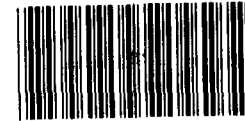


November 1990

ARMY FORCE STRUCTURE

Lessons to Apply in Structuring Tomorrow's Army



142720



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

**National Security and
International Affairs Division**

B-241242

November 29, 1990

The Honorable Michael P. W. Stone
The Secretary of the Army

Dear Mr. Secretary:

With the anticipated reduction in Army forces, it is important to keep in mind past force structure problems so they may be addressed while restructuring. This report provides the status of the Army's conversion to its Army of Excellence force structure developed in late 1983. It measures progress in correcting force structure weaknesses, describes problems that remain, and identifies what lessons the Army should apply in developing its future force structure.

This report contains recommendations to you. We are sending copies of this report to the Chairmen of the above Committees; the Secretary of Defense; the Chairmen, House and Senate Committees on Armed Services; and other interested parties. Please contact me at (202)275-4141 if you or your staff have any questions concerning the report. Other major contributors to this report are listed in appendix III.

Sincerely yours,

A handwritten signature in cursive script that reads "Richard Davis".

Richard Davis
Director, Army Issues

Executive Summary

Purpose

The collapse of the Warsaw Pact, improved U.S.-Soviet relations, and a changing security environment present new challenges to the Army as it examines how best to restructure its forces in the face of major force reductions. The National Defense Authorization Act for Fiscal Year 1991 calls on the Army to reduce its active end strength to 520,000 over the next 5 years—a reduction of over 200,000 personnel. How well the Army manages its restructuring will determine whether it can maintain combat effectiveness during this transitional period as well as into the future. GAO examined how the Army had developed and implemented its present Army of Excellence force structure to identify lessons the Army might apply in restructuring its forces.

Background

In the late 1970s, the Army adopted new force designs termed “Army 86” as a means of increasing the combat power of its divisions. However, by 1983, it had become clear that the new structure required so many people and so much equipment that the Army simply could not afford it. Hundreds of units were totally without people or equipment, and many others were seriously understaffed and underequipped. In the words of the Chief of Staff, the Army had become “hollow.”

In the summer of 1983, the Chief of Staff directed a total redesign of Army forces. In November 1983, the Army approved a new streamlined force structure termed the “Army of Excellence” as its organizational blueprint for the future. In approving the new designs, the Army sacrificed some strength in both combat and support functions and accepted more risk than it had in the past. However, Army planners emphasized that this streamlined force offered a more efficient and affordable structure.

Results in Brief

Various techniques used to economize on personnel in the Army of Excellence restructuring effort have continued appeal in the present budget-conscious era. However, because Army planners based some key decisions on their professional judgment without adequately documenting the rationale behind them, questions continue to surface over the adequacy of the new designs. Without such documentation, a valuable perspective is not available to those now tasked with further reducing Army forces.

Because the Army did not systematically monitor conversion to its new force structure, it did not identify some problems in a timely manner and has not known what progress was being made in correcting force

structure weaknesses. The Army also did not properly manage one major space-saving initiative—the Logistics Unit Productivity Systems program—which was to provide labor-saving equipment to logistical units. Because it did not ensure that these units received their required equipment and personnel and did not validate their expected gains in productivity, the Army cannot be sure that these units can perform as envisioned.

Due to funding constraints and other problems, only half of the Army of Excellence force structure is in place, and some problems that the Army sought to correct remain. The current situation presents a new opportunity to move toward greater standardization of infantry forces, reassess the mix of active and reserve forces and the adequacy of support forces, and build an affordable force.

Principal Findings

Army of Excellence Methodology Had Both Strengths and Weaknesses

The approaches used in developing the Army of Excellence had several positive features. Closing the gap between required and authorized personnel produced a more affordable force. Eliminating duplication, reducing overhead, and introducing labor-saving equipment permitted planners to add more combat forces and provide more people for understaffed units. Expanding the use of host nation personnel freed military personnel for other tasks.

However, other aspects of the methodology might have undermined confidence in the new designs. For example, planners did not adequately document how they had allocated personnel spaces to each Army branch, how criteria used to determine personnel requirements had been changed, or what risks the Army was accepting in streamlining its forces. Because professional judgment played a major role in some key decisions, the lack of documentation has raised a number of questions, including whether reduced requirements represent a prudent risk.

Uneven Progress Toward Army of Excellence Goals

Because the Army did not track conversion to the Army of Excellence or progress toward its goals, GAO calculated progress using Army force structure data. It found that, as of September 30, 1989, only about 56 percent of the Army's forces had converted. As of that date, 71 percent of its combat forces and 28 percent of its support forces were in the new

designs. The National Guard and Army Reserve have lagged behind the active Army, with 72 percent of all active forces having been converted, compared to 53 percent of the Guard and 22 percent of the Army Reserve. Conscious Army decisions and resource constraints have slowed these conversions.

The Army closed the gap between required and authorized personnel, increasing the percentage of units authorized to be fully staffed from 40 percent in 1983 to 61 percent in 1989. It also reduced positions in units that existed only on paper from 368,000 in 1983 to 87,500 in 1990. The significance of this reduction is unclear because there is no way to tell whether the original requirements were overstated or whether the Army was accepting more risk in making the reductions. Because the Army restored some personnel cuts and added more combat forces than planned, a total of about 160,500 required positions in totally and partially unresourced units remained unfilled at the end of 1989.

