67 M	$471 M	$220 M
STEADY STATE SAVINGS	$78 M	$91 M	$65 M
NET PRESENT VALUE (20 YEARS)	$952 M	$673 M	$220 M
CIVILIAN EMPLOYEE ELIMINATION	1267	1246	1018
MILITARY SPACES SAVED	20	23	23
RETURN ON INVESTMENT (YEARS)	IMMEDIATE	5	2
ROI YEAR	1998	2005	2002

ARMY RECOMMENDATIONS:

CHEAPER IN 1 TIME COST
FASTER STEADY STATE SAVINGS
GREATER NET PRESENT VALUE
EARLIER RETURN ON INVESTMENT

ARMY VERSUS COMMISSION ADD COMBAT VEHICLES

	CLOSE RED RIVER	REALIGN ANNISTON
	ARMY	COMMISSION
I-TIME COST	$59 M	$128 M
STEADY STATE SAVINGS	$123 M	$33 M
NET PRESENT VALUE (20 YEARS)	$1,497 M	$234 M
CIVILIAN EMPLOYEE ELIMINATION	1965	639
MILITARY SPACES SAVED	14	1
RETURN ON INVESTMENT (YEARS)	IMMEDIATE	4
ROI YEAR	1999	2005

ARMY RECOMMENDATIONS:

- 53 % CHEAPER IN 1 TIME COST
- 4 TIMES THE STEADY STATE SAVINGS
- 4 YEARS EARLIER RETURN ON INVESTMENT

Mfg turbine engines are ex annuator

SUMMARY

- ARMY RECOMMENDATIONS ARE SUPPORTED BY ARMY STATIONING STRATEGY
- ARMY RECOMMENDATIONS ARE SUPPORTABLE FROM AN OPERATIONAL ASPECT
- ARMY RECOMMENDATIONS ARE SUPPORTED BY JCSG-DM
- ARMY RECOMMENDATIONS ARE THE LEAST COSTLY AND MOST COST EFFECTIVE
-
- DoD IS STILL WILL REDUCE TOA BY $729 M AND REDUCING PERSONNEL (DORN MEMO)

BOTTOM LINE OF ARMY ALTERNATIVE

- CLOSES TWO DEPOTS
- MAINTAINS A DoD TACTICAL MISSILE DEPOT (TOBYHANNA)
- SAVES DoD AND THE ARMY $2,430 M OVER 20 YEARS

Document Separator

GAO

United States
General Accounting Office

National Security and
International Affairs Division

B-252463

February 25, 1993

The Honorable Vic Fazio
House of Representatives

The Department of Defense (DOD) is evaluating depot maintenance operations to determine how best to lower the overall cost of these functions while retaining essential operating capability. As you requested, we developed information on work load, productivity, quality, capacity and financial indicators at the Air Force's five Air Logistics Centers (ALC).

BACKGROUND

Depot maintenance is the repair of materiel requiring a major overhaul or the complete rebuilding of parts, assemblies, and end items. It includes manufacturing, modification, modernization, repair, testing and reclamation. The maintenance depots provide stocks of serviceable equipment by using a combination of special skills, equipment, and repair facilities that are not available at lower levels.

The Air Force has five major depot repair centers, each of which is an integral part of one of the five Air Logistics Centers. These include Ogden ALC, Hill Air Force Base, Utah; Oklahoma City ALC, Tinker Air Force Base, Oklahoma; Sacramento ALC, McClellan Air Force Base, California; San Antonio ALC, Kelly Air Force Base, Texas; and Warner Robins ALC, Robins Air Force Base, Georgia.[1] The ALC depots repair aircraft, missiles, engines, and communications-electronics equipment. The work varies in technical complexity, scope of work packages, and the types and skills of work required. Table 1 provides a brief overview of the five Air Logistics Centers and the type of repair work they

[1]The Air Force has two other depot maintenance activities, the Aerospace Guidance and Metrology Center, Newark Air Force Base, Ohio and the Aerospace Maintenance and Regeneration Center, Davis-Monthan Air Force Base, Ari

do. Appendix III provides additional details about repair work load assignments at each activity.

Table 1: Overview of Air Force Maintenance Depots

Air Logistics Center	Number of facilities	1992 Replacement Cost ($m) Facility/ Equipment	Type of work
Ogden	346[a]	$ 352/$408	Strategic missiles, aircraft, air munitions, photo/ reconnaissance, landing gear
Oklahoma City	51	1,100/396	Aircraft, engines, oxygen equipment
Sacramento	128	634/565	Space/ground communications-electronics, aircraft, hydraulics, instruments
San Antonio	66	424/685	Aircraft, engines, nuclear equipment
Warner Robins	79	225/850	Aircraft, avionics, propellers, life support systems

a Includes 45 buildings from Little Mountain and Utah Test Range

Source: U.S. Air Force.

RESULTS IN BRIEF

Because the ALCs have different missions, work loads, and facilities, Air Force officials believe comparisons of performance indicators are of limited value. Additionally, despite previous DOD and GAO studies recommending the development of comparable and reliable cost accounting,

performance measurement reporting, and capacity measurement, universally accepted standardized procedures have not yet been developed.

Recognizing the shortcomings in the collection of depot-level maintenance data and the need for more realistic and effective performance indicators, in 1990 DOD began to develop the Depot Maintenance Performance Measurement System. This system is intended to provide an improved set of performance indicators for depot-level maintenance activities. However, DOD does not yet have an approved system in place.

With these cautions in mind, this report presents performance indicators in five categories--work load, productivity, quality, capacity, and financial. Appendices I and II provide the results of our work.

-- The work load indicators we gathered were the quantity of items repaired and the number of direct labor hours expended to do the work. Of the two, using direct labor hours expended provides a better indication of work load size, because it takes into consideration the fact that not all repairs require the same amount of work.

-- DOD has had difficulty developing consistent and reliable data about the productivity of the ALCs' work forces or the productivity improvements that the work forces have achieved.

-- Air Force officials believe that while measures of quality are useful to individual shop managers, they are not particularly useful at the ALC or Headquarters Air Force Materiel Command level. They noted that data gathered on customers' complaints about quality of depot repair work is not a valid indicator of quality differentials among the centers.

-- Information regarding depot capacity shows that the Air Force depot maintenance system has large amounts of excess capacity. This problem is not unique to the Air Force. Appendix I includes a summary of ongoing DOD initiatives to address this situation.

-- Financial information presented in this report includes financial operating costs, the average cost of a direct labor hour, indirect costs as a percent of total costs, the cost per direct product standard hour, and year-end work load carryover.

We are continuing to review DOD efforts to downsize and improve the Department's management of depot maintenance systems and operations and will report our findings in this area to the Congress.

- - - -

SCOPE AND METHODOLOGY

We obtained data on the five categories of management indicators from the Office of the Secretary of Defense; Office of the Joint Chiefs of Staff; Headquarters, U.S. Air Force; Headquarters, Air Force Materiel Command; and the five ALCs. We did not verify the data or question the methodology used to compile it. Because of the 2-week period available to conduct our work, we did not determine the reasons for, or the significance of, changes or trends in data. On the basis of discussions with DOD officials and our review of documentation, we judgmentally selected work load, productivity, quality, capacity, and financial indicators on which to report. We conducted our work during February.

Because of the short time available to complete our work, we did not obtain written agency comments. However, officials from the Office of the Secretary of Defense and the Air Force reviewed a draft of the report for accuracy. They cautioned about comparing ALCs based on existing data, and noted that ongoing or planned efforts should result in the development of improved performance indicators for depot maintenance managers.

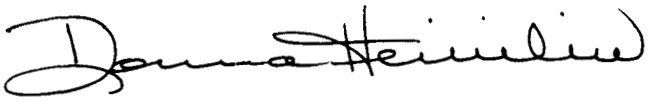
- - - -

We are sending copies of this letter to the Secretaries of Defense and Air Force, Commander of the Air Force Materiel Command, and interested congressional committees. Copies will be made available to others upon request.

This letter was prepared under the direction of Julia Denman, Project Director, who may be reached on (202) 275-8412 if you or your staff have any questions.

Other major contributors were Karl Gustafson, Larry Junek, Enemencio Sanchez, and Eddie Uyekawa.

Sincerely yours,



Donna Heivilin
Director
Defense Management and NASA Issues

INFORMATION ON AIR FORCE DEPOT MAINTENANCE OPERATIONS

Most equipment purchased and operated by the Department of Defense (DOD) requires maintenance throughout its useful life. The required maintenance may be as simple as a routine oil change or as complicated as extensive modifications to upgrade and extend the life of fielded systems. The most complex work involving overhauls; the complete rebuilding of parts, assemblies, or subassemblies for weapon systems and their components; and other jobs beyond the technical ability of individual military units is the responsibility of the military services' depot maintenance system.

For DOD aviation depot maintenance, the Navy has six depots, the Army has one, and the Air Force has five. The Air Force's depot capacity is an estimated 40 million direct labor hours (based on a single shift operation of 8 hours per day, 5 days a week) of a total DOD aviation capacity of 63 million direct labor hours.

The Air Force Materiel Command (AFMC) controls Air Force depot maintenance programs and facilities. AFMC's allocation of depot maintenance work load to individual Air Logistics Centers is influenced by its technology repair center and integrated weapon systems management concepts. Implemented in 1973, the technology repair center concept was intended to consolidate responsibility for the depot-level maintenance of reparable items along technological lines. For example, under this concept, the Ogden ALC is the technology repair center for missile components, landing gears, and photographic equipment, while Warner Robins ALC is responsible for airborne electronics, life support equipment, and propellers.

Under the integrated weapon systems management concept, one ALC coordinates the overall logistical support for a weapon system. For example, Sacramento ALC coordinates overall logistical support of the F-111 aircraft even though several ALCs may have a role in repairing various F-111 components. In most instances, the system manager of a weapon system also does major overhauls of the system.

In fiscal year 1992, the Air Force depot maintenance work load was valued at about $4.5 billion, of which about $3.3 billion was done in Air Force depot facilities and $1.2 billion was contracted out. About $241 million of the contracted work load was done through

"interservicing,"[1] with the remainder contracted to commercial firms.

Table I.1 shows the Air Force's projected depot maintenance program budget for 1993 through 1997. The contract dollars include work load to be accomplished through interservicing.

Table I.1. Projected Air Force Depot Maintenance Budget for Fiscal Years 1993-97

Dollars in millions (then year)

	Fiscal year				
	1993	1994	1995	1996	1997
Inhouse	$2,791.3	$2,801.4	$2,820.5	$2,732.4	$2,751.6
Contract	1,134.1	1,017.7	909.1	970.5	986.3
Total	$3,925.4	$3,819.1	$3,729.6	$3,702.9	$3,737.9

Source: Table 1-2, Defense Depot Maintenance Council Corporate Business Plan (fiscal years 1992-97).

According to AFMC, peacetime depot maintenance requirements for Air Force systems and equipment have declined for reasons such as the increased reliability and maintainability in many of the recently fielded systems and reductions in DOD's force structure and budget. While not yet well-defined or quantified, depot maintenance requirements for wartime and contingency operations have also declined. While the existence of excess capability and capacity has been widely discussed, limitations in the availability of good baseline data have inhibited the Department's ability to quantify the excesses, realign work load, and reduce excess capacity. In August 1992, the DOD Office of the Inspector General reported that the maintenance depots' capacity and utilization data was not accurate or complete and was therefore unreliable to base decisions on.

EXCESS CAPACITY IN DOD'S DEPOT SYSTEM

Since the early 1960s, the military services, the Office of the Secretary of Defense, the General Accounting Office, and various other agencies and commissions have undertaken numerous management

[1]Interservicing involves transferring work on comparable systems to the depot of another service to take advantage of economies of scale and to avoid the cost of maintaining dual capabilities in both services.

initiatives, studies, and audits that have resulted in recommendations for improving depot maintenance effectiveness and economies of operation. These include standardizing cost accounting and reporting systems, increasing interservicing and competition, and modernizing and centralizing depot maintenance operations in varying degrees.

Although DOD believes these efforts have resulted in improvements, excess capacity, unnecessary duplication, and inefficiencies still exist. Because changing world conditions have significantly reduced the projected future need for depot maintenance capability and capacity to support wartime requirements, there has been a renewed emphasis on the need to achieve greater economy of operations.

In September 1992, the Chairman of the Joint Chiefs of Staff chartered a special group, consisting of retired senior officers from each service and a senior representative from industry, to study the depot maintenance system and identify the best way to scale down excess capacity and reduce costs without degrading the ability to meet current or future peacetime and wartime needs. The group reached the following conclusions:

-- DOD has not substantially reduced excess capacity and has 25 to 50 percent more depot capacity than will be needed in the future.

-- Unnecessary duplication exists throughout the individual service depots, especially when viewed across service boundaries.

-- Closure of a significant number of the 29 military depots is necessary to reduce excess capacity and substantially reduce long-term costs.

-- DOD can most effectively close depots through its overall effort to close or consolidate excess military bases and facilities, a process overseen by the Base Realignment and Closure Commission.

However, the Air Force has chosen to downsize each of the ALC depots without closing depot facilities. Actions undertaken to reduce capacity include closing buildings, reducing space used in its maintenance facilities, and mothballing equipment.

Table I.2 shows depot repair capacity utilization indices at each ALC, reflecting planned capacity reductions from 1993 through 1997. The capacity index is the amount of repair work expressed in direct labor hours that a facility can effectively produce annually on a single shift, 40 hour per week basis.

Table I.2: Capacity Utilization Index

Direct labor hours in thousands

Air Logistics Center	Fiscal year				
	1993	1994	1995	1996	1997
Ogden	7,947	7,713	7,196	7,168	7,168
Oklahoma City	8,064	8,042	7,862	7,729	7,729
Sacramento	6,819	7,250	7,250	7,248	7,248
San Antonio	8,935	8,935	8,935	8,935	8,935
Warner Robins	7,693	7,486	7,486	7,486	7,486
Total	39,458	39,426	38,729	38,566	38,566

Source: Defense Depot Maintenance Council Corporate Business Plan, (fiscal years 1992-97).

However, DOD officials believe capacity indices are not reliable because the guidance used by the services to calculate capacity is subject to service interpretation and can be used to support a range of capacity. Moreover, officials from the Office of the Joint Chiefs of Staff told us that there has been little permanent reduction in capacity that could not be revitalized.

Using the actual work load performed by the depots in 1987 as a baseline, we found that the centers performed approximately 20 percent less work in 1992 than in 1987 and are projecting approximately 30 percent less work by 1997 (see table I.3).

Table I.3: Comparison of Direct Labor Hours

Hours in thousands

Air Logistics Center	Work load by fiscal year			Differences in work load 1987 to 1992 and 1997			
	1987	1992	1997	1992	Percent	1997	Percent
Ogden	8,370	6,644	6,072	1,726	21	2,298	27
Oklahoma City	10,361	6,999	6,424	3,362	32	3,937	38
Sacramento	7,686	6,180	6,016	1,506	20	1,670	22
San Antonio	9,566	7,696	5,279	1,870	20	4,287	45
Warner Robins	7,752	7,148	6,142	604	8	1,610	21
Totals	43,735	34,667	29,933	9,068	21	13,802	32

Sources: Air Force Materiel Command (fiscal year 1987-92) and Defense Depot Maintenance Council Corporate Business Plan (fiscal years 1992-97).

Air Force Materiel Command officials noted that comparisons of capacity data during this period are difficult considering the ongoing disposal of facilities and turn-in of equipment. They acknowledged that while potential excess capacity exists, not all can be readily reconstituted.

On December 3, 1992, the Deputy Secretary of Defense directed the Secretaries of the military departments to prepare integrated proposals for submission to the 1993 Base Closure and Realignment Commission. On January 15, 1993, the Secretaries responded that over 14.6 million direct labor hours are excess to aviation depot requirements--3 million in rotary wing and 11.6 million in fixed wing--and that four aviation depot equivalents could be closed. The Chairman of the Joint Chiefs of Staff noted in a January 22, 1993, memorandum that this response did not fully address cross-service consolidation opportunities for fixed-wing aviation--the area with the greatest additional savings potential. The Chairman also noted the importance of focusing DOD's future depot maintenance resources upon the most cost-effective mix of facilities and eliminating not only excess capacity but also unnecessary duplication.

The Defense Base Closure and Realignment Act of 1990 (P.L. 101-510) established a new process for DOD base closure and realignment actions within the United States. The act established an independent Defense Base Closure and Realignment Commission and specified procedures that the President, DOD, GAO, and the Commission must follow, in order for bases to be closed or

realigned. We are continuing to review the depot maintenance excess capacity issue as well as the Commission's process regarding potential closure and realignments of depot activities. We will report our findings and conclusions to Congress in these areas at a later date.

OTHER DATA PROBLEMS IN AIR FORCE DEPOT SYSTEM

An essential factor in managing a large industrial operation such as depot maintenance lies in the accuracy, timeliness, and availability of required data generated by current financial and information systems. During the last 2 years, we and the DOD Inspector General have reported on the need for managers of the Air Force depot maintenance operations to have better data on repair costs. For example, in January 1991, the DOD Inspector General reported that the Air Force depot maintenance operation did not have reliable estimates of how long workers should take to accomplish their work.[2] In February 1991, we reported that these managers also lacked reliable data on how much it actually costs to do a repair job.[3] We attributed this problem to the facts that (1) depot operations accounting systems do not accumulate actual direct labor costs for individual jobs but rather estimate costs by allocating costs that are accumulated at the shop level, (2) the ALCs do not have effective controls to ensure material costs are charged to the right job, and (3) depot accounting systems do not allocate overhead costs properly. As a result, we recently pointed out that Air Force depot maintenance managers cannot effectively manage this critical activity.[4] In another recent report we noted that the financial systems that support F-15 repairs and modifications at the Warner Robins ALC do not contain accurate cost information, primarily because of internal control weaknesses.[5] Furthermore, without accurate and complete information, the F-15 manager cannot adequately manage costs; ensure that the prices set for the F-15 repair work are accurate; ensure that repairs are

---

[2]Management of Labor Standards for Airframes at Aeronautical Depots (Report No. 91-039, Jan. 31, 1991).

[3]Management letter to the AFMC Commander on the results of our audit of depot maintenance industrial fund financial statements (GAO/AFMD-91-33ML, Feb. 26, 1991).

[4]Air Force Depot Maintenance: Improved Pricing and Financial Management Practices Needed (GAO/AFMD-93-5, Nov. 17, 1992).

[5]Financial Systems: Weaknesses Impede Initiatives to Reduce Air Force Operations and Support Costs (GAO/NSIAD-93-70, Dec. 1, 1992).

charged to operations and maintenance funds and modifications are charged to aircraft procurement funds, as required; or ensure that the F-15 program supports the underlying premise of the revolving fund, which is to break even. Both the DOD Inspector General and our reports have identified corrective actions that, if taken, should improve the quality of depot maintenance data.

DOD EFFORT TO DEVELOP IMPROVED PERFORMANCE INDICATORS

In 1990, the Joint Policy Coordinating Group on Depot Maintenance established the Joint Performance Measurement Group to implement and maintain the Defense Depot Maintenance Performance Measurement System. This system is intended to provide an improved set of performance indicators for depot level maintenance activities. Developing and implementing this system has been slow, with no approved system yet in place.

Seven key areas of performance--effectiveness, efficiency, quality, capacity utilization, productivity, cost performance, and innovation--were identified in 1990, with each key area having one or more measurement indicators. DOD officials noted that while data was collected to develop these indicators, some depots did not have complete baseline data and the consistency of data collected has been questionable. Furthermore, when the services pointed out that excessive resource demands were required to support quarterly data collection efforts, submissions were reduced to twice a year.

In January 1993 the Joint Performance Measurement Group proposed eight new performance measures for the Depot Maintenance Performance Measurement System. The proposed new measures are: due date performance, net operating results, throughput, inventory, operating expense, return on investment, flow day reduction, and unit cost. The new measures attempt to integrate two management concepts--the theory of constraints and competitive edges--with DOD performance measurement requirements relating to the Chief Financial Officers Act of 1990. Features of the proposed system are shown in table I.4.

Table I.4: Features of Proposed Depot Maintenance Performance Measurement System

Competitive edges	Theory of constraints	DOD performance measurement requirements
Price	Throughput	Efficiency
Quality	Inventory	Effectiveness
Due date performance	Operating expense	Unit cost
Lead time		Quality
Flexibility		Schedule
Innovation		Timeliness
		Customer satisfaction

Source: Air Force Materiel Command.

According to Air Force Materiel Command officials, the Services and the Defense Logistics Agency intend to continue to process using the original measures (less capacity) during 1993 and at the same time initiate a pilot program using the new measures beginning with the third quarter of fiscal year 1993. This would provide a comparison of the two sets of indicators. According to Office of the Secretary of Defense officials, new performance indicators have not yet been approved for the Depot Maintenance Performance Measurement System.

Regardless of the nature of the performance measurement system implemented, the resulting output will only be as accurate and informative as the quality and consistency of the data that is input. We will continue to monitor DOD's progress in implementing this critical performance measurement system and in attempting to improve the data that is input to this system. We believe that without the feedback afforded by the collection and analysis of improved performance indicators, it will be difficult for the Department to successfully achieve the required efficiencies and economies needed to cost-effectively manage its depot maintenance operations.

ALC PERFORMANCE INDICATORS

Our discussion of performance indicators is divided into five categories--work load, productivity, quality, capacity, and financial. Despite previous DOD and GAO studies calling for the development of comparable and reliable cost accounting, performance measurement reporting, and capacity measurement, universally accepted standardized procedures have not yet been developed.

WORK LOAD

AFMC's Depot Maintenance Annual Report uses both the quantity of items repaired and the number of direct labor hours expended to show the amount of work the ALCs accomplished. Of the two methods, using direct labor hours expended provides a better indication of work load size because it takes into consideration the fact that not all repairs require the same amount of work. For example, a work package for a B-52 aircraft could require more than 40,000 hours, while a work package for an A-10 could require only 2,000 to 3,000 hours. Each of these activities would represent one repaired unit.

Table II.1 shows the total hours of direct labor expended annually on depot maintenance. Aircraft, engines and reparable items are the three largest work load categories, but work is also accomplished on such things as ground/space communications-electronics equipment and missiles.

Table II.1: Direct Production Hours

Hours in thousands

Air Logistics Center	Fiscal year					
	1987	1988	1989	1990	1991	1992
Ogden	8,370	7,412	7,980	7,760	7,235	6,644
Oklahoma City	10,361	8,873	8,657	8,568	7,465	6,999
Sacramento	7,686	6,771	6,710	6,745	6,492	6,180
San Antonio	9,566	8,542	9,107	9,000	8,080	7,696
Warner Robins	7,752	7,037	7,837	8,051	6,738	7,148

Source: Military Bases: Information on Air Logistics Centers, GAO/NSIAD-90-287FS, Sept. 10, 1990 (fiscal years 1987-89); Air Force Logistics Command (AFLC) information digests (fiscal years 1990-91); and Air Logistics Centers (fiscal year 1992).

Table II.2 shows the number of aircraft on which maintenance work was completed. Aircraft maintenance work includes programmed depot maintenance, inspections, and modifications.

Table II.2: Aircraft Completed

Air Logistics Center	Fiscal year					
	1987	1988	1989	1990	1991	1992
Ogden	340	256	291	317	277	365
Oklahoma City	191	148	126	126	115	94
Sacramento	243	224	222	226	220	202
San Antonio	81	64	62	45	39	32
Warner Robins	158	125	189	173	141	205

Source: Same as table II.1.

Table II.3 shows the actual hours of direct labor expended annually on aircraft depot maintenance at each ALC.

Table II.3: Direct Labor Hours Expended on Aircraft Work

Hours in thousands

Air Logistics Center	Fiscal year					
	1987	1988	1989	1990	1991	1992
Ogden	3,209	2,805	3,268	3,153	2,847	2,595
Oklahoma City	3,022	2,770	2,669	2,946	2,514	2,491
Sacramento	2,522	2,326	2,241	2,041	1,739	1,844
San Antonio	1,984	1,807	1,980	2,138	1,839	1,932
Warner Robins	2,584	2,569	3,220	3,576	2,905	3,378

Source: Same as table II.1.

Table II.4 shows the number of engines repaired at the Oklahoma City and San Antonio ALCs. According to Air Force officials, this data should not be used to draw conclusions about the relative size of the two ALCs' work loads because it does not take into consideration the differences in types of engines repaired, the level of complexity, and the differing methodologies used to measure engine work completed. For example, San Antonio ALC

includes engines, modules, and gas turbine engines in its item count, and Oklahoma City ALC counts only complete engines. These two ALCs accounted for more than 99 percent of all Air Force aircraft engine repairs during this period.

Table II.4: Engine, Module, and Gas Turbine Repairs Completed

Air Logistics Center	Fiscal year					
	1987	1988	1989	1990	1991	1992
Oklahoma City	1,250	1,093	1,249	1,124	1,066	1,053
San Antonio	6,697	5,575	5,029	4,796	4,263	4,521

Source: Same as table II.1.

Table II.5 shows the actual hours of direct labor expended annually on the depot maintenance of engines, engine modules, and gas turbines.

Table II.5: Direct Labor Hours Used to Maintain Engines, Modules, and Gas Turbines

Hours in thousands

Air Logistics Center	Fiscal year					
	1987	1988	1989	1990	1991	1992
Oklahoma City	2,202	1,684	1,528	1,310	1,053	937
San Antonio	2,367	2,064	2,282	2,163	1,951	1,889

Source: Same as table II.1.

Table II.6 shows the number of reparable items on which work was completed. Reparable items are subsystems and components of weapon systems and equipment, such as avionics, life support equipment, and flight control instruments.

Table II.6: Reparable Items Completed

Items in thousands

Air Logistics Center	Fiscal year					
	1987	1988	1989	1990	1991	1992
Ogden	165	128	119	123	109	86
Oklahoma City	276	212	195	165	150	147
Sacramento	184	150	155	144	139	127
San Antonio	257	167	133	133	154	114
Warner Robins	206	158	159	153	220	113

Source: Same as table II.1.

Table II.7 shows the actual hours of direct labor expended annually on the depot maintenance of reparable items.

Table II.7: Direct Labor Hours Expended on Reparable Work

Hours in thousands

Air Logistics Center	Fiscal year					
	1987	1988	1989	1990	1991	1992
Ogden	3,332	2,741	2,728	2,736	2,630	2,154
Oklahoma City	4,692	3,959	4,042	3,805	3,313	2,909
Sacramento	3,289	2,711	2,726	2,761	2,760	2,227
San Antonio	4,232	3,852	4,041	4,018	3,753	3,409
Warner Robins	3,748	3,138	3,303	3,209	2,715	2,574

Source: Same as table II.1.

PRODUCTIVITY

DOD has had difficulty developing consistent and reliable data about the productivity of the ALCs' work forces or the productivity improvements that the work forces have achieved. As discussed below, three statistics that have been used as productivity measures are (1) direct labor efficiency, (2) output per paid man-day, and (3) annual productivity savings.

Table II.8 shows the ALCs' direct labor efficiency for fiscal years 1988 through 1992. This statistic is the ratio of production, measured in direct product standard hours, to the number of direct labor hours actually used to accomplish the work. A direct product standard hour is the time during which a specified amount of work of acceptable quality is or can be produced by qualified workers following the prescribed methods, working at a normal pace, and experiencing normal fatigue and delays.

Table II.8: Direct Labor Efficiency

Figures in percentages

Air Logistics Center	Fiscal year				
	1988	1989	1990	1991[a]	1992[b]
Ogden	93.9	92.8	91.1	90.3	90.4
Oklahoma City	95.2	95.7	92.2	95.7	91.9
Sacramento	93.1	97.4	90.6	93.9	94.3
San Antonio	95.7	94.8	90.9	93.5	92.3
Warner Robins	93.7	90.8	90.0	92.6	95.1

a According to Air Force officials, depot maintenance industrial fund personnel reductions cut end strength by almost 20 percent, causing extensive bumping of personnel into new positions, which affected labor efficiency rates at all centers in 1991.
b Air Force officials also noted that acceleration and displacement of work load to respond to priority requirements of Desert Shield/Desert Storm affected depot labor efficiency in 1991 and 1992.

Source: Same as table II.1.

Table II.9 shows the relationship between production, measured in direct product standard hours, and total payroll time (for both direct and labor overhead personnel), measured in paid staff-days. For example, an output per paid man-day value of 4 means that the work force accomplished 4 direct product standard hours of work for every 8 hours of payroll time. Because it takes into consideration not only the efficiency of the direct labor force but also the impact of overhead personnel, this statistic attempts to measure an ALC work force's overall productivity. However, Air Force Materiel Command officials stated that output per paid staff-day is no longer monitored closely because there were unintended results when this indicator was used as a key measure of productivity. For example, they noted when this indicator was emphasized by command leadership, some managers constrained important activities such as training in order to increase their production.

Table II.9: Output Per Paid Staff-Day

Air Logistics Center	Fiscal year					
	1987	1988	1989	1990	1991	1992
Ogden	3.96	3.86	3.79	3.71	3.80	3.89
Oklahoma City	3.94	3.84	3.78	3.72	3.95	3.88
Sacramento	4.11	3.84	3.97	3.61	4.01	3.99
San Antonio	4.20	3.87	3.96	3.67	3.81	3.73
Warner Robins	4.05	3.90	3.94	3.80	4.04	4.15

Source: Military Bases: Information on Air Logistics Centers, GAO/NSIAD-90-287FS, Sept. 10, 1990 (fiscal years 1987-89); Air Force Materiel Command (AFMC) and Air Logistics Centers.

In June 1990, a Deputy Secretary of Defense memorandum noted that DOD had substantial opportunities to increase the efficiency and reduce the cost of depot maintenance operations and still continue to meet crucial maintenance missions. The Secretaries of the military departments were directed to prepare plans to reduce depot maintenance costs for the period fiscal year 1991 through fiscal year 1995 by internal streamlining and reducing the size of their maintenance depot infrastructure. This initiative became the Defense Management Report Directive (DMRD) 908, and was later expanded to include fiscal years 1996 and 1997. Table II.10 shows Air Force savings expected to result from the implementation of this initiative in the Air Force Materiel Command from fiscal year 1991 through 1997. According to Air Force Materiel Command officials, these projections could not be broken out to delineate potential savings by ALC. However, projected command-wide savings were broken out in the following areas: near-term strategy, interservicing, competition, and capacity utilization.

Near-term savings were to be achieved through personnel reductions, installation closures, and streamlining, and other savings were to be achieved through process improvements by transferring some Air Force work load to other service depots and by repairing equipment from other services in Air Force depots. Both types of transfers were expected to achieve economies-of-scale savings by spreading overhead costs over a larger work load base. Savings expected to result from increased competition were projected to total $943.3 million over the 7-year period and were to involve public-private competition, public-public competition, and manufacturing competition. Capacity utilization savings of $1.7 billion were to

be achieved through depot downsizing--divesting or mothballing unneeded facilities and equipment.

Table II.10: Estimated Productivity Savings

Dollars in millions

Type savings	Fiscal year				
	1991	1992	1993	1994	1995
Near-term	$44.2	$ 68.0	$105.0	$109.0	$109.0
Interservicing	0	1.7	11.6	13.0	13.5
Competition	14.1	68.8	110.5	176.6	241.7
Capacity utilization	0.1	10.8	8.4	1.2	3.2
Total	$58.4	$149.3	$235.5	$299.8	$367.4

Table II.10 (continued)

Type savings	Fiscal year		
	1996	1997	Total
Near-term	$112.7	$116.5	$ 664.4
Interservicing	14.6	15.6	70.0
Competition	162.0	169.6	943.3
Capacity utilization	3.4	3.5	30.6
Total	$292.7	$305.2	$1,708.3

Source: Defense Depot Maintenance Council Corporate Business Plan, (fiscal years 1992-1997).

Although projected DMRD 908 savings were not broken out by center, AFMC officials provided a breakout of actual savings by ALC. Table II.11 shows the $206.6 million reported as DMRD 908 depot maintenance savings during fiscal years 1991 and 1992.

Table II.11: Depot Maintenance Savings By ALC

Dollars in millions

Air Logistics Center	Fiscal year	
	1991	1992
Ogden	$13.1	$33.3
Oklahoma City	20.0	63.3
Sacramento	14.2	22.6
San Antonio	7.3	18.3
Warner Robins	4.5	10.0
Total	$59.1	$147.5

Source: Air Force Materiel Command.

QUALITY

Air Force Materiel Command officials noted that they do not routinely collect and analyze customer complaints to measure quality. However, over a 3-year period they collected information representing the total complaints for all aircraft, engines, and reparable work items repaired in Air Force depots against the total standard repair hours. As shown in table II.12, this data provides a rate (standard hours divided into total complaints). Command officials noted that product mix and differences in the number of end items produced are key factors influencing the outcome and cautioned that center-to-center comparisons are not recommended.

Table II.12: Rates of Customer Complaints About Quality

Air Logistics Center	Fiscal year		
	1989	1990	1991
Ogden	.00022	.00022	.00019
Oklahoma City	.00030	.00028	.00024
Sacramento	.00063	.00070	.00066
San Antonio	.00008	.00007	.00010
Warner Robins	.00040	.00035	.00022

Source: Air Force Materiel Command.

CAPACITY

Some capacity measures have already been provided in tables I.2 and I.3. The age and replacement cost of the ALCs' maintenance facilities and equipment, the amount of money spent on military construction and plant equipment, and the size of the depot maintenance work force are a few other statistics used to provide an indication of the ALCs' capacity for doing work. This information is summarized in tables II.13 through II.16.

Table II.13 shows the value and size of maintenance facilities, which include hangers, machine shops, and test facilities. Cost figures are estimated replacement costs.

Table II.13: Maintenance Facilities (fiscal year 1992)

Dollars in millions

Air Logistics Center	Buildings/Area (square feet in millions)	Average age of facilities (years)	Replacement Cost
Ogden	346/3.8	34	$352
Oklahoma City	51/5.1	36	1100
Sacramento	128/3.5	28	634
San Antonio	66/4.0	34	424
Warner Robins	79/2.9	29	225

Source: U.S. Air Force.

Table II.14 shows the average age and estimated replacement cost of the industrial plant equipment used in depot maintenance at the ALCs. Equipment includes such machinery as spot welders, drilling machines, lathes, grinders, and special test equipment.

Table II.14: Maintenance Equipment (fiscal year 1992)

Dollars in millions

Air Logistics Center	Average age of equipment (years)	Replacement Cost
Ogden	12	$408
Oklahoma City	11	396
Sacramento	13	565
San Antonio	13	685
Warner Robins	7	850

Source: U.S. Air Force.

Table II.15 shows the amount that the ALCs' depot maintenance activities have spent on military construction and plant equipment from fiscal year 1984 through 1993. These numbers include equipment purchased over that period by the industrial fund and through appropriations.

Table II.15: Military Construction and Plant Equipment Expenditures

Dollars in thousands

Air Logistics Center	Military construction	Plant equipment
Ogden	$ 73,200	$140,668
Oklahoma City	129,100	172,251
Sacramento	77,300	137,394
San Antonio	81,600	192,103
Warner Robins	51,400	159,530

Source: Depot Maintenance Consolidation Study, Appendix F - Depot Commodity Matrix.

Table II.16 shows the total number of people paid from the depot maintenance industrial fund during fiscal years 1988 through 1992. These are work years not authorizations. The work force includes mechanics, machinists, welders, and electricians as well as managers and administrative staff, and includes overtime.

Table II.16: Size of the Depot Maintenance Work Force

Work years in thousands

Air Logistics Center	Fiscal year				
	1988	1989	1990	1991	1992
Ogden					
Civilian	6,765	7,014	7,143	6,452	5,835
Military	177	171	166	92	124
Total	6,942	7,186	7,309	6,644	5,958
Oklahoma City					
Civilian	8,360	8,375	8,158	6,888	6,251
Military	96	87	82	73	77
Total	8,456	8,462	8,239	6,962	6,328
Sacramento					
Civilian	6,344	6,368	6,488	5,864	5,519
Military	122	150	137	71	87
Total	6,465	6,517	6,624	5,936	5,606
San Antonio					
Civilian	8,031	8,356	8,512	7,547	7,198
Military	47	49	57	56	66
Total	8,078	8,405	8,569	7,603	7,264
Warner Robins					
Civilian	6,406	6,888	7,264	6,402	6,357
Military	77	80	56	56	61
Total	6,484	6,968	7,330	6,458	6,418

Note: Numbers may not total due to rounding.

Source: Air Logistics Centers.

FINANCIAL INFORMATION

The creation of the Air Force Industrial Fund in 1969 resulted in efforts to operate Air Force depots in a businesslike manner. Since the establishment of the Defense Business Operations Fund in October 1991, DOD has placed additional emphasis on the need to operate the Air Force depots in a businesslike manner. According to DOD officials, the primary goal of the Fund is to encourage support organizations to provide quality goods and services at the lowest cost. This goal is intended to be accomplished, in part, by (1) identifying the full cost of providing goods and services to customers, (2) measuring performance on the basis of cost goals,

and (3) providing better information on the support organizations' operations to decisionmakers in DOD and the Congress.

Some of the financial indicators that are used to monitor the ALCs' depot maintenance operations are (1) their total revenues, expenses, and net operating results; (2) labor costs; (3) indirect costs as a percentage of total costs; (4) the cost per direct product standard hour of work produced; and (5) the carryover of work on hand at the end of the fiscal year. This data is summarized in tables II.17 through II.21.

Table II.17 shows total revenues from depot maintenance performed by ALC personnel and related cost of goods sold (COGS) for each Center during fiscal years 1988 through 1992. The ALCs have a financial objective to set their sales prices at a level that will allow them to recover their operating costs and operate on a break even basis over the long term. Sales rates for specific fiscal years can contain built-in profits or losses. According to AFMC officials, this is done to dissipate previous years' profit or loss so the fund will break even over the long-term.

Table II.17: Financial Operating Results (fiscal years 1988-92)

Dollars in millions

Air Logistics Center	Fiscal year				
	1988	1989	1990	1991	1992
Ogden					
Revenues	$348.9	$349.5	$381.1	$401.2	$417.4
Cost of goods sold	376.7	368.0	421.4	383.9	395.0
Net gain (loss)	($ 27.8)	($ 18.6)	($ 40.3)	($ 17.2)	$ 22.4
Oklahoma City					
Revenues	$531.7	$530.1	$488.5	$491.6	$533.8
Cost of goods sold	555.0	567.6	564.5	504.3	479.2
Net gain (loss)	($ 23.2)	($ 37.5)	($ 76.0)	($ 12.6)	$ 54.5
Sacramento					
Revenues	$368.4	$366.8	$380.6	$410.4	$478.8
Cost of goods sold	380.6	376.6	378.8	406.6	412.1
Net gain (loss)	($ 12.2)	($ 9.8)	$ 1.7	$ 3.9	$ 66.6
San Antonio					
Revenues	$449.2	$478.3	$501.5	$558.6	$512.9
Cost of goods sold	483.1	529.0	519.9	517.4	507.4
Net gain (loss)	($ 33.9)	($ 50.7)	($ 18.4)	$ 41.2	$ 5.6
Warner Robins					
Revenues	$378.8	$395.0	$440.1	$456.4	$474.8
Cost of goods sold	389.1	413.7	472.8	455.4	438.2
Net gain (loss)	($ 10.3)	($ 18.7)	($ 32.7)	$ 1.1	$ 36.6

Note: May not total due to rounding.

Source: Air Force Materiel Command.

Table II.18 shows the average cost of a direct labor hour for fiscal years 1987 through 1992. According to AFMC officials, hourly rates include wages, leave, retirement, life insurance, health and other benefits. These officials also noted that cost of labor is a function of work load mix, technology, skill requirements, and locality pay differentials.

Table II.18: Average Cost of a Direct Labor Hour

Air Logistics Center	Fiscal year					
	1987	1988	1989	1990	1991	1992
Ogden	$16.27	$17.41	$17.22	$18.91	$20.41	$22.44
Oklahoma City	15.74	16.68	17.19	18.70	20.65	20.97
Sacramento	17.54	18.84	19.44	20.67	22.13	23.71
San Antonio	14.19	14.80	15.13	15.38	16.49	17.50
Warner Robins	17.65	18.22	18.08	19.29	21.59	20.77

Source: Air Force Materiel Command.

Table II.19 shows the ratio of indirect costs to total costs for fiscal years 1987 through 1992. According to DOD officials, the increasing percentage is largely a function of allocating fixed indirect costs over a declining work load.

Table II.19: Indirect Costs as a Percentage of Total Costs

Air Logistics Center	Fiscal year					
	1987	1988	1989	1990	1991	1992
Ogden	47.94	52.03	50.80	50.04	47.63	50.77
Oklahoma City	35.25	37.81	40.25	41.68	37.58	46.20
Sacramento	43.35	44.57	44.67	44.97	41.59	45.56
San Antonio	40.01	47.21	41.97	45.73	40.82	46.77
Warner Robins	41.99	45.83	44.21	44.26	43.16	48.89

Source: Air Force Materiel Command.

Table II.20 shows the relationship of total costs incurred to total direct product standard hours produced, with the costs segregated both by type (labor, material, and other) and level (direct, production overhead, and general and administrative overhead). Production overhead costs are those that apply to a specific organization, such as the labor costs associated with a shop supervisor, while general and administration overhead costs are those that apply to the depot as a whole, such as the labor costs associated with the security police force.

Table II.20: Cost Per Direct Product Standard Hours of Work Accomplished (fiscal year 1992)

Air Logistics Center	Ogden	Oklahoma City	Sacramento	San Antonio	Warner Robins
Direct	$31.55	$39.27	$37.64	$38.49	$33.38
Labor	(24.60)	(22.80)	(24.99)	(19.28)	(21.84)
Material	(6.34)	(16.32)	(11.38)	(19.13)	(11.34)
Other	(.61)	(.16)	(1.27)	(.08)	(.21)
Production overhead	$21.71	$22.40	$22.37	$26.14	$27.24
Labor	(13.49)	(13.07)	(13.54)	(14.49)	(12.77)
Material	(4.59)	(5.90)	(4.91)	(5.75)	(6.01)
Other	(3.64)	(3.42)	(3.91)	(5.90)	(8.46)
G & A[a] overhead	$10.81	$11.33	$ 9.13	$ 7.68	$ 4.70
Labor	(3.46)	(3.84)	(3.65)	(3.15)	(2.48)
Material	(.45)	(.25)	(.14)	(.24)	(.20)
Other	(6.90)	(7.23)	(5.34)	(4.30)	(2.02)
Total	$64.08	$72.99	$69.13	$72.32	$65.33
Labor	(41.55)	(39.71)	(42.18)	(36.92)	(37.09)
Material	(11.38)	(22.47)	(16.43)	(25.12)	(17.55)
Other	(11.15)	(10.81)	(10.52)	(10.28)	(10.69)

a General and administrative

Source: Air Logistics Centers.

Table II.21 shows the value of unfinished work that was carried over from one fiscal year to the next. Work that was deferred because of funding constraints is not included.

Table II.21: Year-end Carryover of Work (fiscal years 1988-92)

Dollars in millions

Air Logistics Center	Fiscal year				
	1988	1989	1990	1991[a]	1992[a]
Ogden	$77.7	$78.9	$93.8	$116.8	$168.5
Oklahoma City	66.3	62.9	79.8	129.4	162.6
Sacramento	86.9	120.3	161.4	199.6	292.6
San Antonio	72.8	95.0	93.6	157.6	205.4
Warner Robins	127.0	131.5	128.0	157.5	242.8

a Reflects the impact of Desert Shield/Desert Storm work load.

Source: Air Force Materiel Command.

ALC DEPOT MAINTENANCE REPAIR MISSIONS

OGDEN ALC

Ogden ALC is the source of repair for the C-130 and F-16 aircraft and large missiles (Minuteman, Peacekeeper). It is the technology repair center for weapons, air munitions, missile components, ram air turbines, landing gears, photographic equipment, training and simulation equipment, and instruments (all navigation except inertial systems; electrical/mechanical; and pressure, temperature, and humidity measuring). Interservice work load transfer decisions affecting Ogden ALC include the transfer of Navy C-130 aircraft to Ogden ALC in fiscal year 1993, Navy C-130 and F-14 landing gears to Ogden ALC in fiscal year 1992, Air Force F-4 aircraft to the Navy in fiscal year 1993, Air Force small arms to the Army in fiscal year 1992, Air Force Sidewinder missiles to the Army in fiscal year 1993, and Air Force Maverick missiles to the Army in fiscal year 1996. Ogden ALC's fiscal 1992 competition candidates were Minuteman III nuclear hardness, Minuteman III software, landing gear work loads, and F-16 APG-68 Radars. Work load competitions for fiscal year 1993 include F-16 Block 40 modifications, wheels, and the F-16 APG-66 radars.

OKLAHOMA CITY ALC

Oklahoma City ALC is the source of repair for the B-1B, B-2, B-52H, C-135, and E-3 aircraft. Also repaired there are the TF-30, TF-33, TF-41, J-57, F-103, F-107, F-108, F-110, F-112, and F-118 aircraft engines. Oklahoma City ALC is the technology repair center for hydraulics/pneudraulics (fluid-driven transmissions/constant speed drives, air driven accessories - except ram air turbines), oxygen components, and instruments (automatic flight control systems, engine). Interservice work load transfers affecting Oklahoma City ALC include the transfer of the J-79 engine work load to the Navy in fiscal year 1992, and transfer of all TF-30 engine and F-110 engine work loads from the Navy to Oklahoma City ALC in fiscal year 1993. The Air Force blade and vane work load will be consolidated at Oklahoma City ALC. The Oklahoma City ALC fiscal year 1992 competition candidates were the C-18 programmed depot maintenance and constant speed drives. Fiscal year 1993 repair work load competitions include the F-15, B-52, and the E-3 constant speed drive; the F-4C starter; air turbines and motors; the E-3 programmed depot maintenance; and the T-38 gyros.

SAN ANTONIO ALC

San Antonio ALC is the source of repair for the T-38, B-52H, C-5, and C-17 aircraft as well as gas turbine engine/auxiliary power units, T-56, TF-39, F-100, F-117, and F-119 aircraft engines. San Antonio also has the C-5 structural modification. It is the technology repair center for electronic support equipment, electro/mechanical support equipment, nuclear components, and instruments (engine). The work load at San Antonio ALC is decreasing due to force structure and weapon system reductions. Final resolution of B-52 work load assignments (proposed consolidation at Oklahoma City ALC) is pending final force structure decision. The interservice work load transfer affecting San Antonio ALC is the transfer of the gas turbine engine from the Army in fiscal year. San Antonio ALC's fiscal year 1992 competition candidates were the test equipment and generators and C-5 structural modification work loads. Fiscal year 1993 work load competitions include the T-56 engines and F-100 unified fuel control.

SACRAMENTO ALC

Sacramento ALC is the source of repair for the A-10, F-15, F-22, EF/F/FB-111, KC-135, and T-37. It is also the technology repair center for electric components, ground-electronics, hydraulics/pneudraulics (fluid-driven accessories except transmissions/constant speed drives), instruments (flight control), and shelters. Projected force structure and weapon systems drawdowns will affect work load. Sacramento ALC is not participating in the fiscal year 1992 or 1993 public private competition because it is competing in the public-public competition for the Sacramento Army Depot's work load.

WARNER ROBINS ALC

Warner Robins ALC is the source of repair for the C-130, C-141, and F-15 aircraft, and also has the C-141 structural modification. It is the technology repair center for airborne electronics, life support equipment, propellers, and instruments (gyroscopes except displacement). The Warner Robins ALC fiscal year 1992 competition candidate was the C-141 structural modification. Fiscal year 1993 candidates are the ALQ-131 II Reliability and Maintainability Pods, the APG Radar, the transponder Bundle, the ALQ-155, and the C-130 propellers.

(709003)

Document Separator

FAX

Date *April 3, 1995*

Number of pages including cover sheet 2

TO: *General Blume*

Phone

Fax Phone

CC:

FROM: *Frank Cirillo/Air Force Team Leader*

Defense Base Closure and Realignment Commission

1700 North Moore Street, Ste. 1425

Arlington, VA 22209

Phone *703-696-0504*

Fax Phone *703-696-0550*

REMARKS: ☐ *Urgent* ☒ *For your review* ☐ *Reply ASAP* ☐ *Please Comment*

General Blume,

Attached please find a proposed agenda for the meeting on the depots scheduled for the 10th.

Frank Cirillo

AGENDA

Meeting Purpose:

We are interested in discussing depot requirements, assets, milcon, personnel, workload and migration of workload under the various options considered by the Air Force (downsize, dual closure, Joint Cross Service Closures). We want to start with a baseline for the 1995 base closure round and determine the impact the 1995 recommendations and various closure options have on the baseline numbers.

The following bullets will be helpful in describing our interests but are not necessarily all inclusive.

Review findings of recent site surveys

- identify square footage to be mothballed and demolished
- identify building numbers to be mothballed and demolished
- identify capacity by commodity which will be reduced as a result of mothballing and demolition of depot space
- address savings and implementation costs which will result from mothballing and demolition of depot space

Outline Milcon requirements for downsize and dual closure COBRAs

- specify need for renovation and construction

Outline rationale for production transition costs associated with dual closure option

Explain personnel adjustment assumptions behind downsize recommendation , dual closure option and DM-2 option COBRAs

- show baseline personnel numbers (total installation, broken out by function)
- show adjustments in terms of numbers of personnel
- show adjustments in terms of type of workload (by hours and/or numbers of personnel)

Outline workload migrations by commodity for :

- Downsize recommendation
- dual closure option
- DM-2 option (Joint Cross Service Group option)

Discuss the AFMC-21 Study

Discuss the TRC Study

THE DEFENSE BASE CLOSURE AND REALIGNMENT COMMISSION
1700 NORTH MOORE STREET SUITE 1425
ARLINGTON, VA 22209
703-696-0504

1.8"

6 TABS over

March 30, 1995

Colonel James H. Allen, USA
Commander, U.S. Army Garrison
Fort Pickett
Blackstone, VA 23824-5000

Dear Colonel Allen:

I want to thank you for all of your assistance during my recent visit to Fort Pickett. The briefings and discussions with you, your staff, and community and congressional officials provided us with a great deal of valuable information about the training conducted at Fort Pickett. This information will be very helpful to the Commission as we carry out our review of the recommendations of the Secretary of Defense in the months ahead.

Please extend my appreciation to the members of your staff for their assistance. The briefings conducted by Mr. Asher Weaver during the driving tour were most informative. I would also like to thank Mr. Jim Caul, Mrs. Kitty Conley, and Command Sergeant Major Steven M. Foust for their efforts in planning and coordinating the base visit.

Sincerely,

Rebecca G. Cox
Commissioner

THANK You Example

Document Separator

INTERNATIONAL FEDERATION OF
PROFESSIONAL AND TECHNICAL ENGINEERS
LOCAL #220, P.O. BOX 60484, SACRAMENTO, CALIF. 95860

28 April 1995

The Honorable Alan Dixon, Chairman
Defense Base Closure and Realignment Commission
Suite 1425
1700 N. Moore Street
Arlington, Virginia 22209

Dear Chairman Dixon,

My bargaining unit represents employees of the precision flight instrument and display workloads in the Directorate of Commodities, at Mc Clellan, AFB. Our membership and executive board express concern about the integrity of the recent study conducted by Oklahoma City, AFB, TRC representatives on 31 March 1995.

Approximately, 1 March 1995, the TRC teams study concluded the precision flight instrument and display workloads were consolidated and realigned to McClellan, AFB, and Warner Robbins, AFB. The recommendation was based on data collected and analyzed from all five (5) ALC Centers.

On 20 April 1995, I was provided information that reflect irregularities in data collection, yield rates, goals, public to public competition and ALC to ALC competition. Based on the erroneous data the precision flight instrument and display workloads were awarded to Oklahoma City, AFB and Warner Robbins, AFB. I have enclosed this information for your review.

It is the union position to support the agency objective to down size the ALC Centers, equivalent to two base closures. However, the union request that you rescind the Oklahoma City, AFB, TRC study recommendation dated 31 March 1995 and accept the 1 March 1995 TRC study instead. The 1 March 1995 TRC study had a consensus of all the ALC team players.

Your cooperation and help regarding the matter will be appreciated. My telephone number is 916-643-5899. If you need additional information.

Sincerely,

Arthur T. Valdez

Arthur T. Valdez
President

1 of 23

AFMC Change in Instruments/Displays

The main issue was the "savings" achieved by using the OC-ALC revised yield of 1615 hours per PE. Secondarily, the COBRA analysis used all OC-ALC equipment as needing to be moved and recertified, when in reality, SM-ALC would only need a small portion of the equipment because of underutilized, on-hand equipment. Thus the COBRA was grossly inflated towards OC-ALC.

The AFMC Senior Business Planner's option, as approved by Gen Yates, shows that the change would require addtional square footage and capacity over the OSD BRAC recommendation. Only the PEs shows a saving and that number is not validated by data or common sense.

The OC-ALC data continuously changes:

	PEs	Yield
8 Dec 94	141	1982
1 Mar 95	181	1459
30 Mar 95	164	1615

17 Nov 94, the OC-ALC/LIP chief certified that LIP had 141 authorized and 146 assigned.

23 Feb 95, OC-ALC/FMP certified that the historical G004C for TIPFE (a single RCC, but the largest) had 127 PEs, while the offical spread sheet had 130 PEs. The workload review yield for FY 96 was 1455, FY-97 was 1461 and FY98 was 1461. A supplemental sheet stated that the yields ranged from 1844 to 1675. This would indicated very high use of overtime, but the tables in the studies were without overtime. High yield, therefore, must be due to high labor standards.

G004C documents provided by OC-ALC/FMP to backup their claim of 1615 yield, shows the RCC effectiveness rates of 129%. This would indicate grossly inflated labor standards.

The chart showing the PE changes with each iteration of the BRAC recommendations shows the growth in OC-ALC and WR-ALC PEs (i.e., decreasing losses under each option); SA-ALC remining relatively constant; while OO-ALC and SM-ALC taking more and more of the cuts. The final impact on total DMBA manpower as a result of the latest recommendation is indicated by the per cent at the top of the chart - SM-ALC taking the largest hits at 11.2%.

The option (OO workload to OC and SM workload to WR) wasn't even one of the options studied by the Instrument/Displays team.

The stated goal of the studies was to consolidate TRC to single sites in order to "purify" the TRC concept and to position AFMC in the post-BRAC environment. The selected

option only consolidates the TRC to two sites, instead of the orignal single site as OSD recommendated.

Yield comparisons between the ALCs is poor, at best, and only if truely used for identical workload and shop arrangements. That is not the case. DOD memorandum of 4 Dec 94 states that the depot lack the data to perform comparative aalysis on cost basis for competition and; threfore, is prohibitted from public to public competitions. The latest instrument/display recommendation is a direct result of public to public competition.

AFMC has had a policy of not permitting ALCs to compete against eachother, but this is what was approved. The results of an ALC to ALC competition on unauditable cost data.

Instrument and Display TRC Process Assessment Data Collection Summary

	Workload FY95 DPSH	Workload FY96 DPSH	Workload FY97 DPSH	Workload FY98 DPSH	PE's FY95 Authorized	PE'S FY98 Authorized	PE's FY95/FY98 Overhead
OC-ALC	279,453	282,555	262,149	257,436	141	161	33
OO-ALC	181,149	292,550	215,530	217,742	82	98	23
SM-ALC	276,034	292,978	274,435	270,042	190	181	30
WR-ALC	175,585	162,621	186,196	172,467	149	146	20
Totals:	912,221	940,704	938,360	917,687	562	586	106

	Utilized Facility	Readily Avail. Vacant Facility	Existing Total Facility	Facility Consolidation Requirements	Future Facility Restructured Available Space	Total Equipment Acquisition	Equipment Depreciation Cost
OC-ALC	130,000	71,900	201,900	52,000	78,000	$71,714,580	$20,913,780
OO-ALC	28,538	37,096	65,634	28,538	95,518	$14,944,226	$6,365,795
SM-ALC	41,496	37,400	78,896	41,496	33,400	$45,439,187	$17,201,998
WR-ALC	53,277	68,429	121,706	33,541	59,929	$32,759,337	$7,743,803
Totals:	253,311	214,825	468,136	155,575	266,847	$164,857,330	$52,225,376

	Future Approved Mil-Con	Equipment Recalibration Costs	First Article/ Requalification Costs	**One-Time Outgoing Installation Csts	Software Change Costs	Asset Inventory Value	Workload On-Contract
OC-ALC		$219,955	$718,125	$80,475	$0	*	
OO-ALC		$61,875	$144,774	$508,000	$0	$79,332,801	
SM-ALC	$381,000	$14,240	$138,240	$0	$0	$50,235,194	
WR-ALC		$323,340	$472,239	$1,253,800	$128,688	$178,638,896	
Totals:	$381,000	$619,410	$1,473,378	$1,842,275	$128,688	$308,206,891	$13,400,000

* Identifies values unavailable at time of data report.
** Cost to install workload to another center

8 DEC 94

	Workload 94 NLA DPSH	Workload FY95 DPSH	Workload FY96 DPSH	Workload FY97 DPSH	Workload FY98 DPSH	FY94 Yield Rates	FY96 Calculated PE's without OT	FY96 Authorized PE's
OC-ALC	206,769	279,453	278,751	258,345	253,436	1,459.34	181	181
OO-ALC	162,659	181,149	212,637	225,212	227,470	1,430.49	141	115
SM-ALC	300,880	275,034	262,978	244,435	240,042	1,471.18	170	194
WR-ALC	197,518	159,443	151,445	175,021	161,292	1,513.00	95	149
Totals	867,826	896,079	905,812	903,013	882,240	1,468.50	588	639

	FY95/FY98 Overhead PEs	Utilized Facility	Readily Avail. Vacant Facility	Existing Total Facility	Workload Facility Requirements	Additional Facility After Restructure	Total Equipment Acquisition	Equipment Depreciation Cost
OC-ALC	30	130,000	71,900	201,900	52,000	58,000	$71,714,580	$20,913,780
OO-ALC	17	28,538	37,096	65,634	28,538	95,518	$19,201,895	$6,815,795
SM-ALC	30	41,496	163461 ***	204,957	41,496	33,400	$45,439,187	$17,201,998
WR-ALC	20	53,277	68,429	121,706	33,541	59,423	$26,550,389	$7,743,803
Totals*	97	253,311	340,886	594,197	155,575	246,341	$162,906,051	$52,675,376

	IPS Surge Hours	Equipment Transportation Costs	Equipment Recalibration Costs	First Article/ Requalification Costs	One-Time * Outgoing Installation Csts	Required ** MI-Con with Workload Moved	Asset Inventory Value	Workload On-Contract
OC-ALC	23,229	483,488	$219,955	$718,125	$80,475	$0	$66,546,632	
OO-ALC	17,720	168,709	$61,875	$168,903	$152,617	$508,000	$87,375,141	
SM-ALC	21,915	36,047	$14,240	$138,240	$0	$0	$50,235,194	
WR-ALC	12,620	464,447	$323,340	$472,239	$6,062,222	$1,253,800	$178,638,896	
Totals:	75,484	1,152,691	$619,410	$1,497,507	$6,295,314	$1,761,800	$382,795,863	$13,400,000

* Additional Costs to be picked up by gaining site to account for Purchase of New Equipment, TPS Development, and Software Change Costs if workload is moved. ($5.9M is related to 900 Hours of Non-Gyro Workload)

** Costs related to OO-ALC/Compass Workload and WR-ALC/Gyro Workload

*** SM-ALC 126,061 square foot difference between Dec 94 and Feb 95 Studies is due to the addition of four separate buildings. Bringing the SM-ALC total buildings to 7.

NOTES: F-111 Workload Hours removed from study. (OC FY96 & FY97: 3804, FY98:4000) (SM-ALC FY96, FY97, FY98: 30000)
(WR-ALC Gyro FY96, FY97, & FY98: 11176)
Workload excludes SM-ALC $5M Army Contract of 7197 Hours/Year

Group 1: Complete Instrumentation and Display TRC Workload (One Site Scenarios)

	OC-ALC	OO-ALC	SM-ALC	WR-ALC	NPV in 2015	1-Time Cost	ROI Year	Total Positions Realigned	Total Positions Eliminated
1	Gains All	TO OC-ALC	TO OC-ALC	TO OC-ALC	$11,165,000	$28,233,000	39	444	28
2	TO OO-ALC	Gains All	TO OC-ALC	TO OO-ALC	$17,189,000	$31,307,000	21	508	21
3	TO SM-ALC	TO SM-ALC	Gains All	TO SM-ALC	$10,208,000	$31,903,000	32	455	34
4	TO WR-ALC	TO WR-ALC	TO WR-ALC	Gains All	($9,558,000)	$26,751,000	13	518	54

Group 2: Complete Instrumentation and Display TRC Workload (Two Site Scenarios)

	OC-ALC	OO-ALC	SM-ALC	WR-ALC	NPV in 2015	1-Time Cost	ROI Year	Total Positions Realigned	Total Positions Eliminated
5	Gains SM-ALC	TO WR-ALC	TO OC-ALC	Gains OO-ALC	($2,946,000)	$15,653,000	15	330	29
6	TO WR-ALC	Gains SM-ALC	TO OO-ALC	Gains OC-ALC	($3,198,000)	$15,223,000	15	387	27
7	TO WR-ALC	TO SM-ALC	Gains OO-ALC	Gains OC-ALC	($7,059,000)	$14,567,000	11	339	33
8	Gains SM-ALC	Gains WR-ALC	TO OC-ALC	TO OO-ALC	$13,300,000	$21,527,000	100+	302	13
9	Gains OO-ALC	TO OC-ALC	Gains WR-ALC	TO SM-ALC	$10,317,000	$20,558,000	60	256	17
10	TO OO-ALC	Gains OC-ALC	Gains WR-ALC	TO SM-ALC	$13,539,000	$23,521,000	100+	314	15

Group 3: Instrumentation and Display TRC Workload (Excluding Workload Related to Costs Associated with WR-ALC Co-utilized Equipment of 900 Hours) (One Site Scenarios)

	OC-ALC	OO-ALC	SM-ALC	WR-ALC	NPV in 2015	1-Time Cost	ROI Year	Total Positions Realigned	Total Positions Eliminated
11	Gains All	TO OC-ALC	TO OC-ALC	TO OC-ALC	$5,893,000	$22,234,000	29	444	28
12	TO OO-ALC	Gains All	TO OO-ALC	TO OO-ALC	$10,413,000	$24,438,000	44	508	21
13	TO SM-ALC	TO SM-ALC	Gains All	TO SM-ALC	$4,337,000	$25,992,000	24	455	34
14	TO WR-ALC	TO WR-ALC	TO WR-ALC	Gains All	($9,558,000)	$26,751,000	13	518	54

Group 4: Instrumentation and Display TRC Workload (Excluding OO-ALC Compass Workload (4 PE's) and WR-ALC Gyro Workload and Workload Related to Costs Associated with WR-ALC Co-utilized Equipment of 900 Hours) (Three Site Scenarios)

	OC-ALC	OO-ALC	SM-ALC	WR-ALC	NPV in 2015	1-Time Cost	ROI Year	Total Positions Realigned	Total Positions Eliminated
14	Gains All	TO WR-ALC	TO OC-ALC	TO OC-ALC	$1,167,000	$16,450,000	20	367	25
15	TO OO-ALC	Gains All	TO OO-ALC	TO OO-ALC	$5,611,000	$17,767,000	32	433	18
16	TO SM-ALC	TO SM-ALC	Gains All	TO SM-ALC	($141,000)	$18,994,000	18	377	30

	Workload 94 HLA DPSH	Workload FY95 DPSH	Workload FY96 DPSH	Workload FY97 DPSH	Workload FY98 DPSH	FY94 Yield Rates	FY96 Calculated PE's without OT	FY95 Authorized PE's
OC-ALC	206,769	279,453	278,751	258,345	253,436	1,615.00	164	151
OO-ALC	162,659	181,149	212,837	225,212	227,470	1,430.49	141	115
SM-ALC	300,680	276,034	262,976	244,435	240,042	1,471.19	170	194
WR-ALC	197,516	168,443	151,446	175,021	161,292	1,513.00	95	149
Totals:	867,626	896,079	905,812	903,013	882,240	1,507.42	570	609

	FY95/FY98 Overhead PE's	Utilized Facility	Readily Avail. Vacant Facility	Existing Total Facility	Workload Facility Requirements	Additional Facility After Restructure	Total Equipment Acquisition	Equipment Depreciation Cost
OC-ALC	30	130,000	71,900	201,900	52,000	58,000	$71,714,580	$20,913,780
OO-ALC	17	28,538	37,096	65,634	28,538	95,518	$19,201,695	$6,815,795
SM-ALC	30	41,496	163461 ***	204,957	41,496	33,400	$45,439,187	$17,201,998
WR-ALC	20	53,277	68,429	121,706	33,541	59,423	$26,550,389	$7,743,803
Totals:	97	253,311	340,886	594,197	155,575	246,341	$162,906,051	$52,675,376

	IPS Surge Hours	Equipment Transportation Costs	Equipment Recalibration Costs	First Article/ Requalification Costs	One-Time * Outgoing Installation Csts	Required ** Mil-Con with Workload Moved	Asset Inventory Value	Workload On-Contract
OC-ALC	23,229	483,483	$219,955	$718,125	$80,475	$0	$66,546,632	
OO-ALC	17,720	168,709	$61,875	$168,903	$152,617	$508,000	$87,375,141	
SM-ALC	21,915	36,047	$14,240	$138,240	$0	$0	$50,235,194	
WR-ALC	12,620	464,447	$323,340	$472,239	$6,062,222	$1,253,800	$178,638,896	
Totals:	75,484	1,152,691	$619,410	$1,497,507	$6,295,314	$1,761,800	$382,795,863	$13,400,000

* Additional Costs to be picked up by gaining site to account for Purchase of New Equipment TPS Development, and Software Change Costs if workload is moved. ($5.9M is related to 900 Hours of Non-Gyro Workload)

** Costs related to OO-ALC/Compass Workload and WR-ALC/Gyro Workload

*** SM-ALC 126,061 square foot difference between Dec 94 and Feb 95 Studies is due to the addition of four separate buildings. Bringing the SM-ALC total buildings to 7.