To increase combat forces, the Army eliminated many support units that it had been unable to staff. However, Army officials are divided between those who believe that current support forces are too austere to adequately support combat forces and those who believe that support forces could be trimmed further. Part of the debate centers around Manpower Requirements Criteria, which are used to set personnel requirements for support functions. Many units are designed below the requirements set by the criteria, raising questions about the adequacy of their personnel levels.

Although the Army sought to reduce its reliance on reserve forces to support early deploying combat forces, this reliance continues. By freezing the size of active forces at 1983 levels, the Army had to create new support units in the reserves, where it expected growth. Some support functions, such as civil affairs, are now almost entirely in the reserves. The unrestrained looting that occurred in Operation Just Cause in Panama has been attributed to the late arrival of reserve civil affairs personnel. More recently, this reliance required an early call-up of reserve forces to support Operation Desert Shield in the Persian Gulf.

The Army was unable to standardize National Guard non-mechanized infantry divisions for several reasons. Some designs were not suited to the Guard and had to be modified; others required more modernized equipment than funding permitted. In some cases, the Guard simply would not accept changes requiring it to give up too many positions or

too much equipment. Had the Army made more progress in standardizing these forces, it could have reduced personnel in these divisions and the support units needed to sustain them. Instead, the Army had to leave other required positions unfilled to retain this unwanted structure in the Guard.

Looking Ahead

Realistically projecting the resources that the Army will have to finance its future force structure is a critical first step in building an affordable Army. With the changed security environment, the Army will need to reexamine some decisions made under the Army of Excellence—the extent to which the Army can partially staff its units in peacetime and the extent to which it can rely on reserve forces. With increased warning time related to a European conflict, the Army can consider options that until now seemed less acceptable. Above all, sound management will be crucial if the Army is to preserve the gains made in force quality and readiness over the past decade.

Recommendations

As the Army develops its future force structure, GAO recommends that the Secretary of the Army ensure that the Army (1) fully documents the basis for changes in its force designs, including the risks entailed in reducing personnel requirements; (2) tracks major force design initiatives and progress toward their goals; (3) resolves the internal disagreement over how Manpower Requirements Criteria are set and applied; (4) assesses the implications of retaining National Guard non-mechanized infantry divisions in nonstandard designs; and (5) corrects problems related to the Logistics Unit Productivity Systems program.

Agency Comments

The Department of Defense agreed with GAO's recommendations but said that existing Army systems are sufficient to document changes in force designs and track force structure initiatives. GAO does not believe the systems the Department cited offer the degree of oversight needed to provide an overall view of major initiatives, especially those involving changes across Army branches. The Department cited Army actions to respond to GAO's other recommendations.

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Abbreviations

AOE	Army of Excellence
CBO	Congressional Budget Office
DOD	Department of Defense
GAO	General Accounting Office
LUPS	Logistics Unit Productivity System
MARC	Manpower Requirements Criteria
TRADOC	Training and Doctrine Command

Introduction

With the collapse of the Warsaw Pact, improved U.S.-Soviet relations, a changed security environment, and continuing budgetary pressures, Army planners must adjust the Army's forces to match a much different national security environment within the bounds of still unspecified, but clearly reduced budgetary resources. Given the uncertainties that remain, this task poses important challenges to Army planners. How well the Army plans for and manages its restructuring will, in large measure, determine whether it can maintain combat effectiveness during this transitional period as well as into the future.

Believing that the Army could benefit from an analysis of past restructuring efforts, we examined how the Army had developed its current Army of Excellence (AOE) force structure—to identify what lessons the Army could apply to its current task.

Growing Recognition of the Need to Redesign Army Forces

Several major events of the 1970s and early 1980s led to a growing recognition within the Army that it needed to redesign its forces. First, the October 1973 Arab-Israeli war underscored the lethality of modern anti-tank weapons and the need to increase combat effectiveness in battle-field units. Second, the Soviet Union's continued military buildup and modernization program had led Army leadership to conclude that more combat forces were needed to counter the Soviet's increased armor threat. Third, there was a growing recognition that, in addition to the Warsaw Pact threat to North Atlantic Treaty Organization forces, the Army faced increasing threats in other regions, especially the Third World, that would require rapidly deployable contingency forces. Fourth, the Army had become increasingly disenchanted with its existing war-fighting doctrine, which many viewed as too defensively oriented. Finally, the Chief of Staff of the Army had begun to voice his concerns that inadequate resourcing was creating a "hollow" Army. That is, many units¹ did not have sufficient people or equipment to conduct their assigned missions or carry out effective training. In fact, hundreds of required Army units were totally without people or equipment and existed only on paper.

The Previous Design—Army 86

As a result of these perceived deficiencies, the Army engaged in intensive self-study from 1975 to 1983 to achieve a consensus on a new doctrine to match the conditions of the modern era and on new Army force

¹The term "units" in this report refers to battalions, companies, detachments, and other organizational entities, which vary widely in size.

designs to meet a broader range of conflicts. Table 1.1 describes the major elements of the Army's force structure that the Army sought to redesign.