NOTES: F-111 Workload Hours removed from study. (OC FY96 & FY97: 3804, FY98:4000) (SM-ALC FY96, FY97, FY98: 30000) (WR-ALC Gyro FY96, FY97, & FY98: 11176)
Workload excludes SM-ALC $5M Army Contract of 7197 Hours/Year

Group 1: Complete Instrumentation and Display TRC Workload (One Site Scenarios)

	OC-ALC	OO-ALC	SM-ALC	WR-ALC	NPV in 2015	1-Time Cost	ROI Year	Total Positions Realigned	Total Positions Eliminated
1	Gains All	TO OC-ALC	TO OC-ALC	TO OC-ALC	$51,285,000	$30,998,000	5	473	129
2	TO OO-ALC	Gains All	TO OO-ALC	TO OO-ALC	$19,535,000	$32,250,000	12	512	70
3	TO SM-ALC	TO SM-ALC	Gains All	TO SM-ALC	$20,669,000	$31,903,000	10	470	84
4	TO WR-ALC	TO WR-ALC	TO WR-ALC	Gains All	$36,389,000	$29,149,000	7	555	99

Group 2: Complete Instrumentation and Display TRC Workload (Two Site Scenarios)

	OC-ALC	OO-ALC	SM-ALC	WR-ALC	NPV in 2015	1-Time Cost	ROI Year	Total Positions Realigned	Total Positions Eliminated
5	Gains SM-ALC	TO WR-ALC	TO OC-ALC	Gains OO-ALC	$57,186,000	$18,332,000	4	358	117
6	TO WR-ALC	Gains SM-ALC	TO OO-ALC	Gains OC-ALC	$38,808,000	$16,512,000	5	397	84
7	TO WR-ALC	TO SM-ALC	Gains OO-ALC	Gains OC-ALC	$43,747,000	$16,061,000	4	355	92
8	Gains SM-ALC	Gains WR-ALC	TO OC-ALC	TO OO-ALC	$44,679,000	$23,600,000	5	315	106
9	Gains OC-ALC	TO OC-ALC	Gains WR-ALC	TO SM-ALC	$46,901,000	$22,803,000	5	273	109
10	TO OO-ALC	Gains OC-ALC	Gains WR-ALC	TO SM-ALC	$25,897,000	$24,217,000	8	312	77

Group 3: Instrumentation and Display TRC Workload [Excluding Workload Related to Costs Associated with WR-ALC Co-utilized Equipment of 900 Hours] (One Site Scenarios)

	OC-ALC	OO-ALC	SM-ALC	WR-ALC	NPV in 2015	1-Time Cost	ROI Year	Total Positions Realigned	Total Positions Eliminated
11	Gains All	TO OC-ALC	TO OC-ALC	TO OC-ALC	$57,164,000	$25,019,000	5	473	129
12	TO OO-ALC	Gains All	TO OO-ALC	TO OO-ALC	$19,022,000	$25,380,000	9	512	68
13	TO SM-ALC	TO SM-ALC	Gains All	TO SM-ALC	$24,651,000	$27,317,000	9	470	81
4	TO WR-ALC	TO WR-ALC	TO WR-ALC	Gains All	$36,389,000	$29,149,000	4	555	99

Group 4: Instrumentation and Display TRC Workload [Excluding OO-ALC Compass Workload (4 PE's) and WR-ALC Gyro Workload and Workload Related to Costs Associated with WR-ALC Co-utilized Equipment of 900 Hours] (Three Site Scenarios)

	OC-ALC	OO-ALC	SM-ALC	WR-ALC	NPV in 2015	1-Time Cost	ROI Year	Total Positions Realigned	Total Positions Eliminated
14	Gains All	TO WR-ALC	TO OC-ALC	TO OC-ALC	$53,870,000	$18,903,000	4	391	114
15	TO OO-ALC	Gains All	TO OO-ALC	TO OO-ALC	$19,571,000	$18,454,000	8	434	58
16	TO SM-ALC	TO SM-ALC	Gains All	TO SM-ALC	$25,187,000	$20,010,000	7	388	71

FOR OFFICIAL USE ONLY

PURPOSE: Instrument TRC study, OC-ALC manpower authorizations versus assignments.

SOURCE: Unit Manning documents

METHOD: Totaled all instrument TRC authorizations and assignments.

CONCLUSION: OC-ALC/LIP has 141 authorizations and 146 people assigned to the Instruments TRC workload.

I certify that the above information is accurate and complete to the best of my knowledge and belief.

PREPARER: Claudie D. Blackwell Jr DATE: 18 Nov 94
CLAUDIE D. BLACKWELL JR
OC-ALC/LIPPE DSN - 336-7219

COORDINATION: Jack Srnec DATE: 17 Nov 94
JACK SRNEC OC-ALC/LIP

TRC Focal Point Reviewer: Adam McDaniel DATE: 18 Nov 94

I certify that the above information is accurate and complete to the best of my knowledge and belief.

MAJCOM REVIEWER: _____ DATE: _____

OC-ALC/LIP INSTRUMENTS TRC MANNING 7 NOV 94: 141 AUTHORIZED
146 ASSIGNED

CERTIFICATION WORKSHEET

PURPOSE: Certification of OC-ALC Instrumentation and Display TRC Process Assessment, Resource Control Center (RCC) Yield Rate

SOURCE: FY94 Historical PLA G004C dated 10/14/94
FY95 Retargets G004C dated 01/04/95
FY96-98 Workload Review FY94-99 (FY96/97BES) G004C dated 05/23/94

METHOD: DPSH Yield Rate calculated by DPSH for MTPFE divided by PEs.

CONCLUSION: Yield Rate for MTPFE for the years FY94 through FY98 are attached.

I certify that the attached information is accurate and complete to the best of my knowledge and belief.

Preparer: Maria Brigel Date: 02/23/95

TRC FOCAL POINT: Adam McDaniel Date: 24 Feb 95

I certify that the attached information is accurate and complete to the best of my knowledge and belief.

MAJCOM REVIEWER: _____ Date: _____

Yield Rate for MTPFE

Y	Source	DSSH[illegible]	PEs	Yield [illegible]
94	Historical PLA G004C 10/14/94	[illegible]	125.8[illegible]	1276.45[illegible]
95	Retargets G004C 01/04/95	213[illegible]	146.64	14[illegible]
96	Wild Review 94-99 G004C 05/23/94	183502	125.12	1454.979
97	Wild Review 94-99 G004C 05/23/94	182474	[illegible]	[illegible]
98	Wild Review 94-99 G004C 05/23/94	172894	118.[illegible]	1460.970

The following yield rates were calculated for those RCCs that perform instrument workload. Shown are the yield rates for FY93 through FY94. The source documents are included in this FAX for each FY. It should be noted that MTPTD is where OC-ALC works Two-Level Maintenance instruments, this yielded a lower yield rate because of non-generation of 2LM assets. Also shown is a weighted yield rate for FY93 through FY94. This yield rate is weighted by considering only the instrument workload performed in that RCC and the yield rate for that RCC. OC-ALC believes that this weighted yield reflects a more accuracy yield rate. Therefore, OC-ALC proposes that our yield rate be 1615. Please provide your comments and concurrence with this proposal by 1400 CST, 10 March 95 to Mr. Larry Pulliam, FMPBW, DSN 339-7532.

Historical FY94- 10/14/94 A-G004C-DAW-PL-8ER

RCC	Yield Rate
MTPFE	1675
MTPFA	1352
MTPTD	899
MTPCC	1659

Weighted FY94 Yield Rate 1615

Historical FY93- 10/21/93 A-G004C-DAW-PL-5ER

RCC	Yield Rate
MTPFE	1844
MTPFA	966
MTPTD	Was not a RCC in FY93
MTPCC	2031

Weighted FY93 Yield Rate 1844

Historical FY92- 10/19/92 A-G004C-DAW-PL-3ER

RCC	Yield Rate
MTPFE	1778
MTPFA	835
MTPTD	Was not a RCC in FY93
MTPCC	1859

Weighted FY92 Yield Rate 1769

** I believe the PE Yield Rate for OC-ALC is overstated, for the following reasons:

1) OC-ALC has 161 PE's doing TRC 18 related work, according to them, but the data provided accounts for only 130 PE's.

2) The data supplied to the support the increased yield addressed an RCC not identified as an TRC 18 RCC.

3) OC-ALC stated they used one particular RCC to derive their PE yield rate. It was my understanding that an average of all RCC's, performing TRC 18 work, would be used. That's what we did.

OC-ALC determined there is a direct correlation in the COBRA Model between favorable outcome and a high PE Yield, i.e., the outcome can be skewed by inputing a high PE Yield.

As a result of this all the options, originally agreed to by the Team members, have had their outcomes changed. Team members, from the other ALC's, have also expressed their concern and skepticism.

** Cost to establish a 100,000 Class Clean Room of $900,000 is not appropriate for SM-ALC. We currently have a 10,000 Class and a 300,000 Class, which consistently operates at less than 100,000 Class. I believe the cost of modificaation would be significantly lower than $900,000.

** A statement is contained concerning the number of buildings we use to house the work and this would be a detriment. First of all, the number of buildings quoted was wrong and no where was there a stipulation on number of buildings to be used.

The important point to emphasize is the fact - we have over 200,000 square feet of space available for Instrument and Display workload. We will, most likely, not require that amount to do the work, but if we do need it - then it is available. We will perform most of the repair in buildings 237, 241A, 242, and 251.

TECHNICAL REPAIR CENTER (TRC)
ASSESSMENT TEAM

CERTIFICATION STATEMENT

TRC: INSTRUMENTS AND DISPLAYS

PURPOSE: To nonconcur with the Instrument and Displays Technical Repair Center (TRC) Assessment report dated 30 Mar 95.

SOURCE: Mr Jose L. Goytia, SM-ALC/LIAO, McClellan AFB, CA.
Mr Dan W. Hipes, SM-ALC/LIAO, McClellan AFB, CA.

METHOD: Not Applicable.

CONCLUSION: Nonconcurrence. See Attachments 1 and 2.

I certify that the information contained in this study is accurate and complete to the best of my knowledge and belief.

Preparer: _____ Date: 5 APR 95
Jose L. Goytia, SM-ALC/LIAO
DSN 633-3506

Preparer: _____ Date: 5 Apr 95
Dan W. Hipes, SM-ALC/LIAOS
DSN 633-2775

Division Reviewer: _____ Date: 5 April 95
Butch Gardner, SM-ALC/LIA
DSN 633-4832

SM-ALC Focal Point: _____ Date: _____
Carry Gerick, SM-ALC/FMPB
DSN 633-4374

I certify that the above information is accurate and complete to the best of my knowledge and belief.

MAJCOM REVIEWER: _____ DATE: _____

We do not concur with the recommendations of the Instrument and Display TRC Assessment, dated 30 Mar 95, for the following reasons:

1. OC-ALC unilaterally changed the conclusions and recommendations without the consent and concurrence of the rest of the team members.

2. OC-ALC PE yield rate is not supported by the data supplied. OC-ALC states there are 161 PEs assigned to TRC I9 workload (see Atch 2). According to their data the '94 HLA DPSH shows 206,769 hrs. That figure divided by the PEs (161) equals 1,284. This figure is nowhere near their reported 1,615 yield rate.

   The 1,615 figure was questioned from the time we became aware of the change. Larry Pulliam was asked to provide data to substantiate this figure. We were sent eleven pages of data from the G004C that was, for the most part, not related to the Instrument and Displays workloads. Most of data sent was for RGC code A, which is related to aircraft. And, some of the data was for fiscal year 92 and 93. When this information was questioned, the response was that the RGC codes did not mean anything - "they are assigned locally". This we knew was not true. The data was provided by OC-ALC/PM - they had to know the data provided was invalid. Needless to say, their credibility was/is questionable.

3. We received the 30 Mar 95 revised TRC Assessment package on 4 Apr 95. Various COBRA scenarios are not consistent with each other. Example: scenario 2, moves all workload to OO-ALC, and saves 70 PEs; scenario 12 moves all workload to OO-ALC, and save 68 PEs - what's the difference? Scenario 3 and 13, 84 PEs vs 81 PEs - why?

Atch 1 16

OC-ALC INSTRUMENT AND DISPLAY DATA SUMMARY

WORKLOAD BY TRC SUB-GROUP

6680 - TAG - 3 EA	Control Numbers
6085 - TB - 7 EA	Control Numbers
6615 - TDA - 205 EA	Control Numbers
6605 - TGC - 1 EA	Control Numbers
6605 - TGA - 8 EA	Control Numbers
6620 - TF - 108 EA	Control Numbers
1280 - TFA - 29 EA	Control Numbers
1270 - FHA - 3 EA	Control Numbers
6610 - TC - 130 EA	Control Numbers

MANPOWER

LPPTE	130 PE's	Assigned - Bldg 230
LPPFA	10 PE's	Assigned - Bldg 3707
LPPCC	13 PE's	Assigned - Bldg 3001
LPPTC	8 PE's	Assigned - Bldg 3708

Attch 2.

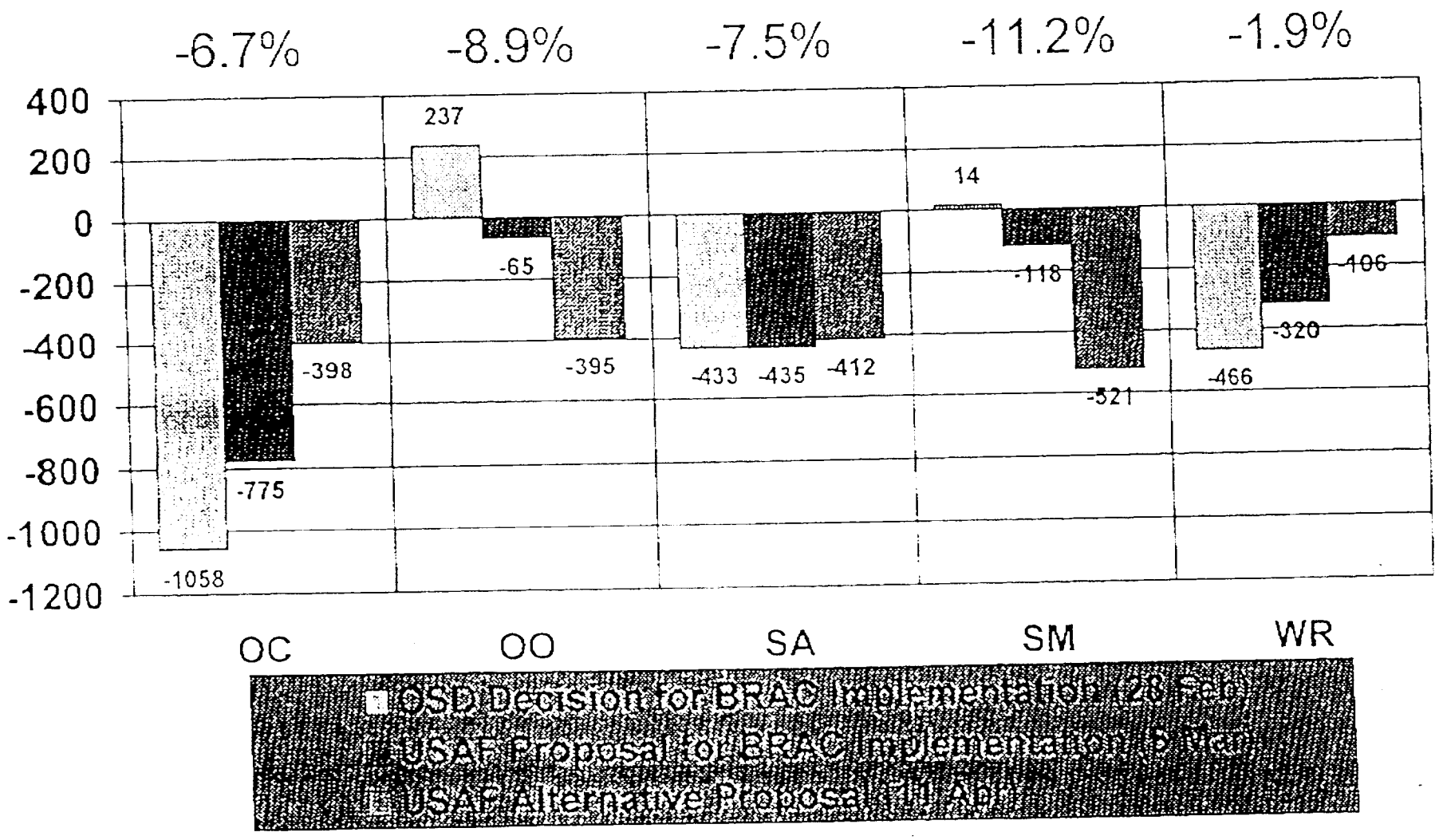
Instruments/Displays	OC-ALC	OO-ALC	SA-ALC	SM-ALC	WR-ALC	TOTAL
Workload - DPSH	280,000	181,000		276,000	175,000	912,000
Capacity - square feet	52,000	28,538		41,496	33,541	155,575
PEs	141	82		190	149	562
						Average
Yield per PE	1986	2207		1453	1174	1623
Square Feet per PE	369	348		218	225	277
DPSH per Square Foot	5.38	6.34		6.65	5.22	5.86

NOTE: OC-ALC Capacity using 130,000, but can be consolidated to 52,000

TRC 18 Instruments/Displays (AFMCI 21-xx draft)

	GO-72E	Technology		
OC-ALC	184,593	Automatic Flight Controls	(TD)	76,917
		Engine Instruments	(TE)	87,758
OO-ALC	74,794	Electrical/Mechanical Instruments	(TA)	4,398
		Pressure, Temperature, Humidity	(TB)	5,150
		Navigational Instruments (Except Inertial Measurement Unit/Platforms)	(TG)	53,608
		Multi-function Displays	(TH)	no hours reported in GO-72E
SM-ALC	195,842	Flight Control Instruments	(TC)	186,814
		Note: TC at other ALCs: OC 17,947		
		OO 10,032		
		WR 32,714		
		AGMC 15,881		
				76,574
WR-ALC	178,476	Gyros	(TF)	145,596
AGMC	284,852	Displacement & Ring Laser Gyros	(TFF/TFG)	78,122
		Inertial Measurement Unit/Platforms	(TGG)	188,242

Personnel Changes



Personnel Savings - BRAC Implementation (1713)

	OC	OO	SA	SM	WR	
Composite/Plastic	-26	-26	-12	+135	-106	
Hyd/Pneu	-3	-10	-4	-59	-3	
Tubing (Metal Mfg)	-5	-4	-1	-2	+1	
ATE Software (Avionics)	-88	-26	-46	-21	+73	
Sheetmetal Repair / Mfg	-170	+353	-38	-40	-192	
Machine Mfg (Metal Mfg)	+16	-63	-31	-50	+77	
Foundry		-2	+7	-7	-2	
Instrument/Display	-184	-101		+242	-43	-86
Abn Electronics	-39	-42		-108	-15	
Electronic Mfg (PWB)		-29		-23	+38	
Electro/Mech Support Equip				-11	-3	
Injection Molding		-3		+2		
IPE Software (Engines)	-34		+6			
Plating	-7	+15	-21	-28	-6	
Engine Related	-50		-112			
Realignment Totals	-590	+62	-252	+30	-181	
Downsizing Totals	-185	-127	-183	-148	-139	
						Grand Totals
BRAC Implementation Totals	-775	-65	-435	-118	-320	-1713
Initial BRAC Planning Totals	-1058	+237	-433	+14	-466	-1706

Personnel Savings - BRAC Implementation (1832)

	OC	OO	SA	SM	WR	
Composites/Plastics	-26	-26	-12	+135	-106	
Hyd/Pneu	-3	-10	-4	-59	-3	
Tubing (Metal Mfg)	-5	-4	-1	-2	+1	
ATE Software (Avionics)	-88	-26	-46	-21	+73	
Machine (Metal Mfg)	+16	-63	-31	-50	+77	
Foundry		-2	+7	-7	-2	
Instrument/Display	+64	-101		-221	+129	
Abn Electronics	-39	-42		-108	-15	
Electronic Mfg (PWB)		+29		-9	-41	
Electro/Mech SE				-11	-3	
Injection Molding		-3		+2		
IPE Software (Engines)	-34		+6			
Plating	-5	-10	-20	-5	-6	
Engine Related	-50		-112			
Realignment Subtotals	-170	-258	-213	-356	+104	
Sheetmetal Repair / Mfg	-43	-10	-16	-17	-71	
Downsizing Subtotals	-185	-127	-183	-148	-139	
						Grand Totals
Revised Totals	-398	-395	-412	-521	-106	-1832
BRAC Implementation Totals	-775	-65	-435	-118	-320	-1713

Instruments

- BRAC: Consolidate at SM-ALC (except gyros/compasses)
  - Utilized TRC for instruments
  - Utilizes instrument facility
- Change: Consolidate OO at OC and SM at WR
  - Lowest cost option from TRC study

Comparison of BRAC Recommendation and Option			
	Infrastructure Reductions (Sq Ft)	Capacity Reductions (DLH)	PE Reductions
BRAC	127,000	265,160	86
Change	94,600	202,940	129
Improvement	(32,400)	(62,220)	43

Recap

	Infrastructure Reductions (Sq Ft)	Capacity Reductions (DLH)	PE Reductions
Printed Wire Boards	1300	74,020	7
Sheet Metal (Rpr/Mfg)	37,000	26,653	70
Instruments	(32,400)	(62,220)	(43)
Plating	(19950)	16,470	(1)
Net	(14,050)	54,923	119

Document Separator

Data As Of 14:31 04/13/1995, Report Created 14:16 05/22/1995

Department : Air Force
Option Package : IMPROVED BRAC IMPLE2
Scenario File : S:\COBRA\TRC\IMPROV2.CBR
Std Fctrs File : S:\COBRA\TRC\DEPOT.SFF

Starting Year : 1996
Final Year : 1998
ROI Year : 2001 (3 Years)

NPV in 2015($K): -975,341
1-Time Cost($K): 233,537

Net Costs ($K) Constant Dollars

	1996	1997	1998	1999	2000	2001	Total	Beyond
MilCon	46,373	46,373	47,778	0	0	0	140,525	0
Person	0	0	-41,038	-92,473	-92,473	-92,473	-318,457	-92,473
Overhd	3,142	4,076	2,361	247	247	247	10,319	247
Moving	7,847	7,847	24,904	0	0	0	40,598	0
Missio	0	0	0	0	0	0	0	0
Other	17,247	17,247	4,890	0	0	0	39,384	0
TOTAL	74,610	75,543	38,896	-92,226	-92,226	-92,226	-87,630	-92,226

	1996	1997	1998	1999	2000	2001	Total
POSITIONS ELIMINATED							
Off	0	0	5	0	0	0	5
Enl	0	0	38	0	0	0	38
Civ	0	0	1,944	0	0	0	1,944
TOT	0	0	1,987	0	0	0	1,987
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:

Assumptions:
IMPRAC BRAC IMPLEMENTATION
(Assumes DLA does not take space)
(All infrastructure reduction costs/savings included)

This data file reflects the elimination of 1832 DMBA authorizations and 155 BOS authorizations. See source documents filed under TAB 3 in the "TRC Update" notebook.

Department : Air Force
Option Package : IMPROVED BRAC IMPLE2
Scenario File : S:\COBRA\TRC\IMPROV2.CBR
Std Fctrs File : S:\COBRA\TRC\DEPOT.SFF

Costs ($K) Constant Dollars

	1996	1997	1998	1999	2000	2001	Total	Beyond
MilCon	46,373	46,373	47,778	0	0	0	140,525	0
Person	0	0	5,215	0	0	0	5,215	0
Overhd	3,642	5,575	6,597	5,000	5,000	5,000	30,814	5,000
Moving	7,847	7,847	24,904	0	0	0	40,598	0
Missio	0	0	0	0	0	0	0	0
Other	17,247	17,247	4,890	0	0	0	39,384	0
TOTAL	75,109	77,042	89,386	5,000	5,000	5,000	256,537	5,000

Savings ($K) Constant Dollars

	1996	1997	1998	1999	2000	2001	Total	Beyond
MilCon	0	0	0	0	0	0	0	0
Person	0	0	46,253	92,473	92,473	92,473	323,673	92,473
Overhd	499	1,500	4,236	4,753	4,753	4,753	20,495	4,753
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	499	1,500	50,489	97,226	97,226	97,226	344,168	97,226

NET PRESENT VALUES REPORT (COBRA v5.08)
Data As Of 14:31 04/13/1995, Report Created 14:16 05/22/1995

Department : Air Force
Option Package : IMPROVED BRAC IMPLE2
Scenario File : S:\COBRA\TRC\IMPROV2.CBR
Std Fctrs File : S:\COBRA\TRC\DEPOT.SFF

Year	Cost($)	Adjusted Cost($)	NPV($)
1996	74,609,637	73,604,440	73,604,440
1997	75,542,921	72,530,560	146,135,000
1998	38,896,137	36,345,605	182,480,605
1999	-92,226,397	-83,872,355	98,608,250
2000	-92,226,397	-81,627,596	16,980,654
2001	-92,226,397	-79,442,916	-62,462,262
2002	-92,226,397	-77,316,706	-139,778,969
2003	-92,226,397	-75,247,403	-215,026,372
2004	-92,226,397	-73,233,482	-288,259,854
2005	-92,226,397	-71,273,462	-359,533,316
2006	-92,226,397	-69,365,900	-428,899,216
2007	-92,226,397	-67,509,391	-496,408,607
2008	-92,226,397	-65,702,571	-562,111,178
2009	-92,226,397	-63,944,108	-626,055,286
2010	-92,226,397	-62,232,708	-688,287,994
2011	-92,226,397	-60,567,113	-748,855,107
2012	-92,226,397	-58,946,095	-807,801,202
2013	-92,226,397	-57,368,462	-865,169,664
2014	-92,226,397	-55,833,053	-921,002,718
2015	-92,226,397	-54,338,738	-975,341,456

TOTAL ONE-TIME COST REPORT (COBRA v5.08)
Data As Of 14:31 04/13/1995, Report Created 14:16 05/22/1995

Department : Air Force
Option Package : IMPROVED BRAC IMPLE2
Scenario File : S:\COBRA\TRC\IMPROV2.CBR
Std Fctrs File : S:\COBRA\TRC\DEPOT.SFF

(All values in Dollars)

Category	Cost	Sub-Total
Construction		
Military Construction	140,525,000	
Family Housing Construction	0	
Information Management Account	0	
Land Purchases	0	
Total - Construction		140,525,000
Personnel		
Civilian RIF	3,528,934	
Civilian Early Retirement	814,369	
Civilian New Hires	0	
Eliminated Military PCS	264,628	
Unemployment	607,608	
Total - Personnel		5,215,539
Overhead		
Program Planning Support	614,509	
Mothball / Shutdown	7,200,000	
Total - Overhead		7,814,509
Moving		
Civilian Moving	0	
Civilian PPS	16,819,200	
Military Moving	0	
Freight	0	
One-Time Moving Costs	23,779,000	
Total - Moving		40,598,200
Other		
HAP / RSE	0	
Environmental Mitigation Costs	0	
One-Time Unique Costs	39,384,000	
Total - Other		39,384,000
Total One-Time Costs		233,537,248
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		233,537,248

TOTAL MILITARY CONSTRUCTION ASSETS (COBRA v5.08)
Data As Of 14:31 04/13/1995, Report Created 14:16 05/22/1995

Department : Air Force
Option Package : IMPROVED BRAC IMPLE2
Scenario File : S:\COBRA\TRC\IMPROV2.CBR
Std Fctrs File : S:\COBRA\TRC\DEPOT.SFF

All Costs in $K

Base Name	Total MilCon	IMA Cost	Land Purch	Cost Avoid	Total Cost
HILL	29,054	0	0	0	29,054
KELLY	35,755	0	0	0	35,755
MCCLELLAN	31,752	0	0	0	31,752
ROBINS	13,261	0	0	0	13,261
TINKER	30,703	0	0	0	30,703
Totals:	140,525	0	0	0	140,525

PERSONNEL SUMMARY REPORT (COBRA v5.08)
Data As Of 14:31 04/13/1995, Report Created 14:16 05/22/1995

Department : Air Force
Option Package : IMPROVED BRAC IMPLE2
Scenario File : S:\COBRA\TRC\IMPROV2.CBR
Std Fctrs File : S:\COBRA\TRC\DEPOT.SFF

PERSONNEL SUMMARY FOR: HILL, UT

BASE POPULATION (FY 1996, Prior to BRAC Action):

Officers	Enlisted	Students	Civilians
617	3,949	0	8,691

SCENARIO POSITION CHANGES:

	1996	1997	1998	1999	2000	2001	Total
Officers	0	0	-1	0	0	0	-1
Enlisted	0	0	-8	0	0	0	-8
Civilians	0	0	-419	0	0	0	-419
TOTAL	0	0	-428	0	0	0	-428

BASE POPULATION (After BRAC Action):

Officers	Enlisted	Students	Civilians
616	3,941	0	8,272

PERSONNEL SUMMARY FOR: KELLY, TX

BASE POPULATION (FY 1996, Prior to BRAC Action):

Officers	Enlisted	Students	Civilians
801	3,419	0	12,678

SCENARIO POSITION CHANGES:

	1996	1997	1998	1999	2000	2001	Total
Officers	0	0	-1	0	0	0	-1
Enlisted	0	0	-8	0	0	0	-8
Civilians	0	0	-437	0	0	0	-437
TOTAL	0	0	-446	0	0	0	-446

BASE POPULATION (After BRAC Action):

Officers	Enlisted	Students	Civilians
800	3,411	0	12,241

PERSONNEL SUMMARY FOR: MCCLELLAN, CA

BASE POPULATION (FY 1996, Prior to BRAC Action):

Officers	Enlisted	Students	Civilians
449	2,325	0	8,882

SCENARIO POSITION CHANGES:

	1996	1997	1998	1999	2000	2001	Total
Officers	0	0	-1	0	0	0	-1
Enlisted	0	0	-11	0	0	0	-11
Civilians	0	0	-553	0	0	0	-553
TOTAL	0	0	-565	0	0	0	-565

BASE POPULATION (After BRAC Action):

Officers	Enlisted	Students	Civilians
448	2,314	0	8,329

Department : Air Force
Option Package : IMPROVED BRAC IMPLE2
Scenario File : S:\COBRA\TRC\IMPROV2.CBR
Std Fctrs File : S:\COBRA\TRC\DEPOT.SFF

PERSONNEL SUMMARY FOR: ROBINS, GA

BASE POPULATION (FY 1996, Prior to BRAC Action):

Officers	Enlisted	Students	Civilians
739	3,269	0	11,119

SCENARIO POSITION CHANGES:

	1996	1997	1998	1999	2000	2001	Total
Officers	0	0	-1	0	0	0	-1
Enlisted	0	0	-3	0	0	0	-3
Civilians	0	0	-113	0	0	0	-113
TOTAL	0	0	-117	0	0	0	-117

BASE POPULATION (After BRAC Action):

Officers	Enlisted	Students	Civilians
738	3,266	0	11,006

PERSONNEL SUMMARY FOR: TINKER, OK

BASE POPULATION (FY 1996, Prior to BRAC Action):

Officers	Enlisted	Students	Civilians
1,430	5,995	0	11,678

SCENARIO POSITION CHANGES:

	1996	1997	1998	1999	2000	2001	Total
Officers	0	0	-1	0	0	0	-1
Enlisted	0	0	-8	0	0	0	-8
Civilians	0	0	-422	0	0	0	-422
TOTAL	0	0	-431	0	0	0	-431

BASE POPULATION (After BRAC Action):

Officers	Enlisted	Students	Civilians
1,429	5,987	0	11,256

TOTAL PERSONNEL IMPACT REPORT (COBRA v5.08)
Data As Of 14:31 04/13/1995, Report Created 14:16 05/22/1995

Department : Air Force
Option Package : IMPROVED BRAC IMPLE2
Scenario File : S:\COBRA\TRC\IMPROV2.CBR
Std Fctrs File : S:\COBRA\TRC\DEPOT.SFF

	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)*+		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	1,944	0	0	0	1944
Early Retirement	10.00%	0	0	194	0	0	0	194
Regular Retirement	5.00%	0	0	98	0	0	0	98
Civilian Turnover	15.00%	0	0	292	0	0	0	292
Civs Not Moving (RIFs)*+		0	0	116	0	0	0	116
Priority Placement#	60.00%	0	0	1,166	0	0	0	1166
Civilians Available to Move		0	0	78	0	0	0	78
Civilians Moving		0	0	0	0	0	0	0
Civilian RIFs (the remainder)		0	0	78	0	0	0	78
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 RETIRMENTS		0	0	194	0	0	0	194
TOTAL CIVILIAN RIFS		0	0	194	0	0	0	194
TOTAL CIVILIAN PRIORITY PLACEMENTS#		0	0	1,166	0	0	0	1166
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.

+ 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 PPS placements involving a PCS is 50.00%

Department : Air Force
Option Package : IMPROVED BRAC IMPLE2
Scenario File : S:\COBRA\TRC\IMPROV2.CBR
Std Fctrs File : S:\COBRA\TRC\DEPOT.SFF

ONE-TIME COSTS -----($K)-----	1996	1997	1998	1999	2000	2001	Total
CONSTRUCTION							
MILCON	46,373	46,373	47,778	0	0	0	140,525
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	0	3,529	0	0	0	3,529
Civ Retire	0	0	814	0	0	0	814
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	16,819	0	0	0	16,819
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	608	0	0	0	608
OTHER							
Program Plan	266	199	149	0	0	0	614
Shutdown	2,376	2,376	2,448	0	0	0	7,200
New Hire	0	0	0	0	0	0	0
1-Time Move	7,847	7,847	8,085	0	0	0	23,779
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	265	0	0	0	265
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	17,247	17,247	4,890	0	0	0	39,384
TOTAL ONE-TIME	74,109	74,042	85,386	0	0	0	233,537

Department : Air Force
Option Package : IMPROVED BRAC IMPLE2
Scenario File : S:\COBRA\TRC\IMPROV2.CBR
Std Fctrs File : S:\COBRA\TRC\DEPOT.SFF

RECURRINGCOSTS -----($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	1,000	3,000	4,000	5,000	5,000	5,000	23,000	5,000
Unique Other	0	0	0	0	0	0	0	0
TOTAL RECUR	1,000	3,000	4,000	5,000	5,000	5,000	23,000	5,000
TOTAL COST	75,109	77,042	89,386	5,000	5,000	5,000	256,537	5,000

ONE-TIME SAVES -----($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							
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 -----($K)-----	1996	1997	1998	1999	2000	2001	Total	Beyond
FAM HOUSE OPS	0	0	0	0	0	0	0	0
O&M								
RPMA	499	1,500	2,517	3,035	3,035	3,035	13,620	3,035
BOS	0	0	1,719	1,719	1,719	1,719	6,875	1,719
Unique Operat	0	0	0	0	0	0	0	0
Civ Salary	0	0	45,336	90,672	90,672	90,672	317,352	90,672
CHAMPUS	0	0	0	0	0	0	0	0
MIL PERSONNEL								
Off Salary	0	0	197	393	393	393	1,377	393
Enl Salary	0	0	687	1,374	1,374	1,374	4,808	1,374
House Allow	0	0	34	34	34	34	136	34
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	499	1,500	50,489	97,226	97,226	97,226	344,168	97,226
TOTAL SAVINGS	499	1,500	50,489	97,226	97,226	97,226	344,168	97,226

Data As Of 14:31 04/13/1995, Report Created 14:16 05/22/1995

Department : Air Force
Option Package : IMPROVED BRAC IMPLE2
Scenario File : S:\COBRA\TRC\IMPROV2.CBR
Std Fctrs File : S:\COBRA\TRC\DEPOT.SFF

ONE-TIME NET -----($K)-----	1996	1997	1998	1999	2000	2001	Total
CONSTRUCTION							
MILCON	46,373	46,373	47,778	0	0	0	140,525
Fam Housing	0	0	0	0	0	0	0
O&M							
Civ Retir/RIF	0	0	4,343	0	0	0	4,343
Civ Moving	0	0	16,819	0	0	0	16,819
Other	10,489	10,422	11,290	0	0	0	32,201
MIL PERSONNEL							
Mil Moving	0	0	265	0	0	0	265
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	17,247	17,247	4,890	0	0	0	39,384
Land	0	0	0	0	0	0	0
TOTAL ONE-TIME	74,109	74,042	85,386	0	0	0	233,537

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	-499	-1,500	-2,517	-3,035	-3,035	-3,035	-13,620	-3,035
BOS	0	0	-1,719	-1,719	-1,719	-1,719	-6,875	-1,719
Unique Operat	0	0	0	0	0	0	0	0
Caretaker	0	0	0	0	0	0	0	0
Civ Salary	0	0	-45,336	-90,672	-90,672	-90,672	-317,352	-90,672
CHAMPUS	0	0	0	0	0	0	0	0
MIL PERSONNEL								
Mil Salary	0	0	-883	-1,767	-1,767	-1,767	-6,184	-1,767
House Allow	0	0	-34	-34	-34	-34	-136	-34
OTHER								
Procurement	0	0	0	0	0	0	0	0
Mission	0	0	0	0	0	0	0	0
Misc Recur	1,000	3,000	4,000	5,000	5,000	5,000	23,000	5,000
Unique Other	0	0	0	0	0	0	0	0
TOTAL RECUR	501	1,500	-46,489	-92,226	-92,226	-92,226	-321,168	-92,226
TOTAL NET COST	74,610	75,543	38,896	-92,226	-92,226	-92,226	-87,630	-92,226

PERSONNEL, SF, RPMA, AND BOS DELTAS (COBRA v5.08)
Data As Of 14:31 04/13/1995, Report Created 14:16 05/22/1995

Department : Air Force
Option Package : IMPROVED BRAC IMPLE2
Scenario File : S:\COBRA\TRC\IMPROV2.CBR
Std Fctrs File : S:\COBRA\TRC\DEPOT.SFF

	Personnel			SF		
Base	Change	%Change		Change	%Change	Chg/Per
HILL	-428	-3%		-1,274,000	-9%	2,977
KELLY	-446	-3%		-1,468,000	-9%	3,291
MCCLELLAN	-565	-5%		-1,273,000	-11%	2,253
ROBINS	-117	-1%		-541,000	-4%	4,624
TINKER	-431	-2%		-1,204,000	-8%	2,793

	RPMA($)			BOS($)		
Base	Change	%Change	Chg/Per	Change	%Change	Chg/Per
HILL	-519,642	-9%	1,214	-323,659	-2%	756
KELLY	-1,426,516	-8%	3,198	-252,761	-1%	567
MCCLELLAN	-584,525	-10%	1,034	-637,368	-3%	1,128
ROBINS	-225,915	-4%	1,931	-104,134	0%	890
TINKER	-278,014	-8%	645	-400,807	-1%	930

	RPMABOS($)		
Base	Change	%Change	Chg/Per
HILL	-843,301	-3%	1,970
KELLY	-1,679,277	-5%	3,765
MCCLELLAN	-1,221,893	-4%	2,163
ROBINS	-330,049	-1%	2,821
TINKER	-678,821	-2%	1,575

RPMA/BOS CHANGE REPORT (COBRA v5.08)
Data As Of 14:31 04/13/1995, Report Created 14:16 05/22/1995

Department : Air Force
Option Package : IMPROVED BRAC IMPLE2
Scenario File : S:\COBRA\TRC\IMPROV2.CBR
Std Fctrs File : S:\COBRA\TRC\DEPOT.SFF

Net Change($K)	1996	1997	1998	1999	2000	2001	Total	Beyond
RPMA Change	-499	-1,500	-2,517	-3,035	-3,035	-3,035	-13,620	-3,035
BOS Change	0	0	-1,719	-1,719	-1,719	-1,719	-6,875	-1,719
Housing Change	0	0	0	0	0	0	0	0
TOTAL CHANGES	-499	-1,500	-4,236	-4,753	-4,753	-4,753	-20,495	-4,753

INPUT DATA REPORT (COBRA v5.08)
Data As Of 14:31 04/13/1995, Report Created 14:16 05/22/1995

Department : Air Force
Option Package : IMPROVED BRAC IMPLE2
Scenario File : S:\COBRA\TRC\IMPROV2.CBR
Std Fctrs File : S:\COBRA\TRC\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	Realignment
MCCLELLAN, CA	Realignment
ROBINS, GA	Realignment
TINKER, OK	Realignment

Summary:

Assumptions:
IMPRAC BRAC IMPLEMENTATION
(Assumes DLA does not take space)
(All infrastructure reduction costs/savings included)

This data file reflects the elimination of 1832 DMBA authorizations and 155 BOS authorizations. See source documents filed under TAB 3 in the "TRC Update" notebook.

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 : IMPROVED BRAC IMPLE2
Scenario File : S:\COBRA\TRC\IMPROV2.CBR
Std Fctrs File : S:\COBRA\TRC\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 ($/Month):	80		
Per Diem Rate ($/Day):	97	Homeowner Assistance Program:	No
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 : IMPROVED BRAC IMPLE2
Scenario File : S:\COBRA\TRC\IMPROV2.CBR
Std Fctrs File : S:\COBRA\TRC\DEPOT.SFF

INPUT SCREEN FIVE - DYNAMIC BASE INFORMATION

Name: HILL, UT

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost ($K):	2,984	2,984	498	0	0	0
1-Time Unique Save ($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 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(%):	33%	33%	34%	0%	0%	0%
Shutdown Schedule (%):	33%	33%	34%	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):	1,274	Perc Family Housing ShutDown:				0.0%

Name: KELLY, TX

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost ($K):	2,898	2,898	410	0	0	0
1-Time Unique Save ($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 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(%):	33%	33%	34%	0%	0%	0%
Shutdown Schedule (%):	33%	33%	34%	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):	1,468	Perc Family Housing ShutDown:				0.0%

Name: MCCLELLAN, CA

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost ($K):	3,749	3,749	1,287	0	0	0
1-Time Unique Save ($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 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(%):	33%	33%	34%	0%	0%	0%
Shutdown Schedule (%):	33%	33%	34%	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):	1,273	Perc Family Housing ShutDown:				0.0%

Department : Air Force
Option Package : IMPROVED BRAC IMPLE2
Scenario File : S:\COBRA\TRC\IMPROV2.CBR
Std Fctrs File : S:\COBRA\TRC\DEPOT.SFF

INPUT SCREEN FIVE - DYNAMIC BASE INFORMATION

Name: ROBINS, GA

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost ($K):	4,315	4,315	1,870	0	0	0
1-Time Unique Save ($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 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(%):	33%	33%	34%	0%	0%	0%
Shutdown Schedule (%):	33%	33%	34%	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):	541	Perc Family Housing ShutDown:				0.0%

Name: TINKER, OK

	1996	1997	1998	1999	2000	2001
1-Time Unique Cost ($K):	3,301	3,301	825	0	0	0
1-Time Unique Save ($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(%):	33%	33%	34%	0%	0%	0%
Shutdown Schedule (%):	33%	33%	34%	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):	1,204	Perc Family Housing ShutDown:				0.0%

INPUT SCREEN SIX - BASE PERSONNEL INFORMATION

Name: HILL, UT

	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	-8	0	0	0
Civ Scenario Change:	0	0	-419	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 : IMPROVED BRAC IMPLE2
Scenario File : S:\COBRA\TRC\IMPROV2.CBR
Std Fctrs File : S:\COBRA\TRC\DEPOT.SFF

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	-8	0	0	0
Civ Scenario Change:	0	0	-437	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: MCCLELLAN, CA

	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	-11	0	0	0
Civ Scenario Change:	0	0	-553	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	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	-3	0	0	0
Civ Scenario Change:	0	0	-113	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: 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	-8	0	0	0
Civ Scenario Change:	0	0	-422	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 : IMPROVED BRAC IMPLE2
Scenario File : S:\COBRA\TRC\IMPROV2.CBR
Std Fctrs File : S:\COBRA\TRC\DEPOT.SFF

INPUT SCREEN SEVEN - BASE MILITARY CONSTRUCTION INFORMATION

Name: HILL, UT

Description	Categ	New MilCon	Rehab MilCon	Total Cost($K)
TRC Rearr/Renovate	OTHER	0	265,000	2,650
Demolition	OTHER	0	0	14,918
Demolish 639K sq ft				
Squeeze Down	OTHER	0	135,000	9,136
Size to Core	OTHER	0	235,000	2,350

Name: KELLY, TX

Description	Categ	New MilCon	Rehab MilCon	Total Cost($K)
TRC Rearr/Renovate	OTHER	0	425,000	4,250
Demolition	OTHER	0	0	16,513
Demolish 724K sq ft				
Squeeze Down	OTHER	0	520,000	14,682
Size to Core	OTHER	0	31,000	310

Name: MCCLELLAN, CA

Description	Categ	New MilCon	Rehab MilCon	Total Cost($K)
TRC Rearr/Renovate	OTHER	0	184,000	1,840
Demolition	OTHER	0	0	14,377
Demolish 649K sq ft				
Squeeze Down	OTHER	0	220,000	10,255
Size to Core	OTHER	0	528,000	5,280

Name: ROBINS, GA

Description	Categ	New MilCon	Rehab MilCon	Total Cost($K)
TRC Rearr/Renovate	OTHER	0	149,000	1,490
Demolition	OTHER	0	0	5,344
Demolish 225K sq ft				
Squeeze Down	OTHER	0	319,000	6,427

None.

Name: TINKER, OK

Description	Categ	New MilCon	Rehab MilCon	Total Cost($K)
TRC Rearr/Renovate	OTHER	0	304,000	3,040
Demolition	OTHER	0	0	16,648
Demolish 706K sq ft				
Squeeze Down	OTHER	0	164,000	10,265
Size to Core	OTHER	0	75,000	750

Department : Air Force
Option Package : IMPROVED BRAC IMPLE2
Scenario File : S:\COBRA\TRC\IMPROV2.CBR
Std Fctrs File : S:\COBRA\TRC\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

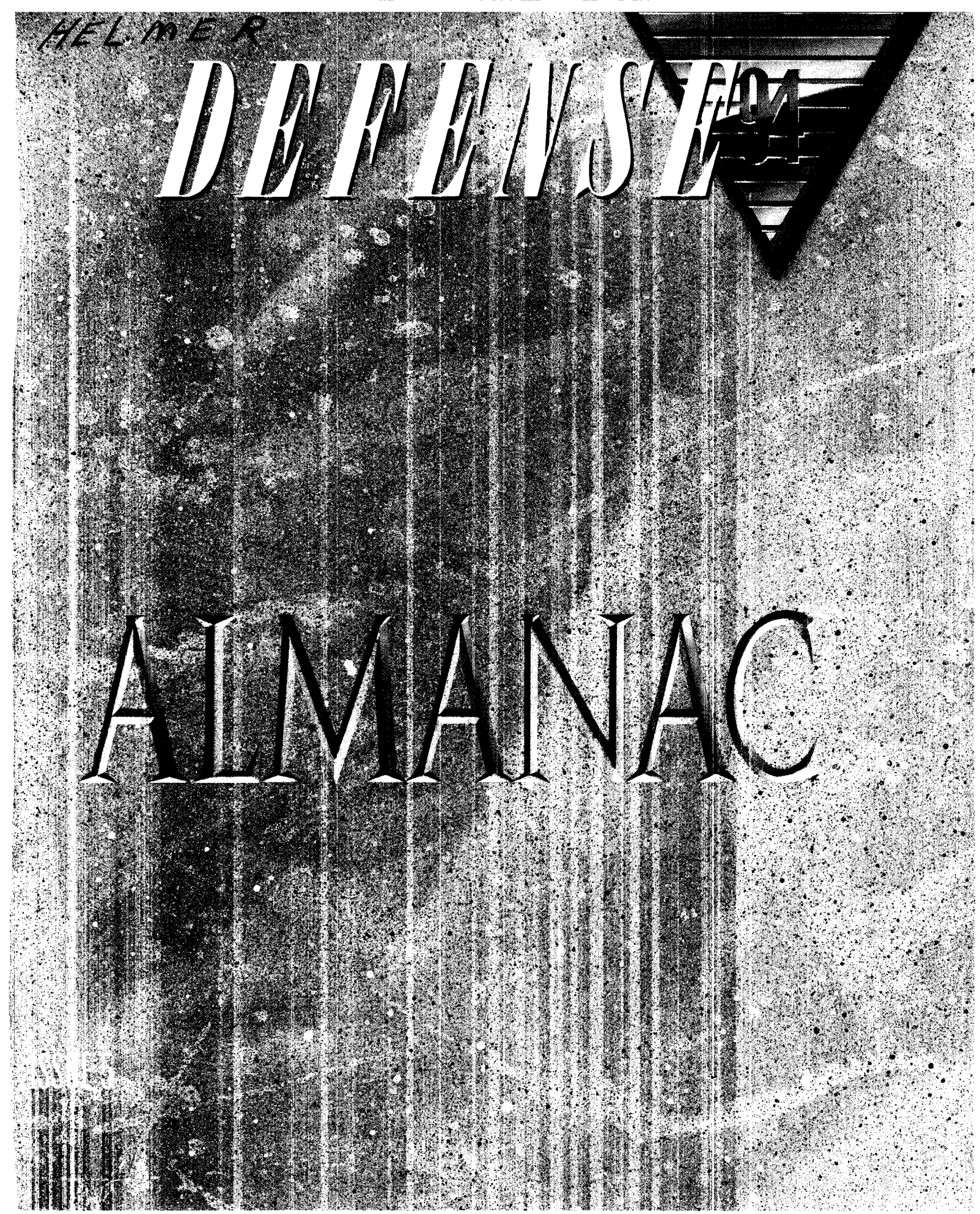
STANDARD FACTORS SCREEN FOUR - MILITARY CONSTRUCTION

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			

Document Separator

HELMER

DEFENSE



ALMANAC

Evolution of The National Defense Structure

★ 1789 War Department established.

★ 1798 Navy Department established.

★ 1942 Joint Chiefs of Staff established.

★ 1947 National Military Establishment created.

★ 1949 Name changed to Department of Defense.

The National Security Act of 1947 created the National Military Establishment, which came into being Sept. 18, 1947. The Army, Navy and Air Force were Cabinet-level executive departments, with the secretary of defense functioning primarily as a coordinator. In 1949, amendments to the National Security Act established the secretary of defense as principal assistant to the president on defense matters and changed the name of the National Military Establishment to the Department of Defense. The amendments also made the military departments subordinate to the Department of Defense and provided for uniform budgetary and fiscal procedures.

Under the Goldwater-Nichols Department of Defense Reorganization Act of 1986, the chain of command runs from the president to the secretary of defense to the unified commanders in chief. Orders and other communications from the president or secretary are transmitted through the chairman of the Joint Chiefs of Staff.

The following is the order of precedence of members of the armed forces when in formation:

1. Cadets, United States Military Academy
2. Midshipmen, United States Naval Academy
3. Cadets, United States Air Force Academy
4. Cadets, United States Coast Guard Academy
5. Midshipmen, United States Merchant Marine Academy
6. United States Army
7. United States Marine Corps
8. United States Navy
9. United States Air Force
10. United States Coast Guard
11. Army National Guard of the United States
12. Army Reserve
13. Marine Corps Reserve
14. Naval Reserve
15. Air National Guard of the United States
16. Air Force Reserve
17. Coast Guard Reserve
18. Other training organizations of the Army, Marine Corps, Navy, Air Force and Coast Guard, in that order, respectively

When the Coast Guard operates as part of the Navy, the Cadets of the Coast Guard Academy, the Coast Guard and the Coast Guard Reserve take respective precedence after Naval Academy Midshipmen, the Navy and Naval Reserve.

OUSD(P&R)

DoD at a Glance

PEOPLE

Active duty forces in the Army, Navy, Marine Corps and Air Force number 1.7 million, with another nearly 1.9 million in the Ready and Standby Reserves, and nearly 1 million civilians.

PLACES

More than 560 military installations and properties. About 470 of them in the United States, approximately 87 overseas in 19 countries and eight in U.S. territories. Approximately one-third of all active duty personnel are stationed outside of the United States.

MONEY

Because of change of administration, there was no fiscal 1994-95 biennial budget. The fiscal 1995 budget begins the Future Years Defense Program covering fiscal years 1995-99. Budget authority for fiscal 1995 requested $252.2 billion. Outlays for fiscal 1995 proposed at $259.2 billion. (Figures reflect the president's budget transmitted to Congress in January 1994.)

ORGANIZATION

The Department of Defense is a Cabinet-level organization. Reporting to it are 16 Defense agencies and the three military departments (Army, Navy and Air Force). The four armed services are subordinate to their military departments. The Marine Corps is the second armed service in the Department of the Navy. (A fifth armed service, the U.S. Coast Guard, reports to the Department of Transportation in peacetime and to the Department of the Navy in wartime.) The military departments are responsible for recruiting, training and equipping their forces, but operational control of those forces in combat is assigned to one of the unified commands, which currently are: U.S. European Command, U.S. Pacific Command, U.S. Atlantic Command, U.S. Southern Command, U.S. Central Command, U.S. Space Command, U.S. Special Operations Command, U.S. Transportation Command and U.S. Strategic Command.

MAJOR WEAPONS AND COMBAT FORCES *(As of June 30, 1994)*

918 Intercontinental Ballistic Missiles (USAF)

14 Fleet Ballistic Missile Submarines

336 Deployed Submarine-Launched Ballistic Missiles

9 Air Force Bomber Wings

30 (19 Res/ANG) Airlift Wings

22 (8 ARNG) Army Divisions

4 (1 Res) Marine Divisions

34 (15 Res/ANG) Air Force Fighter Wings

11 (2 Res) Navy Carrier Air Wings

4 (1 Res) Marine Aircraft Wings

13 Aircraft Carriers

401 Total Battle Force Ships

87 Navy Attack Submarines

21 Ships in the Naval Reserve

131 Ships in the Military Sealift Command:

42 Naval Fleet Auxiliary Force (14 Surveillance, 7 Combat Stores, 13 Oilers, 1 Ammunition, 7 Fleet Ocean Tugs),

13 Special Mission Vessels (2 Missile Range Instrumentation, 7 Surveying, 1 Navigation Test Support, 1 Cable Repairing, 2 Acoustic Research),

76 Strategic Sealift (17 Chartered Tankers, 14 Chartered Dry Cargo, 13 Maritime Pre-positioning Ships, 20 Afloat Prepositioning Ships, 8 Fast Sealift Ships, 2 Hospital Ships, 2 Aviation Logistics Support Ships).

96 Ready Reserve Force Ships (These ships normally are maintained in a reduced operating status by the Maritime Administration. When activated, the vessels are under the operational control of MSC.)

720 (349 Res/ANG) Air Force Airlift Aircraft

16 (8 Res/ANG) Air Force Refueling Wings

15 (1 Res/ANG) Air Force Composite Wings

Office of the Secretary of Defense

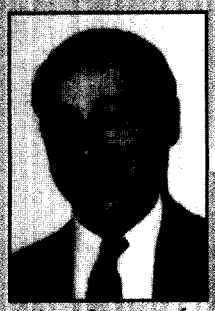
(As of Oct. 15, 1994)

Secretary of Defense
William J. Perry

Under Secretary of Defense for Policy
Walter B. Slocombe

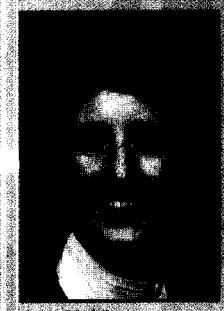
Principal Deputy Under Secretary of Defense for Policy
Jan M. Lodal

Comptroller and Chief Financial Officer
John J. Hamre



Assistant Secretary of Defense for International Security Affairs
Joseph S. Nye Jr.

Assistant Secretary of Defense for International Security Policy
Ashton B. Carter



Principal Deputy Comptroller
Alice C. Maroni

Assistant Secretary of Defense for Strategy and Requirements
Edward L. Warner III

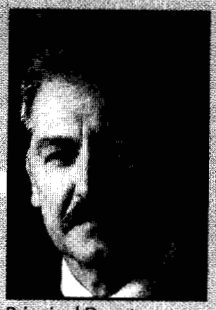
Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict
H. Allen Holmes

Director, Program Analysis and Evaluation
William J. Lynn III

continued on Page 6

Deputy Secretary of Defense
John M. Deutch

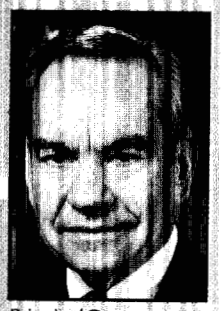
Under Secretary of Defense for Personnel and Readiness
Edwin Dorn



Principal Deputy Undersecretary for Personnel and Readiness
Albert V. Conte

Assistant Secretary of Defense for Command, Control, Communications and Intelligence
Emmett Paige Jr.

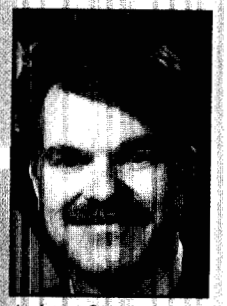
Under Secretary of Defense for Acquisition and Technology
Paul G. Kaminski



Principal Deputy Under Secretary of Defense for Acquisition and Technology
R. Noel Longuemare

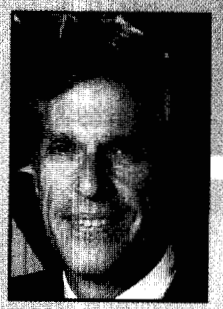
Assistant Secretary of Defense for Reserve Affairs
Deborah R. Lee

Director, Defense Research and Engineering
Anita K. Jones



Assistant Secretary of Defense for Economic Security
Joshua Gotbaum

Assistant Secretary of Defense for Health Affairs
Stephen C. Joseph



Assistant to the Secretary of Defense for Atomic Energy
Harold P. Smith Jr.

Deputy Under Secretary of Defense for Advanced Technology
Larry Lynn

continued on Page 7

Defense Advisor
U.S. Mission to NATO
vacant

Director, Net Assessment
Andrew W. Marshall

Deputy Comptroller for Financial Systems
Richard Keevey

Inspector General (Acting)
Derek J. Vander Schaaf

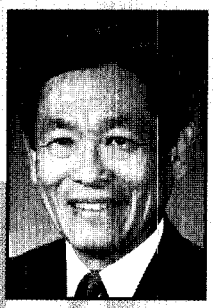
Assistant to the Secretary of Defense for Intelligence Oversight
Charles A. Hawkins Jr.

General Counsel
Judith A. Miller

Executive Secretary of the Department of Defense
Col. Robert P. McAleer, USMC

Counselor to the Secretary of Defense and Deputy Secretary of Defense
Larry K. Smith

Special Assistant to the Secretary of Defense and Deputy Secretary of Defense
Larry Cavaiola



Assistant Secretary of Defense for Force Management
Frederick F.Y. Pang

Deputy Under Secretary of Defense for Acquisition Reform
Colleen A. Preston

Deputy Under Secretary of Defense for Environmental Security
Sherri W. Goodman

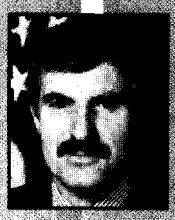
Deputy Under Secretary of Defense for Readiness
Louis C. Finch

Director, Small & Disadvantaged Business Utilization
Daniel R. Gill

Assistant Secretary of Defense for Legislative Affairs
Sandra K. Stuart

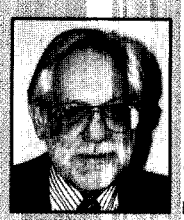
Assistant to the Secretary of Defense for Public Affairs
Kenneth Bacon

Director of Administration and Management
David O. Cooke



Special Assistant to the Secretary of Defense and Deputy Secretary of Defense
Robert Hall

Special Assistant to the Secretary of Defense and Deputy Secretary of Defense
Margaret Sullivan

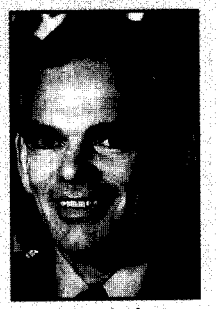


Director, Operational Test and Evaluation
Philip E. Coyle III

Defense Agencies

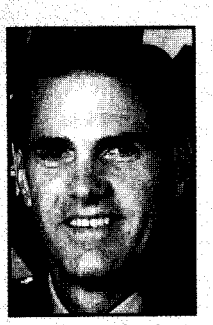
(As of Oct. 15, 1994)

Gary L. Denman
Director, Advanced Research Projects Agency



Lt. Gen. Malcolm R. O'Neill, USA
Director, Ballistic Missile Defense Organization

Annette J. Krygiel
Director, Central Imagery Office

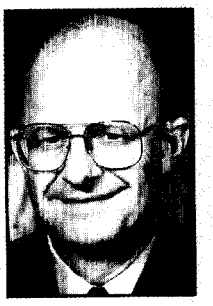


Maj. Gen. Richard E. Beale Jr., USA
Director, Defense Commissary Agency

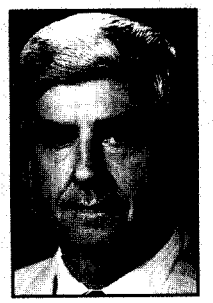
William H. Reed
Director, Defense Contract Audit Agency

John P. Springett
Director, Defense Finance and Accounting Service

Lt. Gen. Al Edmonds, USAF
Director, Defense Information Systems Agency



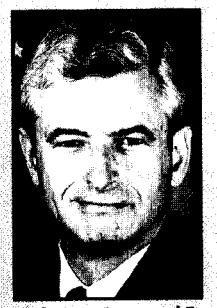
Lt. Gen. James R. Clapper Jr., USAF
Director, Defense Intelligence Agency



John F. Donnelly
Director, Defense Investigative Service

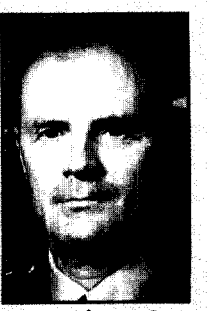
Judith A. Miller
Director, Defense Legal Services Agency

Vice Adm. Edward M. Straw, USN
Director, Defense Logistics Agency



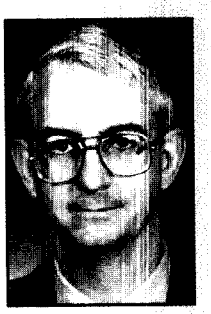
Maj. Gen. Raymund E. O'Mara, USAF
Director, Defense Mapping Agency

Maj. Gen. Kenneth L. Hagemann, USAF
Director, Defense Nuclear Agency



Lt. Gen. Thomas G. Rhame, USA
Director, Defense Security Assistance Agency

Vice Adm. John M. McConnell, USN
Director, National Security Agency/ Central Security Service

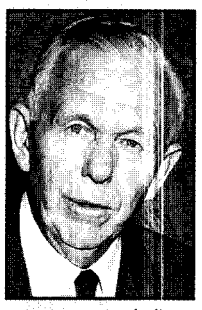


Brig. Gen. Gregory G. Govan, USA
Director, On-Site Inspection Agency

Secretaries of Defense
1947-Present

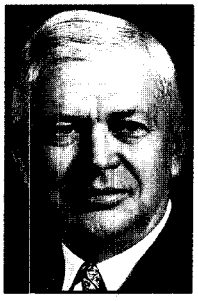
James V. Forrestal
Sept. 17, 1947-
March 27, 1949

Louis A. Johnson
March 28, 1949-
Sept. 19, 1950



George C. Marshall
Sept. 21, 1950-
Sept. 12, 1951

Robert A. Lovett
Sept. 17, 1951-
Jan. 20, 1953



Charles E. Wilson
Jan. 28, 1953-
Oct. 8, 1957

Neil H. McElroy
Oct. 9, 1957-
Dec. 1, 1959

Thomas S. Gates Jr.
Dec. 2, 1959-
Jan. 20, 1961

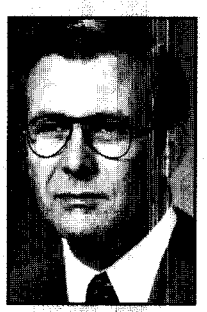
Robert S. McNamara
Jan. 21, 1961-
Feb. 29, 1968

Clark M. Clifford
March 1, 1968-
Jan. 20, 1969

Melvin R. Laird
Jan. 22, 1969-
Jan. 29, 1973

Elliot L. Richardson
Jan. 30, 1973-
May 24, 1973

James R. Schlesinger
July 2, 1973-
Nov. 19, 1975

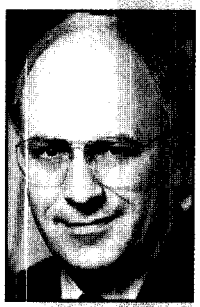


Donald H. Rumsfeld
Nov. 20, 1975-
Jan. 20, 1977

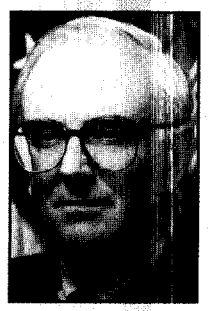
Harold Brown
Jan. 21, 1977-
Jan. 20, 1981

Caspar W. Weinberger
Jan. 21, 1981-
Nov. 23, 1987

Frank C. Carlucci
Nov. 24, 1987-
Jan. 20, 1989



Dick Cheney
March 21, 1989-
Jan. 20, 1993

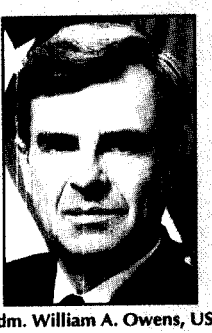


Les Aspin
Jan. 20, 1993-
Feb. 3, 1994

William J. Perry
Feb. 3, 1994-
Present

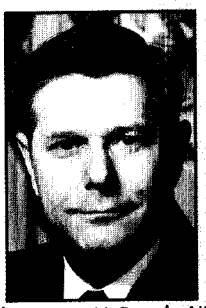
The Joint Chiefs of Staff
(As of Oct. 26, 1994)

Gen. John M. Shalikashvili, USA
Chairman

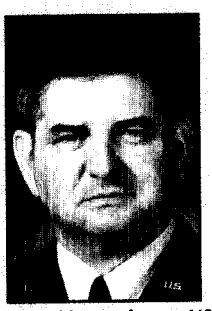


Adm. William A. Owens, USN
Vice Chairman

Gen. Gordon Sullivan, USA

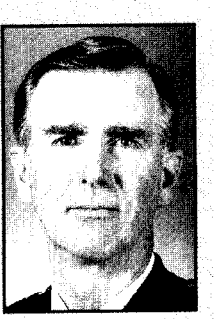


Adm. Jeremy M. Boorda, USN



Gen. Ronald R. Fogleman, USAF

Gen. Carl Mundy Jr., USMC



Lt. Gen. Walter Kross, USAF
Director, Joint Staff

Bradley

Radford

Twining

Lemnitzer

Taylor

Wheeler

Moorer

Brown

Jones

Vessey

Crowe

Powell

Shalikashvili

Chairmen of the Joint Chiefs of Staff
(1949-Present)

	From	To
General of the Army Omar N. Bradley, USA	August 16, 1949	August 15, 1953
Adm. Arthur W. Radford, USN	August 15, 1953	August 15, 1957
Gen. Nathan F. Twining, USAF	August 15, 1957	September 30, 1960
Gen. Lyman L. Lemnitzer, USA	October 1, 1960	September 30, 1962
Gen. Maxwell D. Taylor, USA	October 1, 1962	July 1, 1964
Gen. Earle G. Wheeler, USA	July 3, 1964	July 2, 1970
Adm. Thomas H. Moorer, USN	July 2, 1970	July 1, 1974
Gen. George S. Brown, USAF	July 1, 1974	June 20, 1978
Gen. David C. Jones, USAF	June 21, 1978	June 18, 1982
Gen. John W. Vessey Jr., USA	June 18, 1982	September 30, 1985
Adm. William J. Crowe Jr., USN	October 1, 1985	September 30, 1989
Gen. Colin L. Powell, USA	October 1, 1989	September 30, 1993
Gen. John M. Shalikashvili, USA	October 1, 1993	Present

Unified Commands

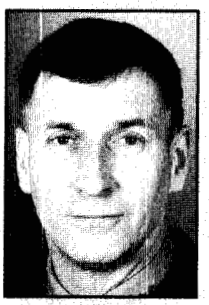
(As of Oct. 31, 1994)

Operational control of U.S. combat forces is assigned to the nation's unified commands. The chain of command runs from the president to the secretary of defense to the unified commanders in chief. Orders and other communications from the president or secretary are transmitted through the chairman of the Joint Chiefs of Staff. A unified command is composed of forces from two or more services, has a broad and continuing mission and is normally organized on a geographical basis. The number of unified commands is not fixed by law or regulation and may vary from time to time.

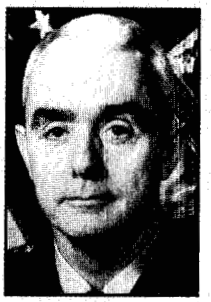
Commanders in Chief

U.S. European Command
Stuttgart-Vaihingen, Germany
Gen. George A. Joulwan, USA

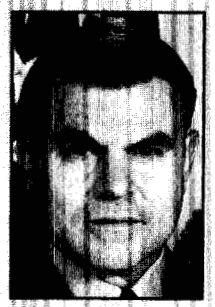
U.S. Pacific Command
Honolulu, Hawaii
Adm. R. C. Macke, USN



U.S. Atlantic Command
Norfolk, Va.
Gen. John J. Sheehan, USMC



U.S. Southern Command
Quarry Heights,
Republic of Panama
Gen. Barry R. McCaffrey, USA



U.S. Central Command
MacDill Air Force Base, Fla.
Gen. James Henry Binford Peay III, USA

U.S. Space Command
Peterson Air Force Base, Colo.
Gen. Joseph W. Ashy, USAF

U.S. Special Operations Command
MacDill Air Force Base, Fla.
Gen. Wayne A. Downing, USA

U.S. Transportation Command
Scott Air Force Base, Ill.
Gen. Robert L. Rutherford, USAF

U.S. Strategic Command
Offutt Air Force Base, Neb.
Adm. Henry G. Chiles, USN

DoD Field Activities

ACTIVITY	LOCATION
American Forces Information Service	Alexandria, Va.
Defense Medical Program Activity	Falls Church, Va.
Defense Prisoner of War/Missing in Action Office	Washington, D.C.
Defense Technology Security Administration	Arlington, Va.
Department of Defense Education Activity	Alexandria, Va.
DoD Civilian Personnel Management Service	Washington, D.C.
Office of Civilian Health and Medical Program of the Uniformed Services (OCHAMPUS)	Aurora, Colo.
Office of Economic Adjustment	Washington, D.C.
Washington Headquarters Services	Washington, D.C.