Table 1.1: Major Elements of the Army's Force Structure

Level of organization	Description
Echelons above corps	Elements such as theater armies and major commands that have authority over corps.
Corps	The Army's five active corps command, control, and support several divisions. Each corps is the primary command and control headquarters for the land battle within its theater. It has both tactical and logistical responsibilities and provides auxiliary combat arms and services such as artillery, corps support, air defense, aviation, engineering, intelligence, and military police to its divisions.
Division	<p>The Army's 28 divisions serve as its major tactical units. Each consists of three brigades and 9 to 10 maneuver battalions and combines the combat arms and services required for sustained combat. Some of the forces to support and sustain divisional operations are provided by the corps and echelons above corps.</p> <p>Heavy divisions include the armored and mechanized divisions, each with about 17,000 personnel and heavy combat equipment designed primarily to defend Western Europe.</p> <p>Light infantry divisions have about 10,000 personnel, possess lighter equipment than the heavy divisions, and are designed to rapidly deploy in contingencies. The 82nd Airborne and 101st Air Assault Divisions are slightly larger light divisions with special air capabilities. The 9th Motorized Division has served as a test bed for new light technology.</p> <p>National Guard infantry divisions have an average of 16,000 personnel and are intended to reinforce troops defending Europe and to provide support in contingency conflicts.</p> <p>The 2nd Infantry Division is a division uniquely designed to meet the special requirements of defending the Republic of Korea.</p>
Brigade	Each division consists of three brigades, each consisting of two to five combat battalions. Brigades may be used as an integral part of the division or on independent missions.
Battalion	Battalions normally consist of five companies and are tactically and administratively self-sufficient. They vary in size, consisting of between 550 and 825 soldiers, depending on their type, and are capable of independent operations of limited duration and scope.
Separate brigade	Separate brigades are independent units that possess the support forces necessary to sustain their operations. The corps commander can use them either in the corps battle or in independent operations.

The first of several efforts to redesign Army forces from 1975 to 1983 was the Division Restructuring Study, which was undertaken in 1975 and 1976. However, Army leadership did not approve the new force

designs it produced because it believed that the study had been done too quickly, without enough analysis and without enough Army-wide participation. Instead, the Army initiated a series of studies in September 1978 to develop new force designs for the full spectrum of Army forces. These studies were collectively termed "Army 86" because the organizational designs developed were to be put into place by 1986. Unlike the previous Division Restructuring Study, the Army 86 studies were characterized by detailed analysis and extensive Army-wide participation that continued into 1983. During this same period, work also began on revising the Army's war-fighting doctrine.

In October 1979, the Army's Chief of Staff approved the first products of the Army 86 studies—new designs for the Army's armored and mechanized divisions. The new designs increased the combat effectiveness of these divisions and, in the process, increased their size from about 14,000 to about 20,000 soldiers. During this period, work continued toward a new war-fighting doctrine, which culminated in the publication of its current "AirLand Battle" fighting doctrine in 1982. This new doctrine was more offensively oriented than its predecessor and assigned the primary role in directing the battle to the corps commander rather than the division commander.

Although the Chief of Staff accepted the new war-fighting doctrine and heavy division design, he was less satisfied with the proposed design for a lighter infantry division. Army planners had found it difficult to design forces light enough to be rapidly deployed in contingency operations, yet heavy enough to be used in the heavily armored battle envisioned in Europe. After rejecting three successive proposals for a lighter infantry division, the Chief of Staff finally accepted a fourth version for planning purposes in late 1980. Despite this approval, the design was still not widely accepted because many believed that its size would prevent its being rapidly deployed in contingencies. At nearly 18,000 soldiers, this lighter division was not much smaller than the 20,000-soldier heavy division.

Significant Affordability Problems Surfaced During the Transition to Army 86

As the Army began its transition to the new Army 86 designs, major problems began to surface. As early as late 1981, Army planners concluded that the Army would have to staff many units significantly below their required levels if it was to move to the new designs without a major increase in its overall strength. Nevertheless, the Army proceeded with its plans to move to the Army 86 designs. It approved organizational models for the heavy divisions and began to convert some

units to their new designs, deliver equipment, and develop new training courses. However, as these activities proceeded into 1983, difficulties with the Army 86 designs continued to surface. For example, the Army found that when it incorporated the Army 86 combat division designs into its war-gaming models, the models calculated enormous combat service support requirements. (See Glossary for the definitions of “combat,” “combat support,” and “combat service support” functions.) On the basis of these calculations, the Army would be unable to fill about 368,000 of the required Army 86 positions. Moreover, the Army found that it would (1) need an additional 25,000 personnel to enable it to convert its heavy divisions to their new designs, (2) be unable to staff the new designs due to serious shortages of personnel with the required skills, and (3) need an additional \$5 million to develop new training and doctrinal literature and \$7 billion to construct new facilities to accommodate the newly designed forces.

Finally, in June 1983, with the arrival of a new Army Chief of Staff, came the firm realization that the defense buildup of the late 1970s and early 1980s could not be sustained in the face of the serious budget deficit that the United States faced. Only so much defense could be funded, and it was clear that the Army could not realistically expect the Congress to approve the end strength increase needed to fill out the new designs. Moreover, the new Chief of Staff firmly believed that the Army needed to move in the direction of lighter forces to respond to the need for rapidly deployable, flexible forces.

The New Design— Army of Excellence

At the August 1983 Army Commanders' Conference, a consensus was reached that the Army 86 designs needed to be substantially modified. At the request of the Chief of Staff, the Commander of the Army's Training and Doctrine Command (TRADOC) briefed the conference on the following problems the Army faced in resourcing the Army 86 force structure and the major deficiencies he saw in the Army's force structure:

- The heavy divisions, at over 19,000 soldiers, were still too heavy to quickly deploy or easily move about the battlefield and could not be fully staffed without an increase in the Army's end strength. Without an increase, the Army would be forced to continue “rounding out” its active divisions with reserve forces—a trend the Commander saw as undesirable.²

²Typically, a “rounded-out” Army division is comprised of one reserve and two active brigades.

- Light forces needed to be standardized; the airborne and air assault divisions were too large and perpetuated inefficient one-of-a-kind organizations. The Army's experiment with a high technology, light division design had not improved the operational effectiveness or deployability of the light division as intended.
- Corps forces were seriously short of personnel and equipment, particularly in the areas of aviation, field artillery, and engineering. Corps commanders did not possess the assets needed to enable them to carry out their key role of directing the battle under the new AirLand Battle doctrine.

The TRADOC Commander concluded that with its present force structure, the Army could neither meet the challenges posed by a broad range of contingencies nor respond quickly enough to certain types of conflicts. Moreover, the Army did not possess the resources needed to adequately fill the Army 86 personnel requirements and could not expect the Congress to approve an increase in active Army forces to enable it to do so.

The TRADOC Commander suggested several options for dealing with these problems. These included reducing forces in Europe, converting some active and/or reserve heavy divisions to light divisions, shifting some heavy missions to reserve forces to enable active forces to pick up light missions, and designing a smaller 10,000-soldier light division. In evaluating these options, he believed that the Army would continue to need its heavy forces to counter the Soviet threat to Western Europe and should therefore retain all of its active component divisions. Preferring the option of developing a 10,000-soldier light division, he asserted that by designing such a division, the Army could save 25,000 spaces in the active force and an additional 30,000 spaces in the reserve forces. These personnel spaces could then be used to form more divisions, reduce the Army's reliance on the reserves to round out active component divisions, or fill the personnel shortages in support units.

The Army commanders generally agreed with the assessment of the Army's force structure problems as presented at the conference. Accordingly, the Army Chief of Staff directed TRADOC to lead a study effort to redesign Army forces and to present the proposed designs and recommendations at the next Army commanders' conference in October 1983. Although no name was given to this study at the time, the new force designs that it produced became known as the "Army of Excellence." These new force designs were to become the blueprint for the Army's organization for the foreseeable future.

Objectives, Scope, and Methodology

Our major objectives were to (1) evaluate the methodology used in designing the AOE force, including the economizing mechanisms employed to achieve it; (2) show the extent of the Army's conversion to AOE and progress in correcting identified force structure weaknesses; and (3) relate the lessons learned to the key issues that the Army faces today in restructuring its forces.

In tracing AOE's history, we reviewed historical documents and interviewed key Army personnel who had either participated in the study or administered the Army's conversion to the AOE force structure. We performed this work at the Department of the Army Headquarters in Washington, D.C.; Forces Command at Fort McPherson, Georgia; the Combined Arms Center at Fort Leavenworth, Kansas; the Logistics Center at Fort Lee, Virginia; TRADOC Headquarters at Fort Monroe, Virginia; and the Infantry Center and School at Fort Benning, Georgia.

To gain an understanding of AOE goals and to obtain available information on the Army's methodology for developing the AOE designs, we interviewed key Army personnel involved in the study and Army historians at Army Headquarters, TRADOC Headquarters, and the Combined Arms Center. At the latter two locations, we also reviewed historical documents, including transcripts of interviews with key Army personnel involved in the study.

To measure progress in implementing AOE and in correcting force structure weaknesses, we held discussions with force integration personnel at Army Headquarters and analyzed computer-generated Army force structure data as of September 30, 1983 (just prior to AOE) and as of September 30, 1989 (the latest data available at the time of our analysis). We did not verify the accuracy of this data but obtained assurances from Army headquarters officials that it is updated semiannually and is considered the authoritative source on the Army's force structure. We also compared the unit structures of various elements of the pre- and post-AOE force structures by analyzing data from Army 86 and AOE reports and by evaluating other Army statistical data.

To gain a perspective on the strengths and weaknesses of the approaches followed in AOE, we obtained the views of three key general officers connected with the AOE study and its implementation. We also discussed the impact of some force structure changes on active and reserve forces with officials from Army Headquarters, Forces Command, and the Infantry Center and School.

In relating our findings to current restructuring efforts, we received briefings from the Army on its plan for reducing its forces through 1994 (Quick Silver I) and on the status of concepts being developed for the Army's follow-on doctrine to AirLand Battle (AirLand Battle Future). We also reviewed the Army's January 1990 strategy statement for the 1990s, surveyed contemporary periodical literature, and discussed various proposals advanced for the future direction of Army force structure with Army officials. We talked with these individuals about the relevance of progress made under AOE to current restructuring efforts.

We conducted our review from September 1989 to July 1990 in accordance with generally accepted government auditing standards.

Methodology Used to Develop AOE Had Both Strengths and Weaknesses

The AOE restructuring effort represented a major change from the way previous restructuring efforts had been conducted. Whereas Army 86 planners had developed force requirements directly from doctrine without regard to future resource availability, the AOE task force started with the size of the Army's existing authorized force and sought to design affordable forces within this constraint. To achieve desired increases in combat forces and stay within this personnel ceiling, the AOE task force identified various ways to reduce requirements. In reducing the number and size of the Army's combat and support units, the Army made a conscious decision to accept more risk in most functions than it had in the past.

The methodology followed in developing AOE had many positive aspects. The task force, using various techniques, produced a force that it believed was more combat effective, more efficient in terms of support capabilities, and better suited to carry out the new AirLand Battle fighting doctrine. However, the task force did not adequately document why some key decisions had been made or what additional risks the Army was accepting in moving to the AOE force structure. The major role that judgment played in some key decisions, coupled with this lack of documentation, might have contributed to a lack of confidence on the part of some Army personnel about the adequacy of some AOE force designs. Army planners involved in restructuring future Army forces can learn from the strengths and weaknesses of the methodologies employed in the AOE study.