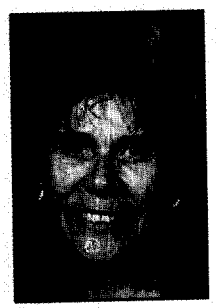
Department of the Army
(As of June 30, 1994)

Secretary of the Army
Togo D. West Jr.

Army Chief of Staff
Gen. Gordon R. Sullivan

Sergeant Major of the Army
SMA Richard A. Kidd

Department of the Air Force
(As of Oct. 26, 1994)



Secretary of the Air Force
Sheila E. Widnall

Air Force Chief of Staff
Gen. Ronald R. Fogleman

Chief Master Sergeant of the Air Force
CMSAF David J. Campanale

Major Army Commands

NAME	LOCATION OF HEADQUARTERS
Army Materiel Command	Alexandria, Va.
Corps of Engineers	Washington, D.C.
Criminal Investigation Command	Falls Church, Va.
Eighth U.S. Army	Seoul, Korea
Forces Command	Fort McPherson, Ga.
Medical Command	Fort Sam Houston, Tex.
Information Systems Command	Fort Huachuca, Ariz.
Intelligence and Security Command	Fort Belvoir, Va.
Military District of Washington	Fort Lesley J. McNair, D.C.
Military Traffic Management Command	Falls Church, Va.
Special Operations Command	Fort Bragg, N.C.
Training and Doctrine Command	Fort Monroe, Va.
U.S. Army Europe	Heidelberg, Germany
U.S. Army Japan	Camp Zama, Japan
U.S. Army Pacific	Fort Shafter, Hawaii
U.S. Army South	Fort Clayton, Panama

Major Air Commands

NAME	LOCATION OF HEADQUARTERS
Air Combat Command	Langley Air Force Base, Va.
Air Force Materiel Command	Wright-Patterson Air Force Base, Ohio
Air Force Space Command	Peterson Air Force Base, Colo.
Air Force Special Operations Command	Hurlburt Field, Fla.
Air Mobility Command	Scott Air Force Base, Ill.
Air Education and Training Command	Randolph Air Force Base, Texas
Pacific Air Forces	Hickam Air Force Base, Hawaii
U.S. Air Forces Europe	Ramstein Air Base, Germany

Coast Guard *(As of May 31, 1994)*

Commandant of the Coast Guard
Adm. Robert E. Kramek

Master Chief Petty Officer of the Coast Guard
MCPOCG Rick Trent

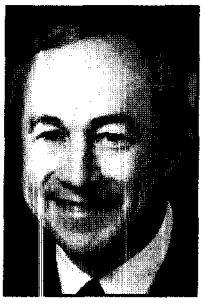
Major Coast Guard Commands

NAME	LOCATION OF HEADQUARTERS
Coast Guard Headquarters	Washington, D.C.
Atlantic Area	New York, N.Y.
Pacific Area	San Francisco, Calif.

There are also 10 Coast Guard Districts in the United States.

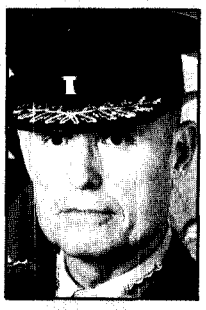
Department of the Navy

(As of June 30, 1994)



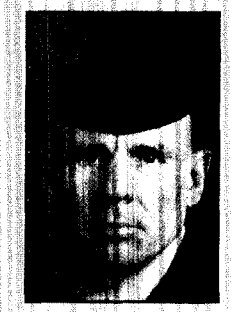
Secretary of the Navy
John H. Dalton

Chief of Naval Operations
Adm. Jeremy M. Boorda



Commandant of the Marine Corps
Gen. Carl E. Mundy Jr.

Master Chief Petty Officer of the Navy
MCPON John Hagan



Sergeant Major of the Marine Corps
SGTMAJ Harold G. Overstreet

Major Naval Operating Forces

NAME	LOCATION OF HEADQUARTERS
Pacific Fleet	Pearl Harbor, Hawaii
—Third Fleet	San Diego, Calif.
—Seventh Fleet	Yokosuka, Japan
Atlantic Fleet	Norfolk, Va.
—Second Fleet	Norfolk, Va.
U.S. Naval Forces, Europe	London, England
—Sixth Fleet	Gaeta, Italy
Military Sealift Command	Washington, D.C.
Naval Reserve Force	New Orleans, La.
Mine Warfare Command	Ingleside, Texas
Operational Test and Evaluation Force	Norfolk, Va.
Naval Forces Southern Command	Rodman, Panama
Naval Forces Central Command	Manama, Bahrain
Naval Special Warfare Command	Coronado, Calif.

Major Marine Corps Commands

NAME	LOCATION OF HEADQUARTERS
Fleet Marine Force, Atlantic	Camp Lejeune, N.C.
Fleet Marine Force, Pacific	Camp H.M. Smith, Hawaii
Marine Corps Combat Development Command	Quantico, Va.
Marine Corps Systems Command	Quantico, Va.
I Marine Expeditionary Force	Camp Pendleton, Calif.
II Marine Expeditionary Force	Camp Lejeune, N.C.
III Marine Expeditionary Force	Camp Butler, Okinawa
Marine Corps Air-Ground Combat Center	Twentynine Palms, Calif.
Marine Reserve Forces	New Orleans, La.

Naval Shore Establishments

Bureau of Medicine and Surgery	Washington, D.C.
Bureau of Naval Personnel	Washington, D.C.
Naval Air Systems Command	Washington, D.C.
Naval Data Automation Command	Washington, D.C.
Naval Doctrine Command	Norfolk, Va.
Naval Education and Training Command	Pensacola, Fla.
Naval Facilities Engineering Command	Alexandria, Va.
Naval Legal Service Command	Alexandria, Va.
Naval Meteorology and Oceanography Command	Bay St. Louis, Miss.
Naval Sea Systems Command	Washington, D.C.
Naval Security and Investigative Command	Washington, D.C.
Naval Security Group Command	Washington, D.C.
Naval Space Command	Dahlgren, Va.
Naval Supply Systems Command	Washington, D.C.
Naval Telecommunications Command	Washington, D.C.
Naval Intelligence Command	Washington, D.C.
Office of Naval Intelligence	Washington, D.C.
Space and Naval Warfare Systems Command	Washington, D.C.

(As of June 30, 1994)

Senate

DEMOCRATS

SAM NUNN, GEORGIA, CHAIRMAN
J. James Exon, Nebraska
Carl Levin, Michigan
Edward M. Kennedy, Massachusetts
Jeff Bingaman, New Mexico
John Glenn, Ohio
Richard C. Shelby, Alabama
Robert C. Byrd, West Virginia
Bob Graham, Florida
Charles S. Robb, Virginia
Joseph I. Lieberman, Connecticut

REPUBLICANS

Strom Thurmond, South Carolina
John W. Warner, Virginia
William S. Cohen, Maine
John McCain, Arizona
Trent Lott, Mississippi
Dan Coats, Indiana
Robert C. Smith, New Hampshire
Dirk Kempthorne, Idaho
D.M. (Lauch) Faircloth, North Carolina
Kay Bailey Hutchison, Texas

House of Representatives

DEMOCRATS

RON V. DELLUMS, CALIFORNIA, CHAIRMAN
G.V. (Sonny) Montgomery, Mississippi
Patricia Schroeder, Colorado
Earl Hutto, Florida
Ike Skelton, Missouri
Dave McCurdy, Oklahoma
Marilyn Lloyd, Tennessee
Norman Sisisky, Virginia
John M. Spratt Jr., South Carolina
Frank McCloskey, Indiana
Solomon P. Ortiz, Texas
George J. Hochbrueckner, New York
Owen B. Pickett, Virginia
H. Martin Lancaster, North Carolina
Lane Evans, Illinois
James H. Bilbray, Nevada
John S. Tanner, Tennessee
Glen Browder, Alabama
Gene Taylor, Mississippi
Neil Abercrombie, Hawaii
Thomas H. Andrews, Maine
Chet Edwards, Texas
Don Johnson, Georgia
Frank Tejeda, Texas
David S. Mann, Ohio
Bart Stupak, Michigan
Martin T. Meehan, Massachusetts
Robert A. Underwood, Guam
Jane Harman, California
Paul McHale, Pennsylvania
Tim Holden, Pennsylvania
Pete Geren, Texas
Elizabeth Furse, Oregon
Sam Farr, California

REPUBLICANS

Floyd Spence, South Carolina
Bob Stump, Arizona
Duncan Hunter, California
John R. Kasich, Ohio
Herbert H. Bateman, Virginia
James V. Hansen, Utah
Curt Weldon, Pennsylvania
Jon Kyl, Arizona
Arthur Ravenel Jr., South Carolina
Robert K. Dornan, California
Joel Hefley, Colorado
Ronald K. Machtley, Rhode Island
H. Jim Saxton, New Jersey
Randy Cunningham, California
James M. Inhofe, Oklahoma
Steve Buyer, Indiana
Peter G. Torkildsen, Massachusetts
Tillie Fowler, Florida
John M. McHugh, New York
James M. Talent, Missouri
Terry Everett, Alabama
Roscoe G. Bartlett, Maryland

(As of June 30, 1994)

Senate

DEMOCRATS

DANIEL K. INOUYE, HAWAII, CHAIRMAN
Ernest F. Hollings, South Carolina
J. Bennett Johnston, Louisiana
Robert C. Byrd, West Virginia
Patrick J. Leahy, Vermont
Jim Sasser, Tennessee
Dennis DeConcini, Arizona
Dale Bumpers, Arkansas
Frank R. Lautenberg, New Jersey
Tom Harkin, Iowa

REPUBLICANS

Ted Stevens, Alaska
Alfonse M. D'Amato, New York
Thad Cochran, Mississippi
Arlen Specter, Pennsylvania
Pete V. Domenici, New Mexico
Don Nickles, Oklahoma
Phil Gramm, Texas
Christopher (Kit) Bond, Missouri

House of Representatives

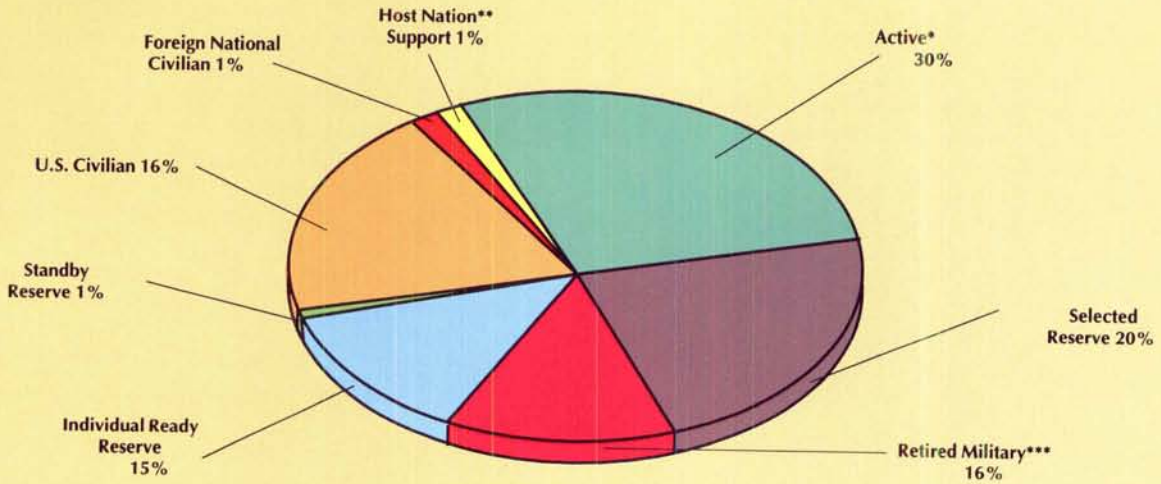
DEMOCRATS

JOHN P. MURTHA, PENNSYLVANIA, CHAIRMAN
Norman D. Dicks, Washington
Charles Wilson, Texas
W.G. (Bill) Hefner, North Carolina
Martin Olav Sabo, Minnesota
Julian C. Dixon, California
Peter J. Visclosky, Indiana
George Darden, Georgia

REPUBLICANS

Joseph M. McDade, Pennsylvania
C.W. Bill Young, Florida
Bob Livingston, Louisiana
Jerry Lewis, California
Joe Skeen, New Mexico

Partners in the Total Force
(FY 1995 estimated)

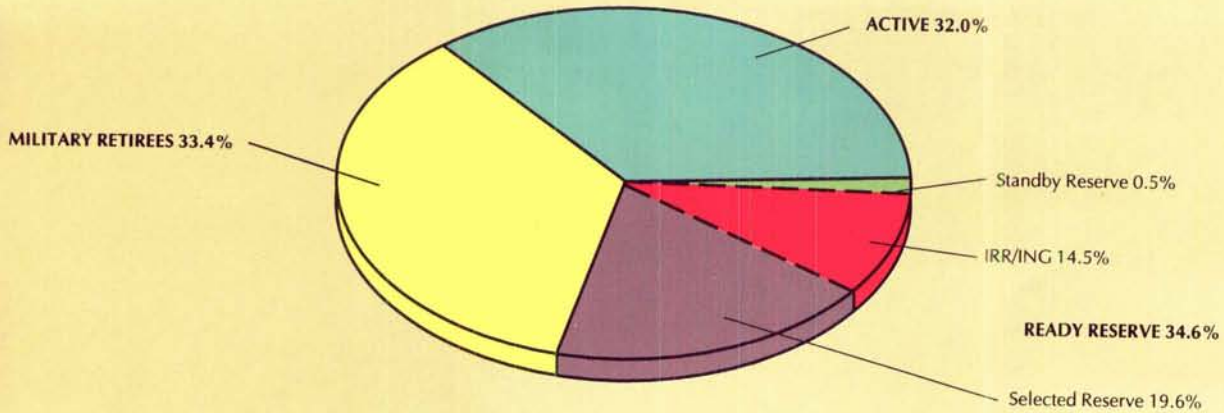


4.1 Million Military Personnel
0.9 Million Civilian Personnel

*Does not include the U.S. Coast Guard.
**Germany only; includes military and civilian personnel.
***Does not include disabled or above age 60.

SecDef Annual Report to Congress

Total Mobilization Personnel
(As of Sept. 30, 1993)



100% = 5,448,911 personnel

OASD(RA)

Contributions by Reserve Forces

The objective of DoD's Total Force Policy is to achieve the most cost-effective mix of active duty, reserve, civilian and contract personnel consistent with the requirements of peacetime deployments and responsiveness to war. The United States has always relied on the reserve forces that could be called to active duty or mobilized to deal with emergencies beyond the capabilities of our active forces. The reserve components constitute the initial and primary augmentation of active forces in any emergency requiring rapid expansion of those forces. Following is a list of the contributions made by each reserve component.

Army National Guard and Army Reserve units provide essential combat, combat support and combat service support units to the total Army.

Naval Reserve units are an integral part of most mission areas of the Navy. They include fleet logistics, maritime patrol, carrier and helicopter wings; mobile construction forces; surface combatants; operational and medical support units.

The Marine Reserve Force includes a reserve division, a reserve air wing and a reserve force service support group. These forces provide combat, combat support and combat service support capabilities which mirror the active component.

Air National Guard and Air Force Reserve units perform many combat and combat support missions, including counterair, interdiction, close air support, reconnaissance, strategic airlift, tactical airlift, aerial refueling, aeromedical evacuation, aerospace rescue and recovery, and special operations.

The Coast Guard Reserve augments the Coast Guard in all mission areas and provides the active component with specialized port security elements.

Contributions by the Army Reserve and Army National Guard to the Total Army

(As of Sept. 30, 1993)

UNIT TYPES	ARMY NATIONAL GUARD No. of Units	ARMY RESERVE No. of Units	COMBINED PERCENT Total Army
Training Divisions	0	12	100
Chemical Brigades	1	3	100
Water Supply Battalions	2	3	100
Enemy Prisoner of War Brigades	0	1	100
Theater Support Group	0	1	100
Heavy Helicopter Units	3	0	100
Judge Advocate General Units	4	137	100
Public Affairs Units	48	26	100
Theater Defense Brigades	3	1	100
Roundout/Roundup Brigades	7	0	100
Civil Affairs Units	0	36	97
Petroleum Support Battalions	6	6	86
Medical Brigades	3	9	86
Chemical Battalions	2	9	85
Training Brigades	0	3	83
Motor Battalions	9	14	79
Maintenance Battalions	20	17	76
Engineer Battalions (Combat Heavy)	14	17	76
Psychological Operations Units	0	37	75
Hospitals	22	50	73
Medical Groups	3	7	71
Separate Brigades	9	1	67
Petroleum Groups	0	2	67
Corps Support Groups	4	15	66
Field Artillery Battalions	90	10	62
Engineer Battalions (Combat)	29	16	58
Terminal Battalions	0	4	57
Military Police Battalions	9	7	57
Military Police Brigades	3	2	56
Medium Helicopter Battalions	4	2	55
Infantry Divisions	3	0	50
Corps Support Commands	1	2	50
Light Infantry Divisions	1	0	50
Area Support Groups	9	8	47
Attack Helicopter Battalions	21	3	46
Aviation Brigades	15	0	45
Special Forces Groups	2	2	44
Ordnance Battalions	0	5	42
Armor Divisions	2	0	40
Theater Army Area Commands	0	2	40
Signal Battalions	31	4	40
Air Assault Battalions	2	5	39
Infantry Divisions (Mech)	3	0	38
Military Intelligence Battalions	7	15	37
Armored Cavalry Regiments	1	0	33
Air Defense Brigades	3	0	33
Air Defense Battalions	12	0	30
Mechanized Divisions	2	0	30
Engineer Battalions (Topographical)	1	0	25

Army National Guard, Army Reserve, and Army (DAMO-FDF)

Contributions by the Naval Reserve To the Total Navy

(As of Sept. 30, 1993)

UNIT TYPES*	No. of Units	PERCENT NAVY
Mobile Inshore Undersea Warfare Units	28	100
Logistic Aircraft Squadrons (U.S. Based)	11	100
Naval Embarked Advisory Teams (NEAT)	7	100
Strike Rescue/Special Warfare Support Helo. Sq.	2	100
Mobile Inshore Undersea Warfare Groups	2	100
Fighter Composite/Service Squadrons (U.S. Based)	2	100
Heavy Logistics Support (C-130)	2	100
Naval Control of Shipping (Military Personnel)	27	99
Cargo Handling Battalions	12	93
Military Sealift Command (Personnel)	38	85
Mobile Construction Battalions	15	68
Intelligence Program (Personnel)	5,027	61

UNIT TYPES*	No. of Units	PERCENT NAVY
Mobile Diving & Salvage Units	14	60
Special Boat Units	4	57
Airborne Mine Countermeasures	2	53
Fleet Hospitals	7	48
Frigates (FFG-7s/FF-1052s)	24	40
LAMPS MK-I Anti-Submarine Warfare Squadrons	3	40
Naval Special Warfare Units	11	38
Mobile Mine Assembly Groups (MOMAG)	18	33
Explosive Ordnance Disposal Units	5	33
Carrier Air Wings	2	28
Maritime Patrol Squadrons	13	24
Amphibious Warfare Ships	2	15

*Percentages determined by counting like-type units or personnel.
Naval Reserve

Contributions by the Marine Corps Reserve To the Total Marine Corps

(As of Sept. 30, 1993)

UNIT TYPES*	No. of Units	PERCENT USMC
Civil Affairs Group	2	100
Air-Naval Gunfire Liaison Companies	2	50
Tank Battalions	2	50
Force Reconnaissance Companies	2	50
Infantry Regiments	3	27

AIRCRAFT TYPES**	No. of Units	PERCENT USMC
Marine Aircraft Wing	1	25
Marine Aerial Refueler Transport Squadron	2	50
Marine Wing Headquarters Squadron	1	25
Marine Aircraft Group	4	25
Adversary Squadron	1	100
Marine Observation Squadron	1	100
Marine Aviation Logistics Squadron	4	25
Marine Light Attack Helicopter Squadron	2	22
Marine Fighter/Attack Squadron	4	21
Marine Attack Squadron	2	16
Marine Medium Helicopter Squadron	2	11
Marine Heavy Helicopter Squadron	1	9

UNIT TYPES*	No. of Units	PERCENT USMC
Light Armored Infantry (LAI) Battalions	1	25
Engineer Support Battalions	1	25
Landing Support Battalions	1	25
Artillery Regiments	1	25

*Percentages determined by counting like-type units.

AIRCRAFT TYPES **	No. of Units	PERCENT USMC
Marine Air Control Group	1	25
Marine Wing Communications Squadron	1	25
Marine Tactical Air Control Squadron	1	25
Marine Air Support Squadron	1	25
Low Altitude Air Defense (LAAD) Battalion	1	25
Light Antiaircraft Missile (LAAM) Battalion	1	25
Marine Air Traffic Control Detachment	1	25
Marine Air Control Squadron	1	14
Marine Wing Support Group	1	25
Headquarters and Headquarters Squadron	1	25
Marine Wing Support Squadron	4	25

**Percentages determined by counting primary authorized aircraft.
Marine Corps Reserve

Contributions by the Air National Guard and Air Force Reserve to the Total Air Force

(As of Sept. 30, 1993)

UNIT TYPES	AIR NATIONAL GUARD: TOTAL NUMBER OF UNITS	AIR FORCE RESERVE: TOTAL NUMBER OF UNITS	COMBINED PERCENT OF TOTAL AIR FORCE
FLYING UNITS			
Aircraft*			
Weather Reconnaissance	0	10	100
Aerial Spraying	0	8	100
Strategic Interceptor Force (U.S. based)	234	0	100
Tactical Reconnaissance	72	0	100
Tactical Airlift	174	96	61
Air Rescue/Recovery	24	25	57
Aerial Refueling/Strategic Tankers	172	50	45
Tactical Air Support	30	18	40
Tactical Fighters	728	219	37
Strategic Airlift	27	60	25
Special Operations	6	14	16
Support Aircraft	54	0	15

*Percentages determined by counting primary authorized aircraft.

Aircrews**			
Aeromedical Evacuation	1,226	4,147	97
Strategic Airlift (Associate)	0	4,657	50
Tanker/Cargo (Associate)	0	1,381	43
Aeromedical Evacuation (Associate)	0	237	30

**Percentages determined by counting authorized personnel.

NON-FLYING UNITS			
Engineering Installation	19	0	78
Aerial Port	23	68	75
Combat Communications	47	0	71
Aircraft Control & Warning	4	0	62
Tactical Control	37	0	62
Combat Logistics Support Squadrons	0	6	59
Reconnaissance (Technical)	2	0	56
Civil Engineering***	98	54	45
Weather	34	0	41
Strategic Airlift Maintenance (Associate)	0	34	40
Security Police	89	42	25
Medical****	92	91	22
Communications Squadrons	0	34	6
Electronic Security	1	2	2

***Includes Red Horse units.
****Excludes aeromedical evacuation personnel.
Air National Guard and Air Force Reserve

Contributions by the Coast Guard Reserve To the Total Coast Guard

(As of Sept. 30, 1993)

UNIT TYPES*	No. of Billets	PERCENT USCG
Deployable Port Security Units	351	100
Marine Safety Office	2,556	43
Operational Shore Facilities	1,327	39
Command & Control	1,896	23
Small Boat Stations	1,178	23
Vessels	271	3
Repair/Supply/Research	87	3

*Percentages determined by counting mobilization billets.
Coast Guard Reserve

Support to Counterdrugs Financial Summary

($ in millions—Budget Authority)

The National Drug Control Strategy underwent major policy revisions in the past year. In response to direction from the secretary of defense, a Counterdrug Comprehensive Review was conducted in July 1993 to review the operational impact and focus of the DoD counterdrug program. The review also fully considered and responded to the new national strategy that was being finalized at that time by the Office of National Drug Control Policy.

The president's 1994 National Drug Control Strategy emphasizes demand reduction and calls for a gradual shift of resources to reflect a renewed, refocused commitment to supply reduction within the source nations while maintaining a flexible, efficient transit zone interdiction capability. As a result, the department's counterdrug program is strategy oriented, implementing the following five critical strategic elements.

FUNCTIONAL CATEGORY	FY93 Actual	FY94 Estimated	FY95* Requested
Dismantling Cartels Support	76.2	47.5	59.0
Source Nation Support	180.9	147.5	149.1
Detection & Monitoring In Transit	405.4	276.5	254.6
Drug Law Enforcement Agencies	378.1	311.8	322.5
Demand Reduction	100.1	84.9	89.0
Total	1,140.7	868.2	874.2

*Fiscal 1995 request includes $160 million counterdrug operations tempo reflected in services' budgets.
Coordinator for Drug Enforcement Policy and Support

Money

The Defense Budget

Budget authority is the authority permitted by federal law to incur financial obligations that will result in outlays. Outlays are a measure of government spending. They represent payments to liquidate obligations, usually by issuing checks or disbursing cash.

There was no fiscal 1994-95 biennial budget because the incoming administration barely had time to make needed changes in the first year of the defense plan left by the previous administration.

The fiscal 1995 budget begins implementation of the department's Future Years Defense Program, covering fiscal 1995-99. The fiscal year 1995 DoD budget request is $252.2 billion in budget authority and $259.2 billion in outlays.

Figures reflect the president's budget transmitted to Congress in January 1994.

DoD's Slice of the Dollar

	DEFENSE OUTLAYS AS A PERCENTAGE OF		
FISCAL YEAR	GROSS DOMESTIC PRODUCT*	FEDERAL OUTLAYS	NET PUBLIC SPENDING**
1960	8.2	45.0	30.3
1965	6.8	38.8	25.2
1970	7.8	39.4	25.5
1975	5.6	25.5	16.5
1980	5.0	22.5	15.3
1981	5.3	23.0	15.8
1982	5.9	24.5	16.7
1983	6.2	25.4	17.3
1984	6.0	25.9	17.5
1985	6.2	25.9	17.6
1986	6.3	26.8	17.9
1987	6.2	27.3	17.6
1988	5.9	26.5	17.0
1989	5.7	25.8	16.5
1990	5.3	23.1	14.8
1991	4.7	19.8	12.6
1992	4.9	20.8	13.3
1993	4.4	17.9	12.2
1994	4.0	18.0	11.5

*Data reflects the federal government's shift to gross domestic product from gross national product for measuring total purchases of goods and services.
**Federal, state and local net spending excluding government enterprises (such as the U.S. Postal Service and public utilities) except for any support these activities receive from tax funds.
SecDef Annual Report to Congress

Breakout of the Budget

(Current $ in billions)

	BUDGET AUTHORITY		
APPROPRIATION TITLE	FY 1993 ACTUAL	FY 1994 ESTIMATE	FY 1995 ESTIMATE
Military Personnel (includes retired pay)	75,974	70,773	70,475
Operation and Maintenance	89,172	87,972	92,884
Procurement	52,789	44,454	43,274
Research, Development, Test and Evaluation	37,974	34,782	36,225
Military Construction	4,554	5,963	5,049
Family Housing	3,941	3,501	3,307
Defensewide Contingency Revolving and Management Funds	4,503	2,237	1,628
Trust and Receipts	-435	-605	-585
Deduct, Intragov't. Receipt	-1,069	-110	-105
Total	**267,402**	**248,966**	**252,153**

SecDef Annual Report to Congress

DoD's Budget by Component

(Current $ in millions)

	BUDGET AUTHORITY		
	FY 1993** ACTUAL	FY 1994 ACTUAL	FY 1995 ESTIMATE
Department of the Army*	64,803	60,614	60,839
Department of the Navy*	83,198	77,133	78,375
Department of the Air Force*	79,146	73,704	74,492
Defense Agencies/OSD/JCS	22,158	19,567	22,188
Defensewide	18,097	17,948	16,258
Total	267,402	248,966	252,153

*Figures include retired pay accrual.
**In fiscal 1992, $9.1 billion was shifted from the military services to defense agencies/OSD for the new Defense Health Program. In fiscal 1993, that program began being reflected in the defensewide line.
SecDef Annual Report to Congress

DoD's Budget for Research, Development, Test and Evaluation

($ in thousands)

	TOTAL OBLIGATIONAL AUTHORITY		
	FY 1993 ACTUAL	**FY 1994 ESTIMATE**	**FY 1995 ESTIMATE**
BY COMPONENT			
Army	6,057,072	5,421,346	5,260,082
Navy	8,867,441	8,301,286	8,934,718
Air Force	12,866,924	12,258,662	12,349,362
Defense Agencies	9,764,807	8,710,050	9,416,855
Defense Test and Evaluation	259,021	231,757	251,495
Defense Operational Test and Evaluation	12,333	11,450	12,501
Total	**37,827,598**	**34,934,551**	**36,225,013**
BY RESEARCH AND DEVELOPMENT CATEGORY			
Basic Research	1,314,079	1,204,983	1,255,199
Exploratory Development	3,549,022	2,743,331	2,983,717
Advanced Development	6,282,318	6,155,127	5,117,395
Demonstration and Validation	4,211,722	2,697,665	3,770,649
Engineering and Manufacturing Development	8,486,601	7,441,099	8,916,042
RDT&E Management Support	3,397,818	3,217,934	3,342,746
Operational Systems Development	10,586,038	11,474,412	10,869,265
Total	**37,827,598**	**34,934,551**	**36,225,013**
BY FUTURE-YEAR DEFENSE PROGRAMS			
Strategic Forces	358,767	288,855	319,768
General Purpose Forces	2,689,413	3,723,102	3,975,323
Intelligence and Communications	7,034,838	6,820,286	6,140,561
Airlift/Sealift	12,198	22,459	5,160
Research and Development (FYDP Program 6)	27,211,345	23,458,356	25,506,979
Central Supply and Maintenance	265,963	330,567	51,068
Training, Medical and Other	100	1,915	1,526
Administration and Associated Activities	15,955	5,775	5,655
Support of Other Nations	3,522	1,909	3,436
Special Operations Forces	235,497	281,327	215,537
Total	**37,827,598**	**34,934,551**	**36,225,013**

DoD Comptroller

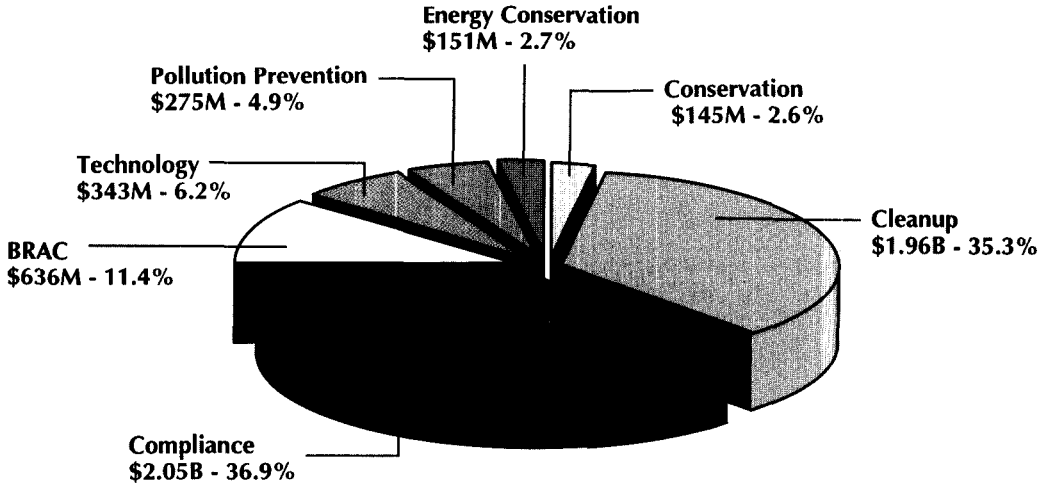
Procurement Dollars

($ in millions)

	TOTAL OBLIGATIONAL AUTHORITY		
	FY 1993 ACTUAL	FY 1994 ESTIMATE	FY 1995 ESTIMATE
ARMY			
Aircraft	1,378.1	1,327.6	1,041.6
Missiles	1,000.5	1,046.0	594.0
Weapons, Tracked Combat Vehicles	906.2	887.2	919.8
Ammunition	1,007.8	735.4	844.6
Other	3,060.9	2,888.6	2,690.2
Total	**7,353.6**	**6,884.8**	**6,090.2**
NAVY			
Aircraft	5,391.1	5,565.1	4,786.3
Weapons	3,629.8	2,975.6	2,400.0
Shipbuilding & Conversion	5,807.9	4,133.8	5,585.4
Other	5,217.4	2,983.0	3,319.4
Marine Corps	823.1	440.2	554.6
Total	**20,869.3**	**16,097.8**	**16,645.7**
AIR FORCE			
Aircraft	9,907.4	6,605.0	6,747.6
Weapons	4,223.9	3,859.9	4,392.2
Other	7,546.8	7,646.8	7,078.3
Total	**21,678.0**	**18,111.7**	**18,218.0**
OTHER			
Defense Agencies	2,085.4	1,803.6	1,744.9
National Guard & Reserve Equipment	1,306.3	1,200.0	—
Chemical Agents and Munitions Destruction	518.6	389.9	575.3
Defense Production Act	—	200.0	—
Total	**3,910.3**	**3,593.5**	**2,320.2**
TOTAL DoD PROCUREMENT	**53,811.2**	**44,687.8**	**43,274.3**

DoD Comptroller

DoD Environmental Programs (FY 1994)



SecDef Annual Report to Congress

Top Defense Contractors

The 100 companies (including their subsidiaries) receiving the largest dollar volume of prime contract awards from the Department of Defense during fiscal 1993.

NAME	$ IN THOUSANDS
1. McDonnell Douglas Corp.	7,539,806
2. Lockheed Corp.	6,910,871
3. Martin Marietta Corp.	4,727,071
4. General Motors Corp.	4,075,618
5. Raytheon Co.	3,232,856
6. United Technologies Corp.	3,083,185
7. Northrop Corp.	3,004,238
8. General Dynamics Corp.	2,146,816
9. Loral Corp.	1,729,230
10. Grumman Corp.	1,705,363
11. Boeing Co., The	1,664,421
12. General Electric Co.	1,605,616
13. Westinghouse Electric Corp.	1,569,528
14. Litton Industries Inc.	1,554,889
15. National Steel & Shipbuilding Co.	1,398,037
16. Rockwell International Corp.	1,316,610
17. TRW Inc.	1,160,499
18. Bath Holding Corp.	997,183
19. Texas Instruments Inc.	967,934
20. Textron Inc.	954,890
21. Tenneco Inc.	906,097
22. American Telephone & Telegraph Co.	870,480
23. International Business Machines Corp.	849,136
24. Foundation Health Corp.	817,832
25. Science Applications International Corp.	786,411
26. E-Systems Inc.	753,704
27. Unisys Corp.	716,719
28. GTE Corp.	713,981
29. ITT Corp.	614,184
30. Alliant Techsystems Inc.	612,014
31. Avondale Industries Inc.	587,224
32. FMC Corp.	508,211
33. Tracor Inc.	492,879
34. Dyncorp	491,889
35. Bell Boeing, Joint Venture	472,224
36. Allied Signal Inc.	453,540
37. Teledyne Inc.	435,362
38. Mitre Corp.	431,929
39. Computer Sciences Corp.	422,134
40. Exxon Corp.	418,513
41. Renco Group Inc.	398,045
42. Black & Decker Corp.	382,307
43. Harris Corp.	377,510
44. Olin Corp.	368,559
45. Massachusetts Institute of Technology	365,694
46. Oshkosh Truck Corp.	361,662
47. Johnson Controls Inc.	353,629
48. Royal Dutch Shell Group of Companies	351,504
49. Coastal Corp.	339,477
50. Chevron Corp.	320,995

NAME	$ IN THOUSANDS
51. BDM Holdings Inc.	312,105
52. Aerospace Corp.	301,094
53. Gencorp Inc.	298,786
54. Boeing Sikorsky Comanche Team, Joint Venture	298,743
55. Motorola Inc.	280,399
56. Chrysler Corp.	258,714
57. Halliburton Co.	252,781
58. Johns Hopkins University	239,043
59. Honeywell Inc.	234,863
60. Logicon Inc.	226,527
61. Booz Allen & Hamilton Inc.	209,527
62. CFM International Inc.	204,830
63. Machines Bull (Cie Des)	202,876
64. Philips Electronics NV	200,882
65. Stewart & Stevenson Services Inc.	195,784
66. Hercules Inc.	194,826
67. Draper Charles Stark Lab Inc.	193,795
68. EG&G Inc.	189,795
69. General Electric Co. PLC	187,340
70. Federal Express Corp.	185,263
71. Eaton Corp.	176,988
72. Thiokol Corp.	174,481
73. Ceridian Corporation	168,118
74. Forstmann Little & Co.	164,900
75. Mobil Oil Corp.	163,922
76. ESCO Electronics Corp.	163,013
77. Atlantic Richfield Company	161,687
78. CSX Corp.	160,868
79. Bombardier Inc.	154,089
80. Government Technology Services	146,216
81. Maersk Inc.	140,766
82. Gold Line Refining Ltd.	140,198
83. Montedison SPA	138,809
84. CAE Industries Inc.	138,411
85. Barrett Refining Corp.	133,682
86. Ogden Corp.	130,898
87. Sverdrup Corp.	130,174
88. UNC Inc.	129,097
89. Astronautics Corp. of America	128,235
90. International Technology Corp.	125,188
91. Hewlett-Packard Co.	118,613
92. Kaman Corp.	118,567
93. Gulfstream Aerospace Corp.	117,944
94. Jacobs Engineering Group Inc.	116,696
95. Computer Sciences Raytheon, Joint Venture	116,354
96. Battelle Memorial Institute	115,560
97. Israel Aircraft Industries Ltd.	114,798
98. Fluor Corp.	114,650
99. Exide Electronics Corp.	114,624
100. Holly Corp.	113,871

Where Military Dollars Are Spent

(FY 1993 Estimated)

($ in thousands)

State	PERSONNEL COMPENSATION					PRIME CONTRACT AWARDS		
	Civilian Pay	Military Active Duty Pay	Reserve & National Guard Pay	Retired Military Pay	Total Compensation	Civil Functions Contracts	Military Functions Contracts	Total Contracts
Alabama	939,465	584,943	161,339	634,381	2,320,128	55,239	1,689,074	1,744,313
Alaska	222,408	870,564	20,425	83,934	1,197,331	3,474	550,857	554,331
Arizona	281,057	551,205	58,446	672,951	1,563,659	17,539	2,575,839	2,593,378
Arkansas	142,477	166,594	53,764	319,912	682,747	47,844	281,316	329,160
California	4,252,867	6,180,809	310,838	3,413,016	14,157,530	124,261	22,827,704	22,951,965
Colorado	435,464	974,972	116,112	683,301	2,209,849	2,039	2,617,700	2,615,661
Connecticut	185,032	257,075	29,008	152,290	623,405	4,755	2,889,883	2,894,638
Delaware	52,612	110,226	30,132	81,642	274,612	2,798	132,803	135,601
District of Columbia	723,717	541,908	37,300	50,390	1,353,315	59,202	1,632,357	1,691,559
Florida	1,113,309	2,403,334	128,379	2,692,993	6,338,015	371,998	6,113,991	6,485,989
Georgia	1,109,435	1,940,082	209,511	943,355	4,202,383	60,014	3,957,504	4,017,518
Hawaii	730,966	1,393,828	39,129	214,800	2,378,723	7,291	623,730	631,021
Idaho	35,731	128,342	25,004	125,963	315,040	3,130	64,354	67,484
Illinois	653,687	694,660	126,578	391,248	1,866,173	108,737	1,250,684	1,359,421
Indiana	575,136	129,467	212,924	238,105	1,155,632	9,772	1,751,432	1,761,204
Iowa	48,558	14,339	47,954	103,861	214,712	30,231	333,269	363,500
Kansas	213,537	629,541	90,748	243,514	1,177,340	20,523	638,132	658,655
Kentucky	438,127	1,064,803	73,065	268,422	1,844,417	39,783	807,308	847,091
Louisiana	285,548	591,977	103,064	365,647	1,346,236	232,252	1,322,351	1,554,603
Maine	303,921	171,135	23,235	143,677	641,968	964	1,108,897	1,109,861
Maryland	1,645,350	909,265	115,252	664,598	3,334,465	27,184	3,965,172	3,992,356
Massachusetts	402,544	214,097	120,932	268,236	1,005,809	28,033	5,907,617	5,935,650
Michigan	379,064	147,388	90,638	266,818	883,908	31,177	1,304,724	1,335,901
Minnesota	97,382	32,849	83,549	163,616	377,396	51,229	1,445,895	1,497,124
Mississippi	377,223	424,336	71,015	294,872	1,167,446	103,099	1,472,288	1,575,387
Missouri	524,291	468,782	113,965	405,613	1,512,651	50,215	5,555,669	5,605,884
Montana	39,523	109,782	20,624	82,779	252,708	1,887	77,308	79,195
Nebraska	125,114	304,330	28,388	167,827	625,659	27,167	274,897	302,064
Nevada	65,628	216,972	13,408	304,533	600,541	9,429	226,420	235,849
New Hampshire	51,301	27,167	16,012	136,597	231,077	2,080	393,984	396,064
New Jersey	1,026,145	296,156	104,017	306,661	1,732,979	54,568	2,546,263	2,600,831
New Mexico	332,719	409,924	23,384	299,542	1,065,569	7,897	801,849	809,746
New York	598,314	718,454	178,673	396,404	1,891,845	20,731	4,620,694	4,641,425
North Carolina	539,146	2,588,361	97,524	877,658	4,102,689	26,017	1,186,465	1,212,482
North Dakota	54,673	223,413	19,488	35,868	333,442	4,567	167,477	172,044
Ohio	1,252,272	400,301	121,093	475,137	2,248,803	21,814	3,423,826	3,445,640
Oklahoma	639,377	822,600	87,326	417,805	1,967,108	11,187	622,605	633,792
Oregon	96,972	32,096	48,058	274,342	451,468	56,833	105,002	161,835
Pennsylvania	1,586,249	246,646	235,885	565,481	2,634,261	100,840	2,867,390	2,968,230
Rhode Island	175,615	165,015	17,660	88,102	446,392	2,637	387,056	389,693
South Carolina	570,325	1,245,224	96,597	670,444	2,582,590	30,917	698,635	729,552
South Dakota	38,097	147,532	18,150	57,321	261,100	11,452	84,654	96,106
Tennessee	240,543	198,785	98,902	519,467	1,057,697	32,038	905,288	937,326
Texas	1,588,187	2,541,417	240,838	2,549,106	6,919,548	104,727	8,905,546	9,010,273
Utah	652,755	158,113	65,324	146,743	1,022,935	7,428	534,944	542,372
Vermont	19,383	5,414	18,639	38,824	82,260	380	62,355	62,735
Virginia	4,561,365	4,941,609	119,061	2,076,454	11,698,489	66,584	7,416,164	7,482,748
Washington	1,010,211	1,242,312	119,212	959,862	3,331,597	66,178	1,824,499	1,890,677
West Virginia	54,061	15,302	36,931	109,795	216,089	44,930	87,263	132,193
Wisconsin	101,886	38,966	121,836	165,283	427,971	20,537	824,951	845,488
Wyoming	30,673	89,133	11,804	48,830	180,440	580	57,224	57,804
Total U. S.	31,619,442	38,781,545	4,451,140	25,658,020	100,510,147	2,222,110	111,923,309	114,145,419
Guam	147,428	279,188	1,579	22,383	450,578	—	190,870	190,870
Puerto Rico	81,957	79,875	37,768	67,789	267,389	5,969	270,018	275,987
Other U.S. Possessions	24,259	60,437	88	4,527	89,311	9,974	172,390	182,364
Sub Total	253,644	419,500	39,435	94,699	807,278	15,943	633,278	649,221
Grand Total	31,873,086	39,201,045	4,490,575	25,752,719	101,317,425	2,238,053	112,556,587	114,794,640

WHS

People

Active Duty
(As of Sept. 30, 1993)

Army	572,423
Navy	509,950
Marine Corps	178,379
Air Force	444,351
Total DoD	**1,705,103**
Coast Guard	37,926*

*Coast Guard figures as of May 31, 1994.
WHS

Guard & Reserve
(As of Sept. 30, 1993)

Army	1,131,670
Navy	302,387
Marine Corps	111,604
Air Force	321,243
Total DoD	**1,866,904**
Coast Guard	8,000*

*Coast Guard figures as of May 31, 1994.
WHS

Civilian Employees*
(As of Sept. 30, 1993)

Army	295,032
Navy	285,934**
Air Force	201,991
Other	152,918
Total DoD	**935,875**
Coast Guard	6,169***

*Figures are for direct and indirect hire.
**Includes Marine Corps civilian personnel.
***Coast Guard figures as of May 31, 1994.
WHS

Officer, Enlisted Totals
(As of Sept. 30, 1993)

	ARMY	NAVY	MARINE CORPS	AIR FORCE	TOTAL DoD	Coast Guard
Officers	87,845	66,346	18,430	84,073	256,694	7,750
Enlisted	480,379	439,461	159,949	356,126	1,435,915	29,503
Academy Cadets	4,199	4,143*	—	4,152	12,494	673
Total	**572,423**	**509,950**	**178,379**	**444,351**	**1,705,103**	**37,926****

*Excludes other naval officer candidates.
**Coast Guard figures as of May 31, 1994.
WHS

Enlisted Skills and Specialties
(As of April 30, 1994)
(Unofficial figures below are compiled for analytical purposes only.)

SKILL/SPECIALTY	NUMBER
Electrical/Mechanical Equipment Repair	279,161
Combat	231,138
Administration and Clerks	222,910
Electronic Equipment Repair	135,112
Communications and Intelligence	129,712
Supply and Service Handlers	120,287
Health Care Specialists	90,910
Craftsmen	57,908
Other Technical	33,954
Other	85,074
Total	**1,386,166**

DMDC

Active Duty People by Function

(End Strength in Thousands)

	FY 1993 ACTUAL	FY 1994 ESTIMATE	FY 1995 ESTIMATE
MAJOR FORCE MISSIONS:	**1,094.1**	**1,037.3**	**974.5**
Strategic Forces			
Strategic Offensive	60.0	52.1	41.2
Strategic Defensive	6.0	5.7	5.7
Strategic Command, Control, Communications	7.7	6.9	6.5
Industrial and Stock Fund	0.0	0.0	0.0
Total	**73.6**	**64.8**	**53.5**
General Purpose Forces			
Land Forces	465.2	447.3	424.2
Tactical Air Forces	191.8	178.4	165.7
Naval Forces	274.1	257.0	243.6
Mobility Forces	62.5	60.6	58.1
Special Operations Forces	26.7	28.8	29.2
General Purpose Support	0.1	0.1	0.2
Theater Missile Defense	0.0	0.0	0.0
Counterdrug Support	0.1	0.1	0.1
Total	**1,019.3**	**972.3**	**920.1**
DEFENSEWIDE MISSIONS:	**109.6**	**110.4**	**107.2**
Intelligence/Communications			
Intelligence	36.8	38.2	38.2
Communications	32.5	32.6	30.4
Total	**69.2**	**70.7**	**68.5**
General Research and Development			
Science and Technology Program	3.3	3.3	3.3
Undistributed Development	0.0	0.0	0.0
Research, Development, Test and Evaluation/Management and Support	15.3	15.1	14.5
Total	**18.6**	**18.4**	**17.9**
Other Defensewide Missions			
Geophysical Sciences	10.5	9.5	9.3
Space Launch Support	2.2	2.2	2.2
Nuclear Weapons Support	0.5	0.3	0.4
International Support	8.8	8.9	8.9
Total	**21.7**	**21.2**	**20.8**
DEFENSEWIDE SUPPORT MISSIONS:	**502.8**	**464.2**	**444.9**
Logistical Support			
Supply Operations	5.0	5.9	4.9
Maintenance Operations	4.8	4.0	3.3
Other Logistical Support	19.3	18.7	17.3
Total	**29.2**	**28.6**	**25.3**
Personnel Support			
Personnel Acquisitions	45.3	44.0	42.2
Training	236.8	211.1	205.1
Medical	97.4	93.5	92.7
Individuals	55.8	48.6	42.0
Federal Agency Support	1.6	1.8	1.8
Other Personnel Support	7.6	7.3	7.0
Total	**444.6**	**406.4**	**390.8**
Other Centralized Support			
Departmental Headquarters	29.1	29.2	28.6
Retired Pay	0.0	0.0	0.0
Undistributed Adjustments	0.0	0.0	0.0
Total	**29.1**	**29.2**	**28.6**
TOTAL END STRENGTH IN BUDGET	**1,705.1**	**1,611.2**	**1,526.7**

OUSD (P&R)

Where They Serve

(As of Sept. 30, 1993)

Countries with less than 100 assigned U.S. military members are listed as Other.

	ARMY	NAVY	MARINE CORPS	AIR FORCE	TOTAL DoD
United States, U.S. Territories, Special Locations					
Continental United States	396,747	256,841	134,104	339,550	1,127,242
Alaska	9,548	1,676	50	10,741	22,015
Hawaii	18,831	11,272	8,147	4,708	42,958
Guam	56	4,813	66	2,489	7,424
Johnston Atoll	257	—	—	11	268
Puerto Rico	284	3,272	146	37	3,739
Transients	10,636	11,367	6,711	9,813	38,527
Other	33	33	—	21	87
Afloat	—	154,387	436	—	154,823
Total	**436,392**	**443,661**	**149,660**	**367,370**	**1,397,083**
Europe					
Belgium	1,192	103	33	480	1,808
Germany	87,030	313	144	17,767	105,254
Greece	18	227	73	489	807
Greenland	—	—	—	131	131
Iceland	1	1,718	91	1,068	2,878
Italy	3,166	4,945	159	2,063	10,333
Netherlands	569	19	13	1,625	2,226
Norway	32	36	20	108	196
Portugal	32	172	8	1,108	1,320
Spain	17	3,190	136	477	3,820
Turkey	342	25	19	3,663	4,049
United Kingdom	305	1,892	242	13,661	16,100
Other	62	38	201	58	359
Afloat	—	14,985	1,983	—	16,968
Total	**92,766**	**27,663**	**3,122**	**42,698**	**166,249**
Russia and Eurasia					
Other	15	4	44	7	70
Afloat	—	—	—	—	—
Total	**15**	**4**	**44**	**7**	**70**
East Asia and Pacific					
Australia	11	52	12	264	339
Japan	1,961	7,247	21,520	15,403	46,131
Republic of Korea	25,316	315	59	9,140	34,830
Singapore	4	112	8	38	162
Thailand	45	11	18	32	106
Other	55	95	105	49	304
Afloat	—	15,281	1,869	—	17,150
Total	**27,392**	**23,113**	**23,591**	**24,926**	**99,022**
North Africa, Near East and South Asia					
Bahrain	11	343	16	9	379
Diego Garcia	7	1,109	93	24	1,233
Egypt	493	33	34	45	605
Kuwait	211	7	12	3	233
Saudi Arabia	655	51	56	188	950
Other	71	23	135	58	287
Afloat	—	7,803	—	—	7,803
Total	**1,448**	**9,369**	**346**	**327**	**11,490**
Sub-Saharan Africa					
Somalia	6,017	—	315	13	6,345
Other	47	8	242	15	312
Afloat	—	207	—	—	207
Total	**6,064**	**215**	**557**	**28**	**6,864**

continued

	ARMY	NAVY	MARINE CORPS	AIR FORCE	TOTAL DoD
Western Hemisphere					
Bermuda	1	521	5	—	527
Canada	17	417	11	102	547
Cuba (Guantanamo)	—	1,751	436	2	2,189
Honduras*	626	2	13	55	696
Panama	7,550	513	187	2,292	10,542
Other	124	137	235	63	559
Afloat	—	2,526	172	—	2,698
Total	**8,318**	**5,867**	**1,059**	**2,514**	**17,758**
Antarctica					
Other	—	58	—	—	58
Total	**0**	**58**	**0**	**0**	**58**
Undistributed					
Ashore	28	—	—	6,481	6,509
Total	**28**	—	—	**6,481**	**6,509**
Foreign Countries					
Ashore*	136,031	25,487	24,695	76,981	263,194
Afloat	—	40,802	4,024	—	44,826
Total	**136,031**	**66,289**	**28,719**	**76,981**	**308,020**
Worldwide					
Ashore*	572,423	314,761	173,919	444,351	1,505,454
Afloat	—	195,189	4,460	—	199,649
Total	**572,423**	**509,950**	**178,379**	**444,351**	**1,705,103**

*Includes military personnel on TDY to plan and conduct exercises.

*Includes temporarily shore-based.

WHS

Re-enlistment Rates

(in Percentages)

	FY 83	FY 84	FY 85	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92	FY93
FIRST TERM											
Army	45	43	43	41	42	48	49	50	47	34	42
Navy	56	58	55	57	55	54	59	58	60	56	53
Marine Corps	33	40	35	46	35	26	26	28	19	19	15
Air Force	66	62	54	58	62	50	59	51	59	59	61
DoD Overall	52	51	48	49	49	49	53	51	51	46	48
CAREER											
Army	86	88	85	85	92	94	92	90	93	75	78
Navy	82	80	79	79	77	76	79	79	81	82	80
Marine Corps	76	84	83	84	80	76	77	78	72	72	69
Air Force	92	90	89	88	89	88	93	82	87	88	90
DoD Overall	86	86	84	84	85	86	87	84	86	83	80

OUSD(P&R)

Where We Get Our Officers

(FY 1993)

	Army	*Navy*	*Marine Corps*	*Air Force*	*Total DoD*
Service Academies	1,085	858	200	971	3,144
ROTC	2,939	1,117	240	2,305	6,601
Officer Candidate School/ Officer Training School	302	558	569	378	1,807
Direct Appointment	2,208	1,625	3	1,146	4,982
Aviation Training Program	8	203	1	—	212
Other	411	—	295	20	726
Total	**6,953**	**4,361**	**1,308**	**4,820**	**17,442**

DMDC

How They Rank: Officers

(As of Sept. 30, 1993)

RANK/GRADE	ARMY	NAVY	MARINE CORPS	AIR FORCE	TOTAL DoD
General, Admiral	11	11	3	11	36
Lt. General, Vice Admiral	43	28	9	34	114
Major General, Rear Admiral (Upper Half)	124	80	22	101	327
Brig. General, Rear Admiral (Lower Half)	175	118	34	151	478
Colonel, Captain	3,892	3,653	627	4,351	12,523
Lt. Colonel, Commander	9,188	7,653	1,517	11,181	29,539
Major, Lt. Commander	15,538	12,821	2,943	16,758	48,060
Captain, Lieutenant	26,592	23,618	5,659	37,181	93,050
1st Lieutenant, Lieutenant Jr. Grade	10,475	8,537	3,492	7,270	29,774
2nd Lieutenant, Ensign	8,667	7,063	2,239	7,035	25,004
Chief Warrant Officer, W-5	96	—	9	—	105
Chief Warrant Officer, W-4	1,702	516	268	—	2,486
Chief Warrant Officer, W-3	3,746	862	474	—	5,082
Chief Warrant Officer, W-2	5,531	1,335	811	—	7,677
Warrant Officer, W-1	2,065	51	323	—	2,439
Total	**87,845**	**66,346**	**18,430**	**84,073**	**256,694**

WHS

How They Rank: Enlisted

(As of Sept. 30, 1993)

RANK/GRADE	ARMY	NAVY	MARINE CORPS	AIR FORCE	TOTAL DoD
E-9	3,254	4,550	1,396	3,613	12,813
E-8	11,610	9,344	3,432	7,284	31,670
E-7	45,803	32,891	9,272	36,753	124,719
E-6	71,370	77,147	13,767	52,322	214,606
E-5	95,701	95,024	23,283	81,592	295,600
E-4	133,368	92,916	29,382	96,597	352,263
E-3	63,460	57,426	47,796	45,958	214,640
E-2	33,241	39,935	20,366	20,652	114,194
E-1	22,572	30,228	11,255	11,355	75,410
Total	**480,379**	**439,461**	**159,949**	**356,126**	**1,435,915**

WHS

How Old They Are

(As of April 30, 1994)

	ARMY		NAVY		MARINE CORPS		AIR FORCE		TOTAL DoD	
	Off.	Enl.	Off.	Enl.	Off.	Enl.	Off.	Enl.	Off.	Enl.
20 and younger	5	70,664	—	66,784	—	43,150	—	37,781	5	218,379
21-25	9,913	166,914	7,976	139,704	2,721	64,543	8,203	95,421	28,813	466,582
26-30	20,438	93,782	15,176	81,032	4,899	20,854	18,668	77,819	59,181	273,487
31-35	19,494	67,934	13,022	67,077	3,933	14,620	18,273	71,759	54,722	221,390
36-40	17,396	48,507	12,702	41,732	3,469	9,351	17,185	47,850	50,752	147,440
41-45	12,193	15,620	9,081	14,225	2,195	2,598	12,682	15,553	36,151	47,996
46-50	5,622	3,808	4,350	2,914	859	588	5,072	2,180	15,903	9,490
Over 50	1,680	492	1,430	323	139	65	1,105	90	4,354	970
Unreported	188	380	64	4	121	48	188	—	561	432
Total	**86,929**	**468,101**	**63,801**	**413,795**	**18,336**	**155,817**	**81,376**	**348,453**	**250,442**	**1,386,166**

DMDC

High School Diploma Graduates

(Percent Total Active Duty Non-Prior-Service Accessions)

	FY 91	FY 92	FY 93	FY 94*
Army	98	100	95	93
Navy	96	98	94	91
Marines	98	99	97	93
Air Force	99	99	99	99
Total	**97**	**99**	**95**	**94**

*Through May 31, 1994.
OUSD (P&R)

DoD Recruiting

(Percent of Non-Prior-Service Objective Obtained)

	FY 91	FY 92	FY 93	FY 94*
Army	100	103	101	100
Navy	100	100	100	100
Marines	100	100	100	102
Air Force	100	100	100	100
Total	**100**	**101**	**100**	**100**

*Through May 31, 1994.
OUSD (P&R)

Non-Prior Service Enlisted Accessions

(In Thousands)

	ARMY	NAVY	MARINES	AIR FORCE	DoD
FY 81	117.9	92.0	40.9	76.9	327.8
FY 82	120.4	79.8	38.1	67.5	305.7
FY 83	132.7	75.0	36.9	60.5	305.0
FY 84	131.7	77.9	40.2	60.0	309.8
FY 85	119.1	82.8	34.5	65.0	301.4
FY 86	127.1	88.5	35.2	64.4	315.3
FY 87	120.5	87.8	34.0	55.0	297.3
FY 88	105.6	90.2	35.6	41.2	272.6
FY 89	111.7	89.4	33.0	43.5	277.5
FY 90	84.4	70.5	33.2	36.0	224.1
FY 91	74.2	67.2	29.3	30.0	200.7
FY 92	75.9	58.0	31.8	35.1	200.8
FY 93	70.4	63.0	34.8	31.5	199.7
FY 94*	40.0	30.0	17.7	19.8	107.5

*Through May 31, 1994.
OUSD (P&R)

DoD Active Duty Military Personnel Strength Levels

(In Thousands)

	ARMY	NAVY	MARINES	AIR FORCE	DoD
FY 81	781.4	541.4	190.6	570.3	2,083.7
FY 82	780.4	554.5	192.4	582.8	2,110.1
FY 83	779.6	558.6	194.1	592.0	2,124.4
FY 84	780.2	566.1	196.2	597.1	2,139.6
FY 85	780.8	570.7	198.0	601.5	2,151.0
FY 86	781.0	581.1	198.8	608.2	2,169.1
FY 87	780.8	586.8	199.5	607.0	2,174.2
FY 88	771.8	592.6	197.4	576.4	2,138.2
FY 89	769.7	592.6	197.0	570.8	2,130.2
FY 90	732.4	579.4	196.7	535.2	2,043.7
FY 91	710.0	573.1	195.7	514.0	1,992.8
FY 92	606.1	536.8	184.4	166.1	1,793.4
FY 93	568.5	505.3	178.5	440.2	1,692.5
FY 94*	557.4	480.6	173.5	433.0	1,644.5

* Through May 31, 1994.
OUSD (P&R)

Minorities in Uniform

(As of April 30, 1994)

OFFICERS	BLACK AMERICANS		HISPANIC AMERICANS		OTHER*		TOTAL	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Army	9,816	11.3	2,403	2.8	3,508	4.0	15,727	18.1
Navy	3,100	4.9	1,782	2.8	2,110	3.3	6,992	11.0
Marine Corps	989	5.4	593	3.2	427	2.3	2,009	11.0
Air Force	4,594	5.6	1,609	2.0	2,801	3.4	9,004	11.1
Total DoD	**18,499**	**7.4**	**6,387**	**2.6**	**8,846**	**3.5**	**33,732**	**13.5**

ENLISTED	BLACK AMERICANS		HISPANIC AMERICANS		OTHER*		TOTAL	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Army	142,787	30.5	24,193	5.2	26,532	5.7	193,512	41.3
Navy	73,675	17.8	29,662	7.2	24,948	6.0	128,285	31.0
Marine Corps	27,277	17.5	13,881	8.9	5,583	3.6	46,741	30.0
Air Force	58,527	16.8	13,484	3.9	11,534	3.3	83,545	24.0
Total DoD	**302,266**	**21.8**	**81,220**	**5.9**	**68,597**	**4.9**	**452,083**	**32.6**

*Includes Native Americans, Alaskan Natives and Pacific Islanders.
DMDC

Education

(As of April 30, 1994)

Officers	
Below baccalaureate	11,709
Baccalaureate only degree	127,979
Advanced degree	93,730
Unknown	17,024
Total	**250,442**

Enlisted	
No high school diploma or GED	13,239
High school graduate or GED	1,023,763
Alternate education credential	8,708
1-4 years college (no degree)	294,964
Baccalaureate degree	39,277
Advanced degree	3,516
Unknown	2,699
Total	**1,386,166**

DMDC

Women in Uniform

(As of April 30, 1994)

	Officers		Enlisted	
	No.	Pct.	No.	Pct.
Army	11,049	12.7	60,170	12.9
Navy	7,996	12.5	44,019	10.6
Marine Corps	616	3.4	7,046	4.5
Air Force	12,181	15.0	53,829	15.4
Total DoD	**31,842**	**12.7**	**165,064**	**11.9**

DMDC

Families...

(As of Sept. 30, 1993)

	MILITARY PERSONNEL	SPOUSES	CHILDREN	PARENTS/ OTHERS	TOTAL DEPENDENTS
ARMY					
Officers	87,845	57,611	85,560	1,054	144,225
Enlisted	480,379	230,448	342,243	2,079	574,770
Total	**568,224**	**288,059**	**427,803**	**3,133**	**718,995**
NAVY					
Officers	66,346	48,676	67,784	270	116,730
Enlisted	439,461	242,884	345,345	3,421	591,650
Total	**505,807**	**291,560**	**413,129**	**3,691**	**708,380**
MARINES					
Officers	18,430	13,326	20,774	49	34,149
Enlisted	159,949	69,747	94,830	409	164,986
Total	**178,379**	**83,073**	**115,604**	**458**	**199,135**
AIR FORCE					
Officers	84,073	64,870	95,823	782	161,475
Enlisted	356,126	240,448	316,204	2,479	559,131
Total	**440,199**	**305,318**	**412,027**	**3,261**	**720,606**
Total DOD					
Officers	256,694	184,483	269,941	2,155	456,579
Enlisted	1,435,915	783,527	1,098,622	8,388	1,890,537
Total	**1,692,609**	**968,010**	**1,368,563**	**10,543**	**2,347,116**

WHS

...And Where They Live

(Total Dependents as of Sept. 30, 1993)

LOCATION	ARMY	NAVY	MARINE CORPS	AIR FORCE	Total DoD
Continental U.S.	567,061	650,555	175,211	597,970	1,990,797
Alaska	9,022	1,452	48	14,962	25,484
Hawaii	12,990	18,548	7,070	7,004	45,612
U.S. Territories	736	8,639	154	3,049	12,578
Foreign Countries	129,186	29,186	16,652	97,621	272,645
Total Worldwide	**718,995**	**708,380**	**199,135**	**720,606**	**2,347,116**

WHS

Guard & Reserve

Ready Reserve
(As of April 30, 1994)

The Ready Reserve is the major source of manpower augmentation for the active force. It includes Selected Reserve units, pretrained individual reservists and a training pipeline. Selected Reserve units are organized, equipped and trained to perform a wartime mission. Members of Selected Reserve units train throughout the year and participate annually in active duty training. Pretrained individual reservists include individual mobilization augmentees, members of the Inactive National Guard and individual ready reservists. The Individual Ready Reserve generally consists of people who have served recently in the active forces or Selected Reserve and have some period of obligated service remaining on their contract. The majority of the members in the Individual Ready Reserve do not participate in organized training.

	ARMY NATL GUARD	ARMY RESERVE	NAVAL RESERVE	MARINE CORPS RESERVE	AIR NATL GUARD	AIR FORCE RESERVE	TOTAL DoD	COAST GUARD RESERVE
Selected Reserve								
Officer	45,650	53,457	26,040	3,810	14,005	15,581	158,543	1,209
Enlisted	360,103	203,381	93,085	36,618	100,465	61,574	855,226	6,536
Total	**405,753**	**256,838**	**119,125**	**40,428**	**114,470**	**77,155**	**1,013,769**	**7,745**
Individual Ready Reserve/ Inactive National Guard								
Officer	603	70,110	19,301	5,347	—	18,554	113,915	565
Enlisted	6,070	371,889	153,449	63,204	—	88,093	682,705	8,704
Total	**6,673**	**441,999**	**172,750**	**68,551**	**—**	**106,647**	**796,620**	**9,269**
Total Ready Reserve								
Officer	46,253	123,567	45,341	9,157	14,005	34,135	272,458	1,774
Enlisted	366,173	575,270	246,534	99,822	100,465	149,667	1,537,931	15,240
Total	**412,426**	**698,837**	**291,875**	**108,979**	**114,470**	**183,802**	**1,810,389**	**17,014**

DMDC

Standby Reserve
(As of April 30, 1994)

The Standby Reserve consists of personnel who have been designated key civilian employees or have a temporary hardship or disability and wish to maintain their military affiliation without being in the Ready Reserve. These individuals have also served in the active component or Selected Reserve and can be mobilized in time of national emergency if necessary.