Army Chief of Staff Set Direction of AOE Study

On September 1, 1983, the Army Chief of Staff issued his guidance on the AOE redesign effort. His guidance defined organizational responsibilities for the study, established basic assumptions and ground rules, and specified certain design features.

With respect to organization, the Chief of Staff named TRADOC to oversee the project and keep Army Headquarters staff informed on the status of the study. The Combined Arms Center, Fort Leavenworth, Kansas, conducted the actual study with participation by Army Headquarters, Forces Command, and the various TRADOC schools and centers—infantry, armor, field artillery, and so on (referred to in this report as the "task force"). The Army's Logistics Center at Fort Lee, Virginia, along with its associated schools and centers, designed the logistical and administrative forces to support the combat and combat support forces designed by the task force at Fort Leavenworth. The Logistics Center also reviewed factors used to calculate support requirements as a means

of identifying opportunities to reduce the number of required Army personnel. Major Army commands provided feedback on the proposed designs as the study progressed.

The primary ground rule was that the task force would confine its design efforts to those combat and support units that would be deployed in a conflict. That is, the task force could not redesign the Army's general support forces or reduce the size of the Army's pool of individuals not assigned to a unit¹ as a means of increasing the personnel spaces available for its redesign effort. The Chief of Staff also excluded theater, strategic, and mobility forces from the design effort.

The Chief of Staff specified that the task force should look for opportunities to consolidate functions and weapon systems at higher organizational levels as a means of achieving economies of scale and of reducing duplicative overhead. For example, some functions and assets might be moved from the divisions to the corps, thereby consolidating headquarters companies. However, the task force was not to make such a consolidation unless it would result in eliminating 33 percent of the personnel associated with that function. Those functions and capabilities that would always be needed by the unit in conflict were to remain within the unit regardless of the savings that would be achieved by transferring personnel or assets to a higher level.

The Chief of Staff specified three key features that he desired for the new force structure. First, because he believed that additional combat forces were needed, he asked the task force to determine whether the Army could activate a new division by fiscal year 1986 and another by 1992. These activations would increase the Army's size from 24 to 28 divisions, since 2 new divisions had already been programmed for this period. Second, he directed the continued development of a new 10,000-soldier light infantry division, which the Combined Arms Center had begun to develop at his request in July 1983. He specified that the new light infantry division should be oriented to performing contingency missions in low- to mid-intensity conflicts and be able to deploy in less than 500 airlifts by C-141 aircraft. Third, he told the task force to assume that the Army's active force of about 780,000 soldiers would remain constant through fiscal year 1990 and that National Guard and Army Reserve forces would grow by 134,000 during this period.

¹This pool includes trainees, transients, prisoners, and students.

Task Force Employed Various Mechanisms to Economize on Force Structure

The basic problem that the task force faced was how to pare down Army 86 requirements of 1.17 million personnel spaces associated with the forces it was redesigning to 998,700—the number of existing authorized spaces for these same forces. In making the required reductions, the Army would be equating personnel requirements to authorized personnel, thereby eliminating “hollowness” in the forces. That is, the AOE Army would contain no required units that existed on paper only, and to the extent possible, units would be designed to be staffed at 100 percent of their requirements.²

Reducing the Army’s personnel requirements to 998,700 was made more difficult because the Chief of Staff had also asked the task force to examine whether it could add more combat forces to the Army’s force structure. To add these forces yet stay within the 998,700- personnel ceiling, the task force identified various ways to reduce personnel. These included

- eliminating excess structure in divisions, separate brigades, and armored cavalry regiments by consolidating functions at higher levels, eliminating duplication, and accepting more risk;
- converting two active component infantry divisions, the uniquely configured 2nd Infantry Division in Korea, the 9th High Technology Light Division, and six National Guard infantry divisions to the task force’s new 10,000-soldier light infantry division design;
- converting the air assault division and airborne division to designs based on this new light division design but with unique capabilities added;
- implementing Logistics Unit Productivity Systems (LUPS) initiatives, which were designed to increase the productivity of logistics units through labor-saving equipment and functional reorganizations;
- substituting civilians and contractors for some military personnel and enlisting additional host nation support to fill some personnel requirements; and
- converting some aviation units to new designs; introducing new communications equipment requiring fewer operators; implementing a new Combat Field Feeding System that would require fewer cooks; and eliminating some military police, transportation, field artillery, and other units altogether.

²In reality, the task force recognized that certain units such as medical units would remain staffed at less than 100 percent because not all requirements for such units need to be filled in peacetime.

Table 2.1 summarizes the reductions and additions to the force structure envisioned by the AOE task force. We compiled these figures from historical records that sometimes conflicted. Therefore, the figures shown should be considered rough approximations of the additions and subtractions that the task force intended.

Table 2.1: The AOE Study's Planned Additions and Reductions to the Army's Force Structure

Additions and reductions	Associated personnel spaces
Additions^a	
Activate one new light active component division and related support	45,400 ^b
Increase light corps forces	21,800
Increase heavy corps forces	51,000
Enhance special operations forces	17,100
Miscellaneous additions	19,200
Total additions	154,500
Reductions^a	
Reductions in division size	
Reduce the size of heavy divisions	88,500
Convert two active infantry divisions to new light designs	28,000
Convert airborne, air assault, and high technology light division to new designs	45,300
Convert six National Guard infantry divisions to the new light infantry design	48,000
Space-saving initiatives	
Substitute civilians and contractors for military personnel	5,500
Implement labor-saving initiatives and other productivity enhancements	29,000
Substitute host nation support for military personnel	77,000 ^c
Other	
Restructure aviation units	6,700
Modernize Army communications	17,500
Implement combat field feeding system	9,700
Eliminate requirements for some units	6,700
Other adjustments	3,900
Total reductions	365,800

^aPersonnel spaces transferred from the divisions to corps and higher levels are accounted for as both additions and reductions.