	ARMY RESERVE	NAVAL RESERVE	MARINE CORPS RESERVE	AIR FORCE RESERVE	TOTAL DoD	COAST GUARD RESERVE
Officer	722	6,058	240	9,593	**16,613**	504
Enlisted	1,171	8,984	39	1,056	**11,250**	128
Total	**1,893**	**15,042**	**279**	**10,649**	**27,863**	**632**

Includes active and inactive Standby Reserve.
DMDC

Selected Reserve People by Function

(End Strength in Thousands)

	FY 1993 ACTUAL	FY 1994 PROGRAMMED	FY 1995 BUDGETED
MAJOR FORCE MISSIONS:	827.8	799.1	762.7
STRATEGIC FORCES			
Strategic Offensive	1.0	2.2	2.2
Strategic Defensive	9.5	7.9	7.9
Strategic Command, Control, Communications	0.0	0.0	0.0
Industrial and Stock Fund	0.0	0.0	0.0
Total	10.5	10.1	10.1
GENERAL PURPOSE FORCES			
Land Forces	561.8	553.2	529.2
Tactical Air Forces	78.2	72.3	65.9
Naval Forces	82.5	68.7	63.5
Mobility Forces	76.6	80.7	80.6
Special Operations Forces	18.2	13.8	13.4
General Purpose Support	0.0	0.0	0.0
Theater Missile Defense	0.0	0.0	0.0
Counterdrug Support	0.0	0.0	0.0
Total	817.3	788.9	752.6
DEFENSEWIDE MISSIONS:	23.9	22.1	22.2
INTELLIGENCE/COMMUNICATIONS			
Intelligence	5.5	4.3	4.5
Communications	16.5	15.9	15.8
Total	22.0	20.2	20.3
GENERAL RESEARCH AND DEVELOPMENT			
Science and Technology Program	0.0	0.0	0.0
Undistributed Development	0.0	0.0	0.0
Research, Development, Test and Evaluation/Management and Support	0.7	0.7	0.7
Total	0.7	0.7	0.7
OTHER DEFENSEWIDE MISSIONS			
Geophysical Sciences	1.2	1.2	1.1
Space Launch Support	0.0	0.0	0.0
Nuclear Weapons Support	0.0	0.0	0.0
International Support	0.0	0.0	0.0
Total	1.3	1.2	1.1
DEFENSEWIDE SUPPORT MISSIONS:	168.8	166.4	157.4
LOGISTICAL SUPPORT			
Supply Operations	3.8	3.0	2.6
Maintenance Operations	3.7	3.2	3.1
Other Logistical Support	4.0	4.0	3.3
Total	11.5	10.2	9.1
PERSONNEL SUPPORT			
Personnel Acquisitions	6.3	5.9	5.7
Training	68.9	71.1	65.7
Medical	29.2	28.0	27.1
Individuals	2.8	4.4	4.1
Federal Agency Support	0.0	0.1	0.1
Other Personnel Support	0.0	0.0	0.0
Total	107.2	109.4	102.9
OTHER CENTRALIZED SUPPORT			
Departmental Headquarters	50.1	46.8	45.5
Retired Pay	0.0	0.0	0.0
Undistributed Adjustments	0.0	0.0	0.0
Total	50.1	46.8	45.5
INDIVIDUAL MOBILIZATION AUGMENTEES	24.8	24.7	24.8
ACTIVE GUARD/RESERVES	12.6	12.5	11.9
TOTAL END STRENGTH IN BUDGET	1,057.7	1,024.8	979.0

OUSD (P&R)

Selected Reserve: Continuation Rates

The following charts show the percentages of officers and enlisted personnel who continue service in the Selected Reserve from one fiscal year to the next. Thus, continuation rates are not the same as re-enlistment rates, and the two should not be directly compared.

First Term

(less than six years' total service)

	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93
Army National Guard	80.3	79.1	77.2	84.7	78.5	77.6
Army Reserve	69.5	71.1	69.2	77.3	72.0	69.3
Naval Reserve	73.4	76.0	77.6	82.7	77.9	68.7
Marine Corps Reserve	77.9	77.8	79.1	83.7	81.6	80.1
Air National Guard	88.3	88.8	89.4	90.8	88.4	88.1
Air Force Reserve	78.8	79.0	80.7	87.0	81.1	81.0
Total DoD	**76.9**	**77.2**	**76.2**	**82.9**	**77.8**	**75.5**
Coast Guard	71.3	82.5	83.4	82.8	77.7	68.6

DMDC

Career

(six or more years' total service)

	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93
Army National Guard	89.1	88.2	87.0	89.0	84.8	85.7
Army Reserve	84.2	86.2	84.9	87.2	83.1	82.2
Naval Reserve	83.2	84.1	81.6	83.3	80.5	81.6
Marine Corps Reserve	76.6	76.3	77.3	78.0	71.2	75.5
Air National Guard	92.4	92.1	91.8	91.5	91.6	92.4
Air Force Reserve	89.4	90.1	89.4	90.9	88.3	88.8
Total DoD	**87.4**	**87.7**	**86.5**	**88.2**	**84.9**	**85.4**
Coast Guard	80.4	88.2	89.4	86.1	86.2	84.4

DMDC

How Old They Are

(As of Sept. 30, 1993)

	BELOW 21	21-25	26-30	31-35	36-40	41-45	46-50	Over 50	Totals
ArmyNG									
Off	32	3,893	10,271	8,540	6,330	7,740	6,389	3,461	46,656
Enl	41,651	100,165	65,791	48,069	34,711	33,944	23,834	15,098	363,263
USAR									
Off	534	2,003	7,369	8,140	9,583	12,520	11,421	4,720	56,290
Enl	35,019	58,217	38,566	27,303	20,228	19,184	13,464	7,629	219,610
USNR									
Off	10	110	2,518	6,728	7,951	5,645	3,032	1,147	27,141
Enl	4,408	26,738	22,371	17,819	14,342	10,696	5,640	3,240	105,254
USMCR									
Off	0	7	424	1,043	1,065	613	365	129	3,646
Enl	7,939	20,174	5,582	2,231	995	648	419	104	38,092
AirNG									
Off	1	269	1,769	2,975	2,972	2,977	2,219	1,060	14,242
Enl	3,635	16,510	20,252	17,487	12,976	13,852	10,900	7,308	102,920
USAFR									
Off	0	67	1,087	3,064	3,682	3,724	3,161	1,057	15,842
Enl	1,041	9,023	13,822	12,870	9,462	8,367	6,225	3,910	64,720
USCGR									
Off	0	1	33	185	312	340	296	151	1,318
Enl	207	1,174	1,036	1,284	1,205	1,262	1,104	751	8,023
TOTAL DoD									
Off	**577**	**6,350**	**23,471**	**30,675**	**31,895**	**33,559**	**26,883**	**11,725**	**165,135**
Enl	**93,900**	**232,001**	**167,420**	**127,063**	**93,919**	**87,953**	**61,586**	**38,040**	**901,882**

DMDC

Civilian Personnel

(As of March 31, 1994)

Most civilian employees of the Department of Defense are hired directly by the military departments, the defense agencies or the Office of the Secretary of Defense and the Organization of the Joint Chiefs of Staff and are designated as "direct hire" civilians. In general, salaried personnel are described as "white collar" and wage board personnel are described as "blue collar."

In a few foreign countries, substantial numbers of foreign nationals, who are technically employees of the host country (or an agency of that government), are assigned to work with U.S. forces under contracts or agreements with the host government. These foreign nationals are designated "indirect hire" civilians.

	ARMY	NAVY/ MARINE CORPS	AIR FORCE	OTHER	TOTAL DoD
DIRECT HIRE					
Salaried	222,426	184,889	126,904	128,209	662,428
Wage Board	64,153	82,228	64,588	25,990	236,959
Total	**286,579**	**267,117**	**191,492**	**154,199**	899,387
INDIRECT HIRE	27,853	10,299	7,979	2,953	49,084
TOTAL	**314,432**	**277,416**	**199,471**	**157,152**	**948,471**

WHS

General Schedule/Merit Pay System (Full-time Employees)

(As of April 30, 1994)

GRADE	ARMY	NAVY	MARINES	AIR FORCE	OTHER DoD	TOTAL DoD
1	21	28	0	8	16	73
2	278	202	7	53	142	682
3	3,271	1,908	177	1,576	2,651	9,583
4	16,746	9,270	853	7,084	6,875	40,828
5	27,530	16,960	1,660	16,038	12,724	74,912
6	14,874	10,745	908	9,031	8,812	44,370
7	20,235	12,377	1,036	11,743	8,881	54,272
8	3,850	2,141	180	1,722	2,012	9,905
9	21,873	14,106	1,174	16,514	8,481	62,148
10	2,433	2,008	136	1,216	328	6,121
11	29,770	26,055	1,317	18,347	17,936	93,425
12	35,217	37,632	1,121	21,596	18,958	114,524
13	18,878	13,975	493	10,442	7,952	51,740
14	8,259	6,423	212	3,905	4,013	22,812
15	3,091	2,883	83	1,396	2,559	10,012
TOTAL	**206,326**	**156,713**	**9,357**	**120,671**	**102,340**	**595,407**

All DoD GS/GM 16, 17 and 18 grades have been converted to positions in the Senior Executive Service under provisions of the Civil Service Reform Act of 1978.
DMDC

Senior Executive Service
(As of March 31, 1994)

Department of Army	313
Department of Navy	374
Department of Air Force	148
Office of the Secretary of Defense	523
Total	**1,358**

DMDC

Wage Supervisor
(As of April 30, 1994)

GRADE	ARMY	NAVY	MARINES	AIR FORCE	OTHER	TOTAL DOD
1	36	22	1	24	7	90
2	36	30	3	46	50	165
3	57	15	4	40	106	222
4	174	50	11	95	209	539
5	249	117	20	153	354	893
6	236	160	14	312	395	1,117
7	236	167	23	372	320	1,118
8	457	212	64	559	95	1,387
9	1,237	397	60	1,651	69	3,414
10	1,048	3,028	146	2,373	118	6,713
11	637	644	41	707	79	2,108
12	151	195	21	529	36	932
13	104	191	8	212	12	527
14	130	847	18	480	9	1,484
15	132	308	22	160	13	635
16	46	179	2	145	2	374
17	23	40	3	52	1	119
18	13	16	—	8	—	37
TOTAL	**5,002**	**6,618**	**461**	**7,918**	**1,875**	**21,874**

DMDC

Wage Leader
(As of April 30, 1994)

GRADE	ARMY	NAVY	MARINES	AIR FORCE	OTHER	TOTAL DOD
1	40	3	—	1	1	45
2	65	66	5	9	24	169
3	34	14	1	2	4	55
4	35	30	—	2	146	213
5	159	104	14	40	452	769
6	144	120	19	31	123	437
7	130	138	13	53	236	570
8	327	180	17	113	35	672
9	388	251	30	287	18	974
10	773	1,920	97	784	70	3,644
11	249	343	7	129	26	754
12	66	45	5	43	2	161
13	18	101	—	2	—	121
14	2	44	—	—	—	46
15	—	3	—	—	—	3
TOTAL	**2,430**	**3,362**	**208**	**1,496**	**1,137**	**8,633**

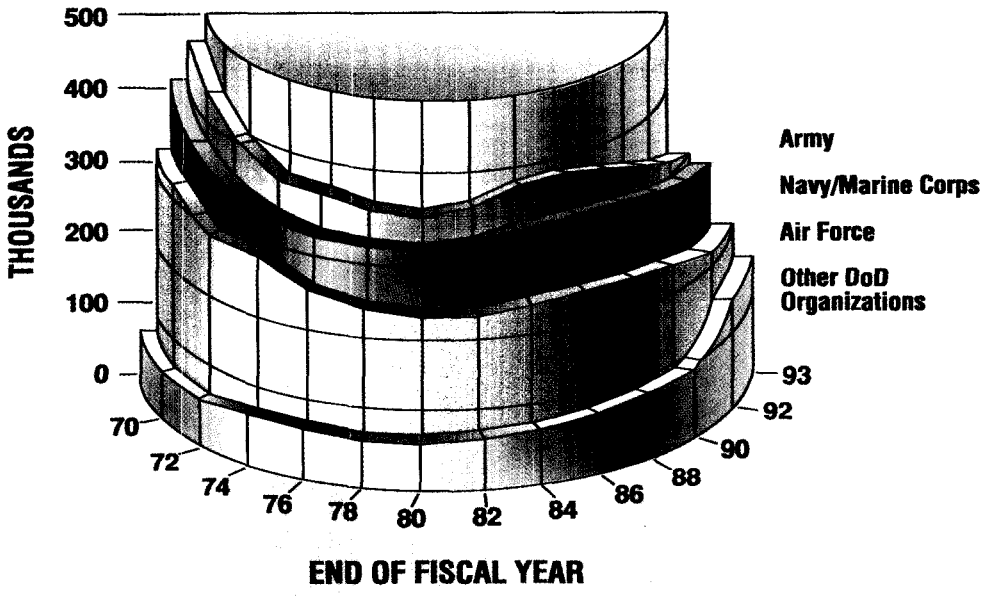
DMDC

Wage Grade
(As of April 30, 1994)

GRADE	ARMY	NAVY	MARINES	AIR FORCE	OTHER	TOTAL DOD
1	548	121	8	27	67	771
2	962	1,040	103	591	781	3,477
3	686	452	73	439	192	1,842
4	1,041	488	34	273	1,551	3,387
5	5,413	3,863	541	2,377	6,420	18,614
6	3,984	2,281	269	2,375	3,725	12,634
7	3,168	2,785	561	2,604	3,315	12,433
8	7,712	7,134	958	5,667	793	22,264
9	7,817	4,447	627	5,225	408	18,524
10	11,376	25,464	1,529	23,031	933	62,333
11	5,480	5,130	360	5,513	316	16,799
12	1,129	1,067	66	5,100	66	7,428
13	322	1,002	20	531	8	1,883
14	91	339	—	130	—	560
15	6	110	—	2	—	118
TOTAL	**49,735**	**55,723**	**5,149**	**53,885**	**18,575**	**183,067**

DMDC

Civilian Personnel Strength Levels



Military Retirees

Their Numbers

(As of Sept. 30, 1993)

The following table reflects only those retirees receiving retirement pay from the services.

	ARMY	NAVY	MARINE CORPS	AIR FORCE	TOTAL DoD
For longevity					
(20 or more years)	468,336	358,940	67,109	534,094	1,428,479
For disability					
Temporary	2,614	3,588	1,352	1,427	8,981
Permanent	50,193	25,247	10,162	32,543	118,145
Total	**521,143**	**387,775**	**78,623**	**568,064**	**1,555,605**

DMDC

Annuitant Trends

Includes retirees (nondisability) and number of families receiving survivor benefits.

June 1970	772,789	June 1976	1,131,835	Sept 1982	1,390,779	Sept 1988	1,566,899
June 1971	831,330	June 1977	1,199,501	Sept 1983	1,418,881	Sept 1989	1,601,703
June 1972	890,242	June 1978	1,242,764	Sept 1984	1,449,092	Sept 1990	1,633,561
June 1973	948,244	June 1979	1,286,315	Sept 1985	1,479,940	Sept 1991	1,667,983
June 1974	1,011,524	June 1980	1,330,150	Sept 1986	1,506,377	Sept 1992	1,710,596
June 1975	1,073,017	Sept 1981	1,363,164	Sept 1987	1,535,068	Sept 1993	1,748,320

WHS

Where Military Retirees Live

(As of Sept. 30, 1993*)

MAILING ADDRESS	ARMY	NAVY	MARINE CORPS	AIR FORCE	TOTAL DoD
Alabama	21,293	6,070	1,425	14,329	43,117
Alaska	2,226	555	111	3,591	6,483
Arizona	12,130	6,592	2,460	20,620	41,802
Arkansas	7,389	4,463	925	9,942	22,719
California	38,411	84,974	18,642	66,671	208,698
Colorado	15,061	4,497	1,133	19,637	40,328
Connecticut	3,010	4,985	577	2,195	10,767
Delaware	1,375	789	188	3,462	5,814
District of Columbia	2,342	677	156	1,383	4,558
Florida	40,260	51,729	7,032	62,064	161,085
Georgia	33,381	9,231	2,901	18,133	63,646
Guam	462	625	59	415	1,561
Hawaii	5,308	3,611	882	3,219	13,020
Idaho	2,056	2,158	430	3,975	8,619
Illinois	10,082	7,207	1,652	10,804	29,745
Indiana	8,139	3,876	1,187	5,926	19,128
Iowa	3,297	2,267	519	2,686	8,769
Kansas	7,754	2,658	672	5,991	17,075
Kentucky	13,201	2,927	815	4,490	21,433
Louisiana	8,935	4,682	1,198	11,145	25,960
Maine	2,671	3,611	492	3,564	10,338
Maryland	15,260	11,366	1,807	11,101	39,534
Massachusetts	7,426	6,209	1,276	6,503	21,414
Michigan	8,588	5,172	1,420	7,652	22,832
Minnesota	4,815	3,498	782	4,295	13,390
Mississippi	6,149	6,030	852	9,467	21,498
Missouri	11,819	6,141	1,993	10,136	30,089
Montana	1,609	1,304	319	2,771	6,003
Nebraska	2,037	1,584	302	6,981	10,904
Nevada	3,870	4,482	1,135	10,462	19,949
New Hampshire	2,631	1,946	419	3,837	8,833
New Jersey	10,841	5,657	1,267	5,412	23,177
New Mexico	5,121	2,657	622	9,927	18,327
New York	13,938	8,180	2,289	10,643	35,050
North Carolina	25,498	9,722	8,286	15,240	58,746
North Dakota	765	372	63	1,723	2,923
Ohio	11,353	6,819	2,174	16,221	36,567
Oklahoma	12,645	4,064	1,081	12,620	30,410
Oregon	5,433	6,434	1,331	6,292	19,490
Pennsylvania	17,396	10,969	3,023	11,419	42,807
Puerto Rico	6,671	298	139	672	7,780
Rhode Island	1,343	3,390	258	901	5,892
South Carolina	15,379	11,142	2,488	14,653	43,662
South Dakota	1,226	609	113	2,389	4,337
Tennessee	15,405	8,692	2,037	10,974	37,108
Texas	58,713	20,452	5,345	73,985	158,495
Utah	2,872	1,592	368	4,878	9,710
Vermont	1,254	584	125	887	2,850
Virginia	34,178	40,151	6,515	21,914	102,758
Virgin Islands	160	52	6	38	256
Washington	20,838	19,201	2,091	19,222	61,352
West Virginia	3,661	2,102	631	2,747	9,141
Wisconsin	5,776	3,344	871	4,314	14,305
Wyoming	836	604	120	1,954	3,514
Other	10,480	7,320	750	8,875	27,425
TOTAL	**584,769**	**429,323**	**95,754**	**605,347**	**1,715,193**

*Includes those receiving and not receiving retired pay from DoD.

DMDC

Military Training
(FY 1994)
Training Loads

"Training loads" are the average number of students and trainees participating in formal individual training and education courses during the fiscal year. For a full fiscal year, training loads are the equivalent of student/trainee man-years for their participants, including both those in temporary duty and permanent change-of-station status.

WHO TRAINS	
Active Forces	
Army	54,191
Navy	45,142
Marine Corps	18,045
Air Force	29,896
Total Active	**147,274**
Reserve Components	31,462
Total	**178,736**
TYPES OF TRAINING	
Recruit	33,437
Officer Acquisition	17,971
Specialized Skill	98,513
Flight	3,784
Professional Development	14,976
One-Station Unit Training	10,055
Total	**178,736**

Where They Train
(Major Locations)

Recruit Training

ARMY	NAVY
Fort Benning, Ga.	Great Lakes, Ill.
Fort Jackson, S.C.	Orlando, Fla.
Fort Knox, Ky.	San Diego, Calif.
Fort Leonard Wood, Mo.	
Fort Sill, Okla.	
MARINE CORPS	**AIR FORCE**
Parris Island, S.C.	Lackland AFB, Texas
San Diego, Calif.	

Officer Acquisition Training

ARMY	NAVY
Fort Benning, Ga.	Annapolis, Md.
Fort Monmouth, N.J.	(Naval Academy)
West Point, N.Y.	Newport, R.I.
(Military Academy)	San Diego, Calif.
MARINE CORPS	**AIR FORCE**
Quantico, Va.	Colorado Springs, Colo.
	(Air Force Academy)
	Lackland AFB, Texas

OUSD(P&R)

Joint Service Schools

Defense Equal Opportunity Management Institute	Patrick AFB, Fla.
Defense Foreign Language Institute	Presidio of Monterey, Calif.
Defense Information School	Fort Benjamin Harrison, Ind.
Defense Institute of Security Assistance Management	Wright-Patterson AFB, Ohio
Defense Intelligence College	Washington, D.C.
Defense Language Institute, English Language Course	Lackland AFB, Tex.
Defense Mapping School	Fort Belvoir, Va
Defense Photography School	Pensacola, Fla.
Defense Resources Management Education Center	Monterey, Calif.
Defense Systems Management College	Fort Belvoir, Va.
Defense Visual Information School	Fort Meade, Md.
Joint Military Packaging Training Center	Aberdeen Proving Ground, Md.
National Defense University	Washington, D.C.
The National War College	
Industrial College of the Armed Forces	
DoD Computer Institute	
Armed Forces Staff College	Norfolk, Va.
Uniformed Services University of the Health Sciences	Bethesda, Md.

Service War Colleges and Intermediate Officers Schools

Army Command and General Staff College	Fort Leavenworth, Kan.
Army War College	Carlisle Barracks, Pa.
College of Naval Command and Staff	Newport, R.I.
Naval War College	Newport, R.I.
Marine Corps Command and Staff College	Quantico, Va.
Air Command and Staff College	Maxwell AFB, Ala.
Air War College	Maxwell AFB, Ala.

ROTC Units
(1993-94 School Year)

Army	275
Navy	58
Air Force	146
Total	**479**

Major Weapon Systems And Combat Forces

Strategic	FY 1992	[illegible]	FY 1994 ESTIMATE	FY 1995 ESTIMATE	FY 1996 ESTIMATE
STRATEGIC OFFENSE					
Land-Based ICBMs*					
Minuteman	880	[illegible]	[illegible]	500	500
Peacekeeper	50	[illegible]	[illegible]	50	51
Strategic Bombers**					
B-52G/H	125	[illegible]	[illegible]	40	40
B-1B	84	[illegible]	[illegible]	60	60
B-2	—	[illegible]	[illegible]	7	11
Fleet Ballistic Launchers (SLBMs)*					
Poseidon (C-3 and C-4)	176	[illegible]	[illegible]	—	—
Trident (C-4 and D-5)	288	[illegible]	[illegible]	360	384
STRATEGIC DEFENSE INTERCEPTORS					
(Primary Aircraft Authorized/Squadrons)**					
Air National Guard	216/12	[illegible]	150/10	150/10	150/10

* Number on-line: operational, not in maintenance or ov[illegible]
** Does not include [illegible] heavy bombers.

General Purpose	FY 1992	[illegible]	[illegible]	FY 1995 ESTIMATE	FY 1996 ESTIMATE
LAND FORCES					
[illegible]					
[illegible]	14	[illegible]	[illegible]	12	11
[illegible]	10	[illegible]	[illegible]	8	8
[illegible]					
[illegible]	3	[illegible]	[illegible]	3	3
[illegible]	1	[illegible]	[illegible]	1	1
[illegible]					
[illegible]	7	[illegible]	[illegible]	6	6
[illegible]	18	[illegible]	[illegible]	6	**TBD
[illegible]					
[illegible]	5	[illegible]	[illegible]	5	5
[illegible]	4	[illegible]	[illegible]	2	2
[illegible]	1	[illegible]	[illegible]	1	1

[illegible] conversion [illegible] Group and the armored cavalry regiments.

TACTICAL AIR FORCES (Primary A[illegible])					
[illegible]					
[illegible]	1,254/5[illegible]	[illegible]	[illegible]	936/51	936/51
[illegible]	924/4[illegible]	[illegible]	[illegible]	504/36	484/34
[illegible]					
[illegible]	33	[illegible]	—	—	—
[illegible]					
[illegible]	678/6[illegible]	[illegible]	[illegible]	528/44	458/39
[illegible]	116/1[illegible]	[illegible]	[illegible]	38/3	38/3
[illegible]					
[illegible]	346/2[illegible]	[illegible]	[illegible]	332/23	332/23
[illegible]	72/[illegible]	[illegible]	[illegible]	72/6	72/6
[illegible]	34	[illegible]	[illegible]	16	17
[illegible]	357	[illegible]	[illegible]	303	297
[illegible]	57	[illegible]	[illegible]	37	27
[illegible]	19	[illegible]	[illegible]	17	18
[illegible]	467	[illegible]	[illegible]	373	359
[illegible]	16	[illegible]	[illegible]	[illegible]	5
[illegible]	—	[illegible]	[illegible]	[illegible]	19
[illegible]	16	[illegible]	[illegible]	[illegible]	24

Airlift and Sealift	FY 1992	FY 1993	FY 1994 ESTIMATE	FY 1995 ESTIMATE	FY 1996 ESTIMATE
INTERTHEATER AIRLIFT*					
C-5	109	109	109	104	104
C-141	234	214	214	199	187
KC-10	57	57	57	54	54
C-17	—	3	9	14	19
INTRATHEATER AIRLIFT*					
Air Force C-130	433	406	382	388	388
SEALIFT SHIPS**					
Active					
Tankers	20	20	18	18	18
Cargo	40	40	52	52	52
Reserve					
RRF***	97	97	99	99	106
NDRF****	122	59	59	48	38

*Primary Aircraft Authorized.
**Includes fast sealift ships, afloat pre-positioned force ships and common user (charter) ships.
***Ready Reserve Force (assigned to 4-, 5-, 10- or 20-day reactivation readiness groups).
****National Defense Reserve Fleet (beginning in fiscal 1988, specific NDRF ships were designated militarily useful ships).
SecDef Annual Report to Congress

FORCE LOCATIONS

(As of June 30, 1994)

ATLANTIC FLEET
12 Strike/Fighter Squadrons
10 Fighter Squadrons
5 Attack Squadrons
6 Early Warning Squadrons
5 Anti-Submarine Warfare Squadrons
5 Anti-Sub Warfare Helicopter Squadrons
10 Patrol Squadrons
3 Fleet Air Reconnaissance Squadrons
1 Fleet Logistics Support Squadron
7 Light Anti-Sub Warfare Helicopter Squadrons

PACIFIC FLEET
14 Strike/Fighter Squadrons
11 Fighter Squadrons
6 Attack Squadrons
7 Early Warning Squadrons
7 Anti-Submarine Warfare Squadrons
8 Anti-Submarine Warfare Helicopter Squadrons
7 Patrol Squadrons
4 Fleet Air Reconnaissance Squadrons
2 Fleet Logistics Support Squadrons
7 Light Anti-Submarine Warfare Helicopter Squadrons
12 Tactical Electronic Warfare Squadrons
4 Combat Support Helicopter Squadrons

AIR FORCE/ALASKA
2 Wings
4 Fighter Squadrons
1 Airlift Squadron

AIR FORCE/ICELAND
1 Fighter Squadron
1 Wing

AIR FORCE/CONTIGUOUS U.S.
6 Missile Wings
10 Bomber Wings
9 Fighter Wings
30 Fighter Squadrons
1 Reconnaissance Squadron
3 Air Support Squadrons
32 Airlift Squadrons
27 Air Refueling Squadrons
1 Aeromedical Squadron
6 Special Operations Squadrons
15 Bomber Squadrons
10 Wings
1 Special Operations Wing
17 Missile Squadrons
5 Rescue Squadrons
16 Air Refueling Wings
15 Composite Wings

AIR FORCE/PACIFIC
2 Fighter Wings
8 Fighter Squadrons
1 Air Support Squadron
1 Air Refueling Squadron
2 Wings
1 Reconnaissance Squadron
3 Rescue Squadrons
3 Airlift Squadrons
1 Aeromedical Squadron
3 Special Operations Squadrons

PANAMA
1 Wing
1 Airlift Squadron

AIR FORCE/EUROPE
5 Fighter Wings
14 Fighter Squadrons
2 Reconnaissance Squadrons
1 Airlift Squadron
1 Aeromedical Squadron
3 Special Operations Squadrons
1 Wing
1 Air Refueling Squadron
1 Air Support Squadron
1 Fighter Group

MARINES/ATLANTIC
2 Light Attack Helicopter Squadrons
9 Lift Helicopter Squadrons
3 Attack Squadrons
4 Electronic Warfare Squadrons
8 Fighter/Attack Squadrons
1 Tactical Refueling Squadrons

MARINES/PACIFIC
4 Light Attack Helicopter Squadrons
15 Lift Helicopter Squadrons
4 Attack Squadrons
8 Fighter/Attack Squadrons
2 Tactical Refueling Squadrons

(As of June 30, 1994)

ALASKA
1 Air Refueling Squadron
1 Air Rescue Squadron

NAVY
1 Minesweeper
2 Training Frigates
16 Guided Missile Frigates
2 Salvage Ships
4 Fighter Squadrons
2 Attack Squadrons
4 Strike/Fighter Squadrons
14 Logistics/Support Squadrons
2 Electronic Warfare Squadrons
8 Helicopter Squadrons
13 Patrol Squadrons
2 Early Warning Squadrons
2 Composite Fighter Squadrons

MARINES
1 Division
1 Aircraft Wing

HAWAII
1 Fighter Squadron

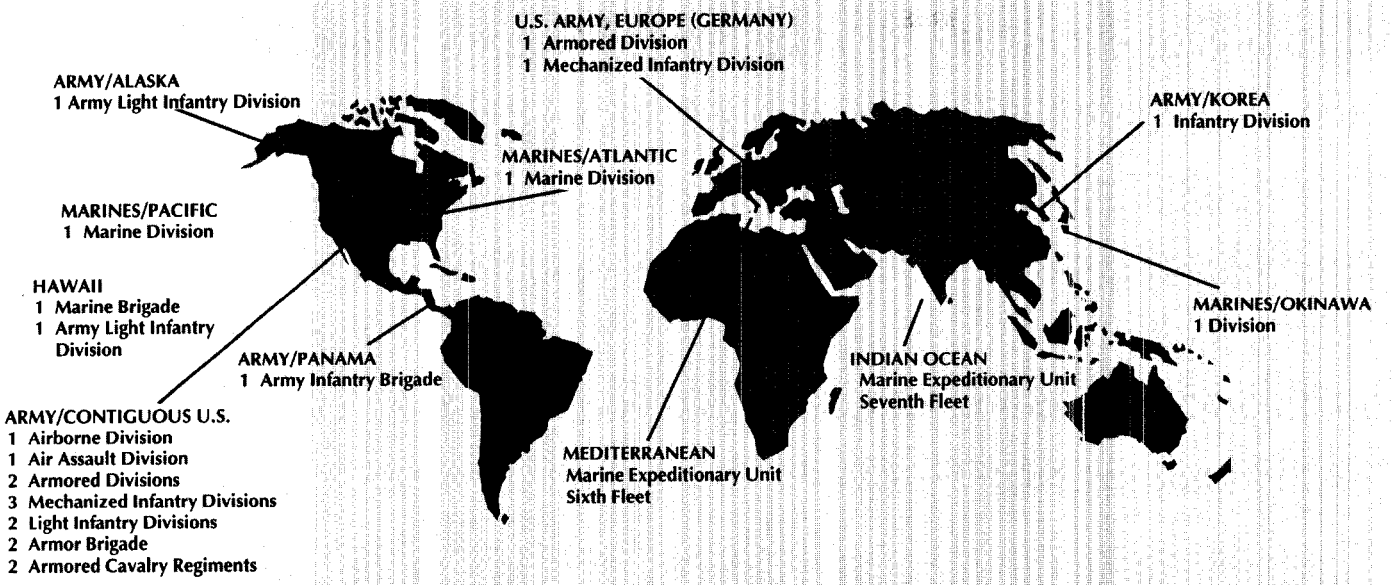
NATIONAL GUARD
1 Armored Division
4 Mechanized Infantry Divisions
2 Infantry Divisions
1 Light Infantry Division
3 Armor Brigades
2 Mechanized Brigades
4 Infantry Brigades
3 Theater Defense Brigades
1 Armored Cavalry Regiment
3 Generic Divisional Brigades
4 Roundout Brigades
3 Roundup Brigades
1 Scout Group
2 Special Forces Groups

PUERTO RICO
1 Fighter Squadron

AIR FORCE
15 Fighter Wings
36 Fighter Groups
52 Fighter Squadrons
44 Airlift Squadrons
4 Associate Squadrons
2 Reconnaissance Squadrons
26 Air Refueling Squadrons
3 Air Rescue Squadrons
2 Air Rescue Groups
1 Special Operations Squadron
1 Special Operations Group
14 Air Refueling Groups
2 Associate Groups
25 Airlift Groups
1 Aeromedical Group
1 Aeromedical Squadron
1 Associate Squadron
6 Air Refueling Wings
13 Airlift Wings
6 Associate Wings
2 Air Rescue Groups
2 Air Rescue Squadrons

*Air Force figures (active and reserves) exclude training and testing. Figures for Air Reserve components in Alaska, Hawaii and Puerto Rico included in ARC totals.

(As of June 30, 1994)



Active Ship Location by Major Type And Ocean Area

(As of June 30, 1994)

International Security Relationships

The security of our friends and allies contributes directly to the security of the United States. For more than 30 years, the United States has made available materials, services and training to friendly countries to enable them to improve their own defense capabilities.

The Department of Defense administers several elements of the Security Assistance Program, three of which are Foreign Military Sales, the Military Assistance Program and the International Military Education and Training Program.

- Foreign Military Sales is a program through which DoD sells defense articles, defense services and training to foreign governments.
- Foreign Military Financing is a grant and loan program by which selected friends and allies can finance the acquisition of defense articles and defense services.
- International Military Education and Training provides training and training support to foreign personnel as grant assistance.