^bThe task force recommended one new active division. The figure shown does not include the personnel needed to complete two new reserve divisions, which were previously programmed and built mostly from existing forces.

^cGAO estimate based on anticipated increase in host nation support documented by bilateral agreements.

The task force intended the personnel spaces saved through these economizing measures to offset the forces that were added as well as to reduce hollowness in the force. However, while the identified savings were sufficient to cover the additional combat forces, they were insufficient to totally eliminate hollowness in the Army's force structure. Requirements still exceeded authorizations by over 100,000 personnel spaces. Accordingly, the task force counted on a follow-on Army effort led by the Logistics Center to redesign support units at the corps and echelons above corps to produce some of these additional space savings. In addition, the TRADOC schools and centers proceeded to revise the factors used to determine support force requirements, thereby further reducing the number of required support units and their associated personnel. These TRADOC efforts continued into 1984 after the task force presented its primary results in October 1983. Army officials could not tell us exactly how many personnel requirements had been eliminated through TRADOC's efforts.

TRADOC Schools Developed AOE Designs Within Allocations Set by Task Force

The task force established the parameters of the new Army structure, including the overall size and composition of the divisions and separate brigades, according to guidance provided by the Chief of Staff. However, it was the TRADOC schools and centers (armor, infantry, aviation, and so on) that developed the specific designs for each divisional component. The task force gave the schools personnel allocations for each type of unit and then directed them to develop the most combat-effective designs possible within these allocations. For example, the Infantry School designed each type of infantry battalion (light, airborne, and mechanized) based on the ceilings that the task force set.

To arrive at these allocations, the task force first determined the percentage share of the Army's authorized personnel in each branch of the existing force structure. Then, on the basis of the individual and collective judgment of the task force members, the task force adjusted these shares. For example, it increased the shares of the aviation, field artillery, and air defense branches because task force members believed that these branches would need more than their existing percentage shares for the envisioned designs. Similarly, the task force decreased the share of the engineering branch because it suspected that requirements were inflated and decreased the share of the adjutant general branch because it believed that increased automation would compensate for the personnel reductions. The task force reduced the allocation for the engineering branch, for example, from 22 percent to 11 percent of the total available personnel spaces.

For combat service support functions, the task force gave the Logistics Center a lump-sum allocation, which it then divided among the schools and centers associated with support forces—ordnance, transportation, quartermaster, and so on. Priority was given to providing assets to divisions and corps, with risks accepted in support functions at higher levels whenever possible. As a result, about half of the branches representing support functions received allocations that were generally less than their percentage representations in the existing force. In commenting on our draft report, the Department of Defense (DOD) noted that the proportion of personnel spaces for each branch had changed as designs were modified during the first 2 years of AOE's implementation.

AOE Methodology Might Have Contributed to Continuing Questions About the AOE Designs

In tracing the methodology used to develop AOE, we found many positive aspects of the task force's approaches applicable to today's environment. First, the task force started with the recognition that the Army could not realistically expect an increase in its active component end strength, given increasing budgetary pressures. This recognition led the task force to design a force that it believed to be effective, yet affordable. Second, in seeking to eliminate unnecessary duplication, reduce overhead, and introduce labor-saving equipment, the task force built what appeared to be a more efficient force structure. Third, in identifying military requirements that could be filled by host nation personnel, civilian employees, and contractors, the task force was able to reduce the number of positions that had to be filled by military personnel.

However, other aspects of the methodology had drawbacks. Due to the limited time frame permitted for the study, the task force relied heavily on its collective judgment in making some decisions but did not always document its basis for them. For example, although the task force summarized the results of the AOE study in three published reports, these reports do not explain how the task force allocated personnel spaces to the TRADOC schools and centers for designing their portions of the force structure or why certain branches were given more or less than their pro rata shares of the available personnel spaces. Internal classified records at the Combined Arms Center provide some insight into these decisions. However, these records are not readily available to Army personnel.

Neither the AOE reports nor internal classified records showed what revisions had been made to the factors used in determining personnel requirements, the bases for the changes, or the personnel savings that

resulted from the changes. Part of the impetus for these revisions was the task force's suspicion that using these factors had inflated personnel requirements. According to one Army official, some of these factors had not been revised for years and had been set by schools and centers—which are proponents for their respective branches—without much independent scrutiny.

However, another impetus toward revising these factors was a conscious decision under AOE that the Army could afford to accept the additional risk entailed in reducing requirements for some support functions. Unfortunately, because AOE records did not clearly identify how these factors had been changed or what risks had been accepted in reducing their requirements, it is not possible to distinguish between reductions due to revised criteria and reductions due to the acceptance of more risk.

A draft Logistics Center report on the new designs for support forces described risks in some support functions in broad terms. However, although the task force originally planned to issue a fourth AOE report that was to cover AOE designs for the corps and echelons above corps, which would have included these support functions, the Army never published this volume. The publicly available volumes on AOE's heavy and light divisions allude to certain reduced capabilities but do not clearly identify the risks accepted in reducing the size of the Army's divisions.