Foreign Military Sales Agreements

(FY 1993)
($ in thousands)

AFRICA	**24,853**
Botswana	2,334
Burundi	250
Cameroon	800
Chad	2,250
Comoros	85
Djibouti	651
Gabon	147
Ghana	632
Guinea	817
Guinea-Bissau	412
Ivory Coast	739
Madagascar	295
Malawi	603
Mali	97
Namibia	2,418
Niger	2,508
Nigeria	461
Organization of African Unity	55
Senegal	6,986
Seychelles	275
Sierra Leone	727
Togo	206
Zimbabwe	1,105
AMERICAN REPUBLICS	**192,056**
Antigua-Barbuda	754
Argentina	18,000
Barbados	753
Belize	271
Bolivia*	18,790
Brazil	26,195
Chile	15,581
Colombia	17,192
Colombia*	30,588
Costa Rica	147
Dominica	312
Dominican Republic	1,841
Ecuador	1,869
Ecuador*	315
El Salvador	14,755
Grenada	436
Honduras	13,010
Jamaica	3,115
Mexico	6,369
Panama	73
Paraguay	9
Peru*	799
St. Kitts and Nevis	336
St. Lucia	562
St. Vincent and Grenadines	530
Trinidad & Tobago	52
Uruguay	353
Venezuela	19,049
EAST ASIA AND PACIFIC	**9,148,733**
Australia	299,159
Indonesia	30,613
Japan	1,407,223
Korea	244,097
Malaysia	822
New Zealand	9,339
Philippines	87,924
Singapore	405,405
Taiwan	6,275,524
Thailand	388,627
EUROPE AND CANADA	**6,839,970**
Austria	9,619
Belgium	328,686
Canada	162,672
Denmark	336,134
Estonia	17
Finland	63
France	51,414
Germany	203,298
Greece	1,682,276
Hungary	12,971
Ireland	48
Italy	108,016
Luxembourg	435
Malta	82
Netherlands	782,461
Norway	443,817
Portugal	15,340
Spain	118,796
Sweden	6,777
Switzerland	1,699,810
Turkey	742,332
United Kingdom	134,906
NEAR EAST AND SOUTH ASIA	**16,274,469**
Bahrain	106,032
Egypt	468,336
India	1
Israel	162,326
Jordan	15,503
Kuwait	2,872,963
Lebanon	2,361
Morocco	11,170
Oman	6,328
Qatar	307
Saudi Arabia	12,532,202
Tunisia	20,616
United Arab Emirates	76,324
NON-REGIONAL TOTAL	**735,915**
WORLDWIDE	**33,215,993**

*Counternarcotics-related
DSAA

Foreign Military Financing

(FY 1993)
($ in thousands)

AFRICA	**15,000**
Benin	250
Botswana	1,800
Chad	200
Congo	200
Gambia, The	1,300
Ghana	600
Guinea	100
Guinea-Bissau	1,700
Madagascar	1,500
Mali	750
Namibia	600
Niger	600
Rwanda	525
Sao Tome & Principe	190
Senegal	2,700
Seychelles	110
Tanzania	100
Uganda	425
Zambia	300
Zimbabwe	1,050
AMERICAN REPUBLICS	**63,095**
Antigua-Barbuda	80
Barbados	80
Belize	500
Bolivia	18,595
Colombia	27,000
Dominica	110
Dominican Republic	500
Ecuador	1,150
El Salvador	11,000
Grenada	200
Honduras	1,500
Jamaica	450
Organization of American States	500
St. Kitts and Nevis	190
St. Lucia	610
St. Vincent & Grenadines	80
Trinidad and Tobago	550
EAST ASIA AND PACIFIC	**15,000**
Philippines	15,000
EUROPE	**250**
Hungary	250
NEAR EAST AND SOUTH ASIA	**3,152,500**
Bahrain	500
Egypt	1,300,000
Israel	1,800,000
Jordan	9,000
Morocco	40,000
Oman	1,000
Tunisia	2,000
NON-REGIONAL GENERAL COSTS	26,456
WORLDWIDE	**3,272,301**

DSAA

International Military Education & Training

(FY 1993)

	DELIVERIES ($ IN THOUSANDS)	STUDENTS TRAINED
AFRICA	**8,792**	**539**
Benin	112	8
Botswana	469	38
Burundi	340	17
Cameroon	329	16
Cape Verde	173	6
Central African Republic	219	10
Chad	371	23
Comoros	137	6
Congo	146	9
Djibouti	213	11
Ethiopia	167	8
Gabon	115	3
Gambia	107	9
Ghana	305	21
Guinea	191	10
Guinea-Bissau	202	9
Ivory Coast	215	12
Kenya	650	47
Lesotho	131	13
Madagascar	258	14
Malawi	112	8
Mali	199	10
Mauritius	65	4
Mozambique	205	6
Namibia	297	24
Niger	351	16
Nigeria	139	10
Rwanda	150	9
Sao Tome and Principe	175	5
Senegal	750	33
Seychelles	125	5
Sierra Leone	296	26
Swaziland	148	14
Tanzania	176	15
Uganda	199	19
Zambia	152	16
Zimbabwe	403	29

continued

	DELIVERIES ($ IN THOUSANDS)	STUDENTS TRAINED
AMERICAN REPUBLICS	**11,243**	**2,194**
Antigua-Barbuda*	16	3
Argentina	300	48
Bahamas, The	75	23
Barbados*	37	4
Belize	140	20
Bolivia	1,075	131
Brazil	250	20
Chile	288	159
Colombia	2,126	881
Costa Rica	228	52
Dominica*	42	7
Dominican Republic	754	133
Ecuador	800	93
El Salvador	300	45
Grenada*	49	10
Guatemala	190	19
Guyana	99	12
Honduras	1,357	216
Jamaica	450	74
Mexico	722	111
Panama Canal Area Military Schools	798	**
Paraguay	349	31
St. Kitts and Nevis*	59	10
St. Lucia*	49	8
St. Vincent and Grenadines*	76	15
Trinidad and Tobago	49	3
Uruguay	339	33
Venezuela	226	33
EAST ASIA AND PACIFIC	**5,559**	**542**
Korea	273	69
Mongolia	108	4
Papua New Guinea	100	7
Philippines	2,548	265
Singapore	20	4
Solomon Islands	20	2
Thailand	2,349	183
Tonga	62	5
Vanuatu	31	2
Western Samoa	48	1
EUROPE	**9,041**	**612**
Albania	180	12
Belarus	97	3
Bulgaria	279	13
Czech Republic	466	23
Czechoslovakia	58	5
Estonia	88	12
Greece	256	78
Hungary	697	30
Kazakhstan	163	8
Latvia	111	9
Lithuania	148	7
Malta	53	7
Poland	689	36
Portugal	1,000	44
Romania	310	15
Russia	471	28
Slovakia	127	7
Slovenia	95	2
Spain	240	42
Turkey	3,100	213
Ukraine	413	18
NEAR EAST AND SOUTH ASIA	**6,993**	**561**
Algeria	137	12
Bahrain	103	23
Bangladesh	460	33
Egypt	1,754	153
India	362	21
Jordan	500	50
Lebanon	576	40
Maldives	104	6
Morocco	1,140	89
Nepal	154	11
Oman	100	16
Sri Lanka	387	15
Tunisia	1,216	92
GENERAL AND NON-REGIONAL COSTS	**872**	**-**
WORLDWIDE***	**42,500**	**4,448**

*These countries comprise the Eastern Caribbean.
**Numbers for students trained are counted within totals of their respective countries.
***In fiscal 1995, defense training programs support Building Democracy ($13.1 million) and Promoting Peace ($13.2 million).
DSAA

U.S. Collective Defense Treaties

(As of June 30, 1994)

NORTH ATLANTIC TREATY

Belgium, Canada, Denmark, France, Germany, Greece, Iceland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Turkey, United Kingdom, United States (Signed April 4, 1949)

ANZUS TREATY

Australia, New Zealand, United States (Signed Sept. 1, 1951)*

PHILIPPINE TREATY

Philippines, United States (Signed Aug. 30, 1951)

SOUTHEAST ASIA TREATY

Australia, France, New Zealand, Philippines, Thailand, United Kingdom, United States (Signed Sept. 8, 1954)**

JAPANESE TREATY

Japan, United States (Signed Jan. 19, 1960)

REPUBLIC OF KOREA TREATY

Republic of Korea, United States (Signed Oct. 1, 1953)

RIO TREATY

Argentina, Bahamas, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Trinidad and Tobago, United States, Uruguay, Venezuela, (Signed Sept. 2, 1947)

*As of Sept. 17, 1986, the United States suspended obligations under the treaty between the United States and New Zealand.
**By decision of the SEATO Council of Sept. 24, 1975, the organization ceased to exist as of June 30, 1977. The collective defense treaty remains in force.
U.S. State Department

Service and Casualties In Major Wars and Conflicts

(As of Sept. 30, 1993)

		NUMBER SERVING	BATTLE DEATHS	OTHER DEATHS	[illegible]
Revolutionary War 1775-1783	Army	—	4,044	—	[illegible]
	Navy	—	342	—	[illegible]
	Marines	—	49	—	[illegible]
	Total	—	4,435	—	[illegible]
War of 1812 1812-1815	Army	—	1,950	—	4,000
	Navy	—	265	—	[illegible]
	Marines	—	45	—	[illegible]
	Total	286,730	2,260	—	[illegible]
Mexican War 1846-1848	Army	—	1,721	11,550	[illegible]
	Navy	—	1	—	[illegible]
	Marines	—	11	—	[illegible]
	Total	78,718	1,733	11,550	[illegible]
Civil War (Union Forces Only)* 1861-1865	Army	2,128,948	138,154	221,374	[illegible]
	Navy	—	2,112	2,411	[illegible]
	Marines	84,415	148	312	[illegible]
	Total	2,213,363	140,414	224,097	[illegible]
Spanish-American War 1898	Army	280,564	369	2,061	[illegible]
	Navy	22,875	10	—	[illegible]
	Marines	3,321	6	—	[illegible]
	Total	306,760	385	2,061	[illegible]
World War I Apr. 6, 1917-Nov. 11, 1918	Army **	4,057,101	50,510	55,868	[illegible]
	Navy	599,051	431	6,856	[illegible]
	Marines	78,839	2,461	390	[illegible]
	Total	4,734,991	53,402	63,114	[illegible]
World War II Dec. 7, 1941-Dec. 31, 1946***	Army **	11,260,000	234,874	83,400	[illegible]
	Navy	4,183,466	36,950	25,664	[illegible]
	Marines	669,100	19,733	4,778	[illegible]
	Total	16,112,566	291,557	113,842	[illegible]
Korean Conflict**** June 25, 1950-July 27, 1953	Army	2,834,000	27,709	[illegible]	[illegible]
	Navy	1,177,000	475	[illegible]	[illegible]
	Marines	424,000	4,270	[illegible]	[illegible]
	Air Force	1,285,000	1,198	[illegible]	[illegible]
	Total	5,720,000	33,652	[illegible]	[illegible]
Vietnam Conflict***** Aug. 4, 1964-Jan. 27, 1973	Army	4,368,000	30,918	[illegible]	[illegible]
	Navy	1,842,000	1,631	[illegible]	[illegible]
	Marines	794,000	13,082	[illegible]	[illegible]
	Air Force	1,740,000	1,739	[illegible]	[illegible]
	Total	8,744,000	47,369	[illegible]	[illegible]

*[illegible] ... Estimates of the number who served range from 600,000 to 1,500,000. [illegible] ... In addition, an estimated 26,000 to 31,000 [illegible]

**[illegible]

***[illegible]

****[illegible] ... available as of Sept. 30, 1954, at which time 24 persons were still carried as missing in action. [illegible] ... Army Experience in the Korean War by Frank Reister, published by the Surgeon General of Department of the Army in [illegible] ... Korea, and includes deaths resulting from injuries, suicides, homicides and disease.

*****[illegible] the period Aug. 4, 1964, through Jan. 27, 1973 (date of cease-fire). Wounds not mortal exclude 150,332 persons not requiring hospital care. [illegible] of Sept. 30, 1993.

WHS

The Defense Presence by State

(As of Sept. 30, 1993)

		ARMY*	NAVY/ MARINE CORPS**	AIR FORCE	OTHER DEFENSE ACTIVITIES	TOTAL DOD
Alabama	Military	11,485	1,198	4,924	—	17,607
	Civilian	19,754	225	2,972	2,053	25,004
	Total	31,239	1,423	7,896	2,053	42,611
Alaska	Military	9,548	1,726	10,741	—	22,015
	Civilian	2,596	206	1,593	377	4,772
	Total	12,144	1,932	12,334	377	26,787
Arizona	Military	5,472	4,257	10,921	—	20,650
	Civilian	4,009	426	3,623	1,200	9,258
	Total	9,481	4,683	14,544	1,200	29,908
Arkansas	Military	1,296	245	4,647	—	6,188
	Civilian	3,217	14	948	157	4,336
	Total	4,513	259	5,595	157	10,524
California	Military	23,495	111,214	34,755	—	169,464
	Civilian	11,234	63,474	21,026	13,822	109,556
	Total	34,729	174,688	55,781	13,822	279,020
Colorado	Military	18,149	922	18,926	—	37,997
	Civilian	4,300	77	5,608	3,913	13,898
	Total	22,449	999	24,534	3,913	51,895
Connecticut	Military	28	5,334	101	—	5,463
	Civilian	493	2,664	273	1,100	4,530
	Total	521	7,998	374	1,100	9,993
Delaware	Military	27	25	4,384	—	4,436
	Civilian	205	—	1,417	116	1,738
	Total	232	25	5,801	116	6,174
District of Columbia	Military	5,284	4,919	3,699	—	13,902
	Civilian	5,943	8,513	1,214	650	16,320
	Total	11,227	13,432	4,913	650	30,222
Florida	Military	2,144	36,154	27,852	—	66,150
	Civilian	2,197	16,862	8,759	3,117	30,935
	Total	4,341	53,016	36,611	3,117	97,085
Georgia	Military	46,620	5,552	8,758	—	60,930
	Civilian	12,684	5,083	13,025	4,197	34,989
	Total	59,304	10,635	21,783	4,197	95,919
Hawaii	Military	18,831	19,419	4,708	—	42,958
	Civilian	4,839	10,198	1,398	906	17,341
	Total	23,670	29,617	6,106	906	60,299
Idaho	Military	23	1,196	3,623	—	4,842
	Civilian	613	77	799	99	1,588
	Total	636	1,273	4,422	99	6,430
Illinois	Military	1,177	16,566	7,323	—	25,066
	Civilian	9,297	2,087	4,033	1,870	17,287
	Total	10,474	18,653	11,356	1,870	42,353
Indiana	Military	2,438	564	1,569	—	4,571
	Civilian	2,805	7,047	1,343	4,271	15,466
	Total	5,243	7,611	2,912	4,271	20,037
Iowa	Military	199	74	138	—	411
	Civilian	884	5	549	127	1,565
	Total	1,083	79	687	127	1,976
Kansas	Military	17,104	328	3,705	—	21,137
	Civilian	4,496	166	1,090	710	6,462
	Total	21,600	494	4,795	710	27,599

		ARMY*	NAVY/ MARINE CORPS**	AIR FORCE	OTHER DEFENSE ACTIVITIES	TOTAL DOD
Kentucky	Military	33,110	252	330	—	33,692
	Civilian	8,387	2,355	227	2,128	13,097
	Total	41,497	2,607	557	2,128	46,789
Louisiana	Military	13,055	1,696	5,944	—	20,695
	Civilian	4,550	1,825	1,813	556	8,744
	Total	17,605	3,521	7,757	556	29,439
Maine	Military	192	1,811	2,240	—	4,243
	Civilian	294	6,707	751	193	7,945
	Total	486	8,518	2,991	193	12,188
Maryland	Military	10,826	14,783	6,150	—	31,759
	Civilian	15,090	15,028	2,293	6,212	38,623
	Total	25,916	29,811	8,443	6,212	70,382
Massachusetts	Military	3,615	875	2,353	—	6,843
	Civilian	3,810	715	4,030	1,988	10,543
	Total	7,425	1,590	6,383	1,988	17,386
Michigan	Military	661	467	3,534	—	4,662
	Civilian	5,951	118	1,761	2,029	9,859
	Total	6,612	585	5,295	2,029	14,521
Minnesota	Military	293	312	243	—	848
	Civilian	1,495	33	834	480	2,842
	Total	1,788	345	1,077	480	3,690
Mississippi	Military	261	3,209	9,096	—	12,566
	Civilian	4,661	2,895	2,851	397	10,804
	Total	4,922	6,104	11,947	397	23,370
Missouri	Military	10,557	783	4,085	—	15,425
	Civilian	10,112	156	1,280	5,631	17,179
	Total	20,669	939	5,365	5,631	32,604
Montana	Military	28	18	4,693	—	4,739
	Civilian	400	2	750	70	1,222
	Total	428	20	5,443	70	5,961
Nebraska	Military	79	482	9,308	—	9,869
	Civilian	1,935	37	1,579	139	3,690
	Total	2,014	519	10,887	139	13,559
Nevada	Military	14	1,116	7,137	—	8,267
	Civilian	261	369	1,283	175	2,088
	Total	275	1,485	8,420	175	10,355
New Hampshire	Military	17	182	145	—	344
	Civilian	600	305	299	168	1,372
	Total	617	487	444	168	1,716
New Jersey	Military	3,759	1,137	4,601	—	9,497
	Civilian	13,351	5,849	1,932	1,883	23,015
	Total	17,110	6,986	6,533	1,883	32,512
New Mexico	Military	1,005	375	14,284	—	15,664
	Civilian	3,664	128	3,835	886	8,513
	Total	4,669	503	18,119	886	24,177
New York	Military	13,220	3,275	6,957	—	23,452
	Civilian	8,715	583	4,431	2,698	16,427
	Total	21,935	3,858	11,388	2,698	39,879
North Carolina	Military	41,615	40,948	10,148	—	92,711
	Civilian	6,754	6,469	1,256	2,415	16,894
	Total	48,369	47,417	11,404	2,415	109,605
North Dakota	Military	26	10	9,818	—	9,854
	Civilian	385	1	1,251	133	1,770
	Total	411	11	11,069	133	11,624

		ARMY*	NAVY/ MARINE CORPS**	AIR FORCE	OTHER DEFENSE ACTIVITIES	TOTAL DOD
Ohio	Military	596	844	9,097	—	10,537
	Civilian	1,816	220	17,682	14,682	34,400
	Total	2,412	1,064	26,779	14,682	44,937
Oklahoma	Military	15,740	628	11,313	—	27,681
	Civilian	4,900	143	13,333	1,811	20,187
	Total	20,640	771	24,646	1,811	47,868
Oregon	Military	185	387	385	—	957
	Civilian	2,051	24	734	41	2,850
	Total	2,236	411	1,119	41	3,807
Pennsylvania	Military	1,690	2,644	571	—	4,905
	Civilian	11,346	18,718	1,630	11,227	42,921
	Total	13,036	21,362	2,201	11,227	47,826
Rhode Island	Military	46	3,521	152	—	3,719
	Civilian	256	3,440	258	149	4,103
	Total	302	6,961	410	149	7,822
South Carolina	Military	11,529	16,926	10,647	—	39,102
	Civilian	2,650	9,793	1,944	1,456	15,843
	Total	14,179	26,719	12,591	1,456	54,945
South Dakota	Military	32	9	5,390	—	5,431
	Civilian	472	—	703	90	1,265
	Total	504	9	6,093	90	6,696
Tennessee	Military	357	7,093	485	—	7,935
	Civilian	2,674	1,046	1,015	2,214	6,949
	Total	3,031	8,139	1,500	2,214	14,884
Texas	Military	54,525	5,984	41,701	—	102,210
	Civilian	20,767	1,993	26,055	7,067	55,882
	Total	75,292	7,977	67,756	7,067	158,092
Utah	Military	547	120	5,097	—	5,764
	Civilian	3,568	75	10,491	3,376	17,510
	Total	4,115	195	15,588	3,376	23,274
Vermont	Military	21	16	100	—	137
	Civilian	307	1	287	51	646
	Total	328	17	387	51	783
Virginia	Military	26,375	50,522	15,255	—	92,152
	Civilian	25,616	49,671	4,327	22,597	102,211
	Total	51,991	100,193	19,582	22,597	194,363
Washington	Military	17,305	9,334	9,482	—	36,121
	Civilian	5,663	17,555	2,168	1,632	27,018
	Total	22,968	26,889	11,650	1,632	63,139
West Virginia	Military	178	192	144	—	514
	Civilian	1,172	54	398	31	1,655
	Total	1,350	246	542	31	2,169
Wisconsin	Military	333	221	290	—	844
	Civilian	2,136	65	819	302	3,322
	Total	2,469	286	1,109	302	4,166
Wyoming	Military	14	1	3,690	—	3,705
	Civilian	196	—	696	108	1,000
	Total	210	1	4,386	108	4,705
Undistributed	Military	10,916	11,534	5,590	—	28,040
	Civilian	—	—	—	—	—
	Total	10,916	11,534	5,590	—	28,040
United States	Military	436,042	391,400	371,229	—	1,198,671
	Civilian	265,571	263,497	184,666	133,700	847,434
	Total	701,613	654,897	555,895	133,700	2,046,105

*Army includes civil functions. ** Excludes Navy temporary shore based and afloat. Includes Marine Corps.

Military Installations And Properties

(As of July 31, 1993)*

Does not include reserve centers and minor properties

United States

	ARMY	NAVY	MARINE CORPS	AIR FORCE	TOTAL DoD
Alabama	4	1		5	10
Alaska	3	1		7	11
Arizona	2		1	6	9
Arkansas	2			3	5
California	10	34	7	16	67
Colorado	3			6	9
Connecticut		1		2	3
Delaware				2	2
District of Columbia	2	4	1	1	8
Florida		14		10	24
Georgia	6	3	1	5	15
Hawaii	4	6	2	2	14
Idaho				2	2
Illinois	4	2		5	11
Indiana	3	2		3	8
Iowa				2	2
Kansas	2			2	4
Kentucky	3	1		1	5
Louisiana	1	1		3	5
Maine		2		3	5
Maryland	7	8		2	17
Massachusetts	3	1		7	11
Michigan	2	4			6
Minnesota				2	2
Mississippi		4		5	9
Missouri	2		1	6	9
Montana				2	2
Nebraska				2	2
Nevada		1		3	4
New Hampshire		1		2	3
New Jersey	4	3		2	9
New Mexico	1			3	4
New York	6	1	1	8	16
North Carolina	2	2	3	4	11
North Dakota				4	4
Ohio	1	1		9	11
Oklahoma	2			5	7
Oregon				2	2
Pennsylvania	7	7		3	17
Rhode Island		2		3	5
South Carolina	1	4	2	4	11
South Dakota	2				2
Tennessee	1	2		4	7

United States

	ARMY	NAVY	MARINE CORPS	AIR FORCE	TOTAL
Texas	6	5		15	26
Utah	4			2	6
Vermont				1	1
Virginia	12	12	3	2	29
Washington	1	6		4	11
West Virginia				2	2
Wisconsin	1			2	3
Wyoming				2	2
TOTAL UNITED STATES	112	132	22	204	470

U.S. Territories

	ARMY	NAVY	MARINE CORPS	AIR FORCE	TOTAL
Guam		3		1	4
Puerto Rico	1	2		1	4
TOTAL U.S. TERRITORIES	1	5		2	8

Foreign Areas

	ARMY	NAVY	MARINE CORPS	AIR FORCE	TOTAL
Australia		1		1	2
Belgium	1				1
Bermuda		1			1
Canada		1			1
Cuba		1			1
Diego Garcia		1			1
Germany	15			8	23
Greece				1	1
Greenland				1	1
Iceland		1			1
Italy	2	2		2	6
Japan	2	6	3	3	14
Korea, Republic of	4			2	6
Netherlands	1			1	2
Panama	1	2		1	4
Portugal				1	1
Spain		1			1
Turkey	2			4	6
United Kingdom	1	3		10	14
TOTAL FOREIGN AREAS	29	20	3	35	87

*This list, as of July 31, 1993, reflects the latest information available at time of publication. Net increases or decreases due to changes in categories following base closures and property disposal cannot be listed until the next *Almanac* publication date.

OASD(ES&BRAC)BC&U

Where to View Military History

Before visiting any military museum listed below, write ahead for hours of operation, any special admission requirements and other details. [illegible]

(As of July 31, 1993)

ARMY MUSEUMS

Name	Location
Don F. Pratt Museum	Fort Campbell, KY 42223-5335
Fort Bliss Museums Division	Fort Bliss, TX 79916-5300
Fort Bliss Museum	
3rd Cavalry Museum	
U.S. Army Air Defense Artillery Museum	
Fort George G. Meade Museum	Fort Meade, MD 20755-5094
Fort Huachuca Museum	Fort Huachuca, AZ 85613
Fort Jackson Museum	Fort Jackson, SC 29207-6325
Fort Lewis Military Museum	Fort Lewis, WA 98433-1001
Fort Sam Houston Museum	Fort Sam Houston, TX 78234-5002
Frontier Army Museum	Fort Leavenworth, KS 66027-5072
Harbor Defense Museum of New York	Fort Hamilton, Brooklyn, NY 11252-5701
National Infantry Museum	Fort Benning, GA 31905-5273
Patton Museum of Cavalry and Armor	Fort Knox, KY 40121-0208
Rock Island Arsenal Museum	Rock Island, IL 61299-5000
The Casemate Museum	Fort Monroe, VA 23651-6065
The Old Guard Museum	Fort Myer, VA 22211-5020
Tropic Lightning Museum	Schofield Barracks, HI 96857-5000
U.S. Army Aviation Museum	Fort Rucker, AL 36362-5134
U.S. Army Chemical Museum	Fort McClellan, AL 36205-5020
U.S. Army Engineer Museum	Fort Leonard Wood, MO 65473-5165
U.S. Army Field Artillery and Fort Sill Museum	Fort Sill, OK 73503-5100
U.S. Army Finance Corps Museum	Fort Benjamin Harrison, IN 46249-3040
U.S. Army John F. Kennedy Special Warfare Museum	Fort Bragg, NC 28307-5200
U.S. Army Medical Department Museum	Fort Sam Houston, TX 78234-6100
U.S. Army Military Police Corps Museum	Fort McClellan, AL 36205-5000
U.S. Army Museum of Hawaii	Honolulu, HI 96857-5000
U.S. Army Museum of the Non-Commissioned Officer	Fort Bliss, TX 79918-1270
U.S. Army Ordnance Museum	Aberdeen Proving Ground, MD 21005-5201
U.S. Army Quartermaster Museum	Fort Lee, VA 23801-5120
U.S. Army Signal Corps and Fort Gordon Museum	Fort Gordon, GA 30905-5020
U.S. Army Transportation Museum	Fort Eustis, VA 23604-5260
U.S. Cavalry Museum	Fort Riley, KS 66442-0160
Watervliet Arsenal Museum	Watervliet, NY 12189-4050
West Point Museum	West Point, NY 10996-5000
Women's Army Corps Museum	Fort McClellan, AL 36205-5000
1st Cavalry Division Museum	Fort Hood, TX 76545-5101
2nd Armored Division Museum	Fort Hood, TX 76544-5917
24th Infantry Division and Fort Stewart Museum	Fort Stewart, GA 31314-5028
82nd Airborne Division War Memorial Museum	Fort Bragg, NC 28307-0119
U.S. Army Corps of Engineers	Alexandria, VA 22310-3856
U.S. Army Chaplain Museum	Fort Monmouth, NJ 07703-5612

[illegible]

Name	Location
[illegible]	[illegible]
[illegible]	Keyport, WA 98345-[illegible]
[illegible]	Newport, RI [illegible]-5010
[illegible]	Treasure Island, CA 94130-5018
[illegible]	Washington, DC 20374-0571

MARINE CORPS MUSEUMS

Name	Location
Marine Corps Air Station Museum	El Toro, Santa Ana, CA 92709
Marine Corps Recruit Depot Museum	Parris Island, SC 29905
Marine Corps Recruit Depot Museum	San Diego, CA 92140
Marine Corps Museum/Memorial, "New Hall"	Philadelphia, PA 19106
Navy/Marine Corps Museum	Treasure Island, CA 94130
Ranch House Museum	Camp Pendleton, CA 92055
U.S. Marine Corps Air-Ground Museum	Quantico, VA 22134
U.S. Marine Corps Amphibian Vehicle Museum	Camp Pendleton, CA 92055
U.S. Marine Corps Museum	Washington, DC 20374

AIR FORCE MUSEUMS

Name	Location	Name	Location
Castle Air Museum	Castle AFB, CA 95342	Minnesota Air National Guard Museum	Minneapolis-St. Paul IAP, MN 55111
Edward F. Beale Museum	Beale AFB, CA 95903	Robins AFB Museum of Aviation	Robins AFB, GA 31098-5609
Edward H. White II Memorial Museum	Brooks AFB, TX 78235-5000	Selfridge Military Air Museum	Selfridge ANG Base, MI 48045
Edward Peterson Space Museum	Peterson AFB, CO 80914-5000	South Dakota Air and Space Museum	Ellsworth AFB, SD 57706-5000
Edwards AFB Museum	Edwards AFB, CA 93523-5000	Travis Air Force Museum	Travis AFB, CA 94535
Fairchild Heritage Museum	Fairchild AFB, WA 99011-5000	U.S. Air Force Museum	Wright-Patterson AFB, OH 45433-6518
Francis E. Warren AFB Museum	F.E. Warren AFB, WY 82005-5000	USAF Armament Museum	Eglin AFB, FL 32542-5000
Grand Forks AFB Museum	Grand Forks AFB, ND 58205	USAF Security Police Museum	Lackland AFB, TX 78236
Hill AFB Museum	Hill AFB, UT 84056-5990	USAF Space Museum	Patrick AFB, FL 32925-5153
History and Traditions Museum	Lackland AFB, TX 78236-5000	8th Air Force Museum	Barksdale AFB, LA 71110-5000
March Field Museum	March AFB, CA 92518-5000		
McChord Air Museum	McChord AFB, WA 98438-5000		
McClellan Aviation Museum	McClellan AFB, CA 95652		

Almanac Sources

The following are among the sources that provided information for this edition of the *Almanac*.

DMDC:
Defense Manpower Data Center.

DSAA:
Defense Security Assistance Agency.

OASD(ES&BRAC)BCU:
Office of the Assistant Secretary of Defense for Economic Security and Base Realignment And Closure, Base Closure and Utilization.

OATSD(LA):
Office of the Assistant to the Secretary of Defense for Legislative Affairs.

OUSD(P&R):
Office of the Under Secretary of Defense for Personnel and Readiness.

WHS:
Washington Headquarters Services.

The Pentagon

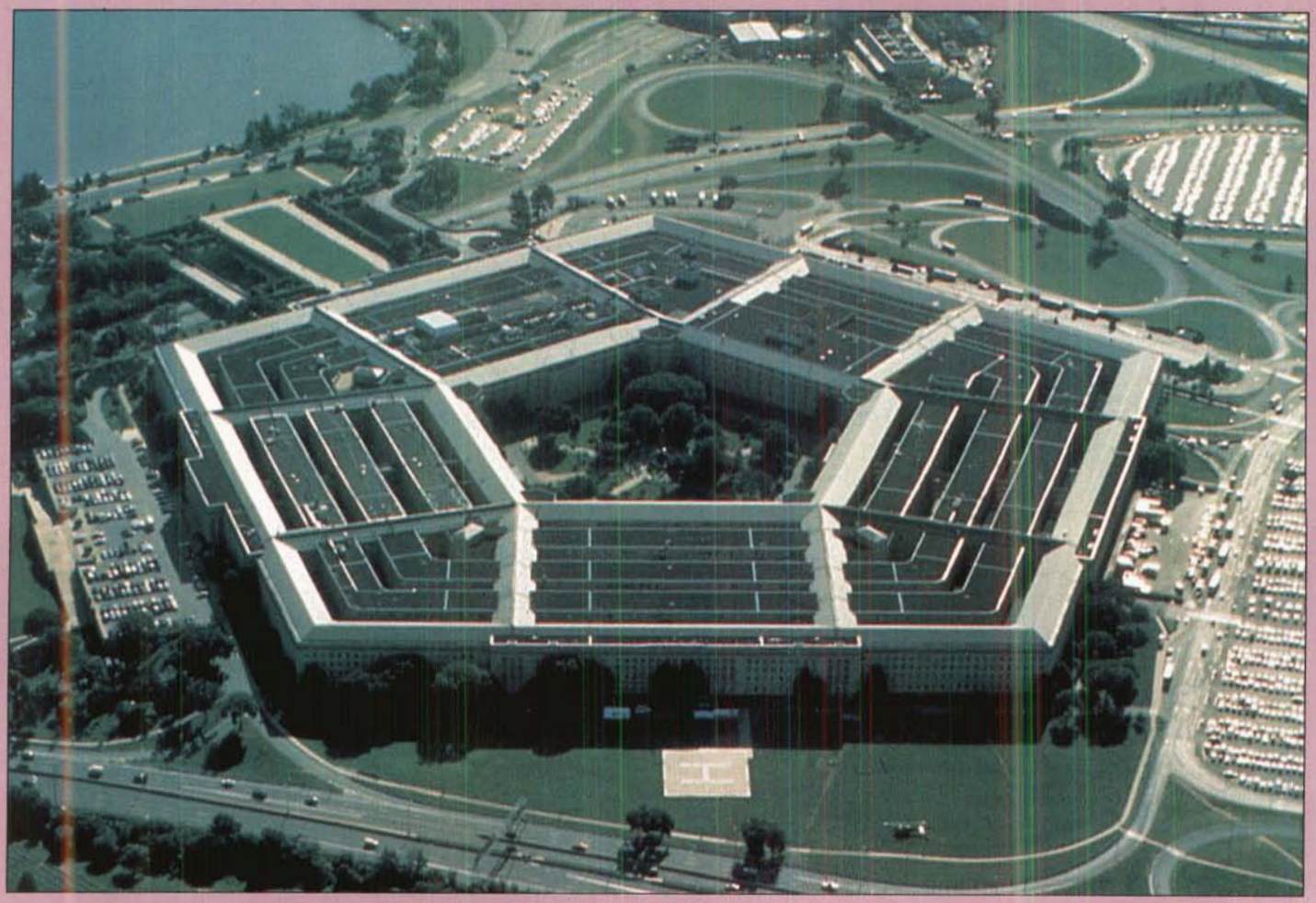
The Pentagon, headquarters of the Department of Defense, is one of the world's largest office buildings. Virtually a city in itself, the building houses more than 23,000 people.

It was built in the remarkably short time of 16 months and was completed on Jan. 15, 1943, at an approximate cost of $83 million. It consolidated 17 buildings of the War Department.

Total land area	280 acres
Original land cost	$2,245,000
Area covered by Pentagon building	29 acres
Parking space	67 acres
Capacity (vehicles)	10,329
Gross floor area	6,546,360 square feet

Net space for offices, concessions and storage	3,900,533 square feet
Length of each outer wall	921 feet
Height of building	71 feet 3.5 inches
Total length of corridors	17.5 miles

WHS(PR&PO)



ISSUE 5

CONTENTS

Numbers in some charts may not equal totals because of rounding.

Defense 94 is a publication of the Department of Defense to provide official and professional information to commanders and key personnel on matters related to Defense policies, programs and interests, and to create better understanding and teamwork within the Department of Defense. Published bimonthly by the American Forces Information Service, 601 N. Fairfax St., Room 311, Alexandria, VA 22314-2007. Telephone 1-703-274-4849; DSN 284-4849. Distributed to DoD activities through service channels. Personal subscriptions and subscriptions for non-DoD organizations are available through the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402; telephone (202) 783-3238.

The Secretary of Defense has determined that the publication of this periodical is necessary for the transaction of the public business required by law of the Department of Defense.

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402. U.S. Government Printing Office Jacket No. 300-734-40008. ISSN 0737-1217.