Army personnel involved in the AOE study explained that some key decisions had been based on the professional judgment of task force members rather than on analytical data. For example, decisions to reduce the number or size of a specific type of unit were sometimes based on the personal experiences of the task force members. Reductions in some support functions were made in some instances because task force members believed that requirements were inflated. Other reductions were due to the decision that, whenever possible, risks would be accepted in support functions to preserve combat capabilities.

In our opinion, the role that judgment played in some of the task force's key decisions, coupled with the fact that these decisions were not clearly documented, might have contributed to the apparent lack of consensus within the Army on the adequacy of some AOE designs. For example, one 1986 Army study on reserve forces recommended that the Army consider reducing the number of divisions so that the savings could be used to enhance the Army's support forces, which the study's authors

believed were inadequate. In 1988, we testified before the House Armed Services Committee's Subcommittee on Readiness on questions that had been raised over the adequacy of support forces to defend Europe.³ May 1990 testimony by one congressional staffmember on problems related to certain helicopters argued that inadequate AOE designs for maintenance units had contributed to operational problems.

Moreover, we encountered a great deal of skepticism during our review on the suitability of some AOE designs to the Army Reserve and the National Guard. For example, officials at Forces Command and Army Reserve Headquarters told us that some AOE logistical units had been designed with so many low-level positions that it is questionable whether the Army Reserve will ever be able to recruit enough personnel to fill them. A National Guard Headquarters official noted that the Guard has been unable to convert to AOE as quickly as planned because funding for the required equipment has been insufficient. A recent high-level review of the Army's aviation systems cited numerous structural problems relating to AOE unit designs that will require attention between 1990 and 1995. Although these pieces of evidence do not prove that the AOE designs are deficient, taken collectively, they suggest that questions remain on the adequacy of the designs.

AOE Represented Major Changes in the Army's Force Structure

The AOE task force presented its proposed force designs at the Army Commanders' Conference in October 1983, as planned. In its presentation, the task force recommended that the Army take the following actions:

- Accept a 27-division force organized into five corps with each unit staffed at 100 percent and with a single mission. Active divisions would be structured without using reserve forces to round out their designs.
- Adopt its new 10,023-soldier light infantry division design, which could be deployed in 461 airlifts and could fight not only in low-intensity settings but in the full spectrum of conflicts.
- Adopt the new light infantry division design as a base for standardizing light infantry forces.⁴

³See *Army's Ability to Support Initial Combat Operations in Europe* (GAO/T-NSIAD-88-11A, Mar. 9, 1988).

⁴The task force included the airborne, air assault, and high technology light divisions, the 2nd Infantry Division (Korea), and six National Guard infantry divisions in this recommendation, recognizing that unique capabilities would be added when necessary.

- Accept its reduced heavy division designs, in light of the fact that the reductions would not jeopardize the divisions' war-fighting capability.
- Accept its corps design improvements, which included the addition of an air defense brigade, a strengthened aviation brigade, and corps artillery assets.

According to the task force's summary report on AOE, the AOE designs offered more agile heavy divisions with increased combat capabilities; streamlined light infantry forces capable of rapid deployment; and a corps with increased artillery, aviation, and air defense to enable it to fulfill its central role in executing the Army's new AirLand Battle doctrine. The report noted that, in accepting the new designs, the Army sacrificed some strength in both combat and support functions and thereby accepted more risk than it had in the past. However, the task force emphasized that this streamlined force represented a more efficient and affordable structure.

The Chief of Staff did not approve all of the study group's recommendations at the October meeting. While he generally agreed to the new light infantry division design, he requested further revisions to the heavy divisions and did not approve conversion of the 2nd Infantry Division in Korea or the 9th High Technology Light Division to the new light infantry design. He also decided that a 28th division would be added.⁵ He also deferred decisions on reducing the size of National Guard divisions, brigades, and armored cavalry regiments and left issues related to corps artillery and engineering units to be resolved later. The task force subsequently made some revisions, which the Chief of Staff approved in November 1983. A follow-on effort by the Logistics Center produced new designs for support units at the corps and higher levels. The AOE designs have continued to evolve as training exercises and Army force structure reviews have shown a need for modifications.

Conclusions

The methodology that the task force followed in developing AOE had numerous positive aspects. The task forces' approaches to seeking to build an affordable force, achieve economies of scale, reduce inefficiencies, eliminate duplication, and maximize the use of limited numbers of military personnel have continued appeal in these budget-conscious times. However, given the prominent role that professional judgment

⁵A decision was made in 1986 to station this 28th division—the 6th Light Infantry Division—in Alaska.

played in the AOE study, we believe that the task force might have fostered more confidence in the AOE designs had it more fully documented its decisions. Of particular importance, a written record of what additional risks the Army was assuming in revising its designs under AOE would have permitted a more objective evaluation of the new designs' merits. Moreover, it would have provided a valuable perspective to planners now tasked with further restructuring Army forces.

Recommendation

We recommend that the Secretary of the Army ensure that the Army fully documents the basis for major changes in its force designs as it proceeds to restructure its force. In particular, the Secretary should ensure that risks associated with such changes are clearly identified.

Agency Comments and Our Evaluation

DOD agreed with our recommendation but believed that the Army was already documenting force structure changes and risks through its normal force structure review processes and management information systems. While we agree that the Army has systematically communicated force structure changes to its personnel in the field, we do not believe that the documentation that DOD cited fully captures the basis for the changes or the risks that the Army accepts in making these changes. For example, the Tables of Organization and Equipment that DOD cited do not clearly explain the basis for deviating from Manpower Requirements Criteria in setting personnel requirements. Moreover, we question whether the videotapes of meetings in which risks are discussed, also cited by DOD, are widely viewed. We continue to believe that the Army should document, in an appropriate mechanism that is widely disseminated, the basis for changing its force designs and the risks associated with such changes.

Problems Encountered in Implementing AOE

AOE was intended to be a blueprint for the Army's force structure for the 1990s. Although the Army began to implement the AOE design in late 1984, it established no mechanism by which to track conversion to the new designs or to measure their effectiveness in correcting identified force structure weaknesses. As a result, the Army has not had a systematic means of determining whether AOE is achieving its major goals. By comparing the Army's fiscal year 1983 force structure with its fiscal year 1989 structure, we found that the Army has encountered problems in converting some of its force structure to the AOE designs and has made uneven progress toward the AOE goals. As a result, some force structure problems that AOE sought to correct are still problems in today's Army.

The Army did not adequately manage a major program intended to reduce personnel by 29,000 positions (the Logistics Unit Productivity Systems program), leaving questions about whether the personnel savings anticipated under AOE will materialize. Moreover, although the Army increased its use of host nation personnel to fill military requirements under AOE, due to the changing situation in Europe, the Army will likely reassess this aspect of its force structure.

Conversion to AOE Half Complete

As of September 30, 1989, the Army had converted 56 percent of its force structure, in terms of personnel authorizations, to the AOE designs.¹ The Army's general priorities were to convert units associated with combat divisions through 1991, combat support units through 1992, and combat service support units through 1993. However, plans for implementing AOE have been modified due to cuts in Army funding, which have led to reduced equipment purchases and a smaller active Army. Also, it has taken longer than anticipated to develop the new organizational designs. The Army currently projects AOE conversions into 1996, and present restructuring efforts could force further modifications.

Because the Army did not systematically monitor AOE implementation, officials responsible for force structure changes could not readily tell us how far the Army had moved into the AOE design. Although the Army has used a semiannual process known as "AOE Update" to surface concerns about AOE design problems needing corrective action, this process has not been used to monitor conversion to the AOE structure. To gain a perspective on the Army's conversion to AOE, we calculated progress

¹In calculating conversion to AOE, we used the Army's definition of all new designs developed after 1983.

from Army force structure data. We found that the Army had converted 71 percent of its combat forces to AOE and that conversions in the reserve components had lagged behind those in the active Army. Appendix I includes more details on the Army's conversion to AOE.

Uneven Progress in Achieving AOE Goals

The Army's major goals for AOE were to (1) eliminate hollowness in the Army's force structure, (2) increase the ratio of combat to support forces, (3) improve the mix of active and reserve forces, (4) standardize light forces, and (5) increase the leader-to-led ratio. However, the Army did not specifically define these goals. For example, it did not define what increase it was seeking in the combat-to-support ratio, what it believed to be an improved active-to-reserve force balance, or what specific increase it sought in the leader-to-led ratio. Because the Army has not tracked its conversion to the AOE designs, we attempted to measure progress toward each AOE goal using official Army force structure data. We found that the Army

- has made progress in reducing hollowness in its force structure but could have made greater progress if it had followed the original AOE plan,
- has not increased its ratio of combat to support forces as it intended and has not achieved a consensus on the adequacy of its support forces,
- still believes that it may be relying too heavily on reserve forces for contingencies,
- has been unable to standardize light forces due to its inability to convert the National Guard infantry divisions, and
- has increased its leader-to-led ratio by creating more and smaller Army units focused on single weapons systems.

"Hollowness" Reduced but Not Eliminated

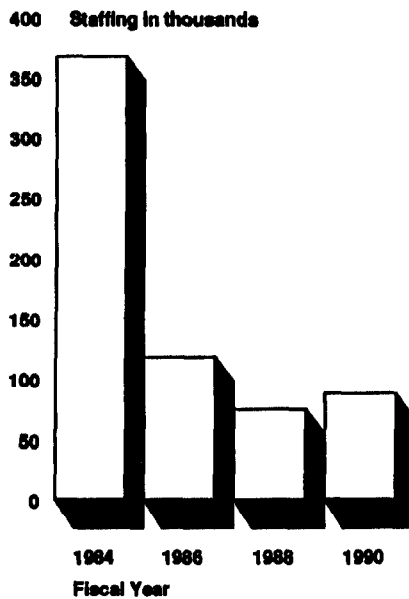
The AOE designers attempted to address two key elements of the hollow-ness problem. They sought to (1) reduce the number of units without people or equipment (that is, those that existed only on paper) and (2) design units that would be staffed at 100 percent of their required personnel.

AOE sought to reduce, or even eliminate, units that the Army could not afford to resource because Army planners believed that their existence created false expectations among Army commanders that these units would be resourced when a conflict occurred. In reality, many of these units could not be built from the ground up by the time they were expected to be at the commander's disposal. By eliminating these units,

Army planners believed that commanders would realize that the only units upon which they could depend were existing units.

Under AOE, the Army greatly reduced the number of required units without personnel, although the downward trend was reversed in 1990. About 368,000 personnel spaces were associated with these units in fiscal year 1984, compared with about 74,745 in fiscal year 1988 and 87,500 in fiscal year 1990. (See fig. 3.1.) According to Army officials, many of the remaining unresourced units are intended to support combat units in wartime and are not needed in peacetime. Today, most of these units are in the air defense, medical, composite services,² and engineering branches of the Army. Officials said that the Army considers this level of unresourced requirements to be acceptable.

Figure 3.1: Required Positions Associated With Unresourced Army Units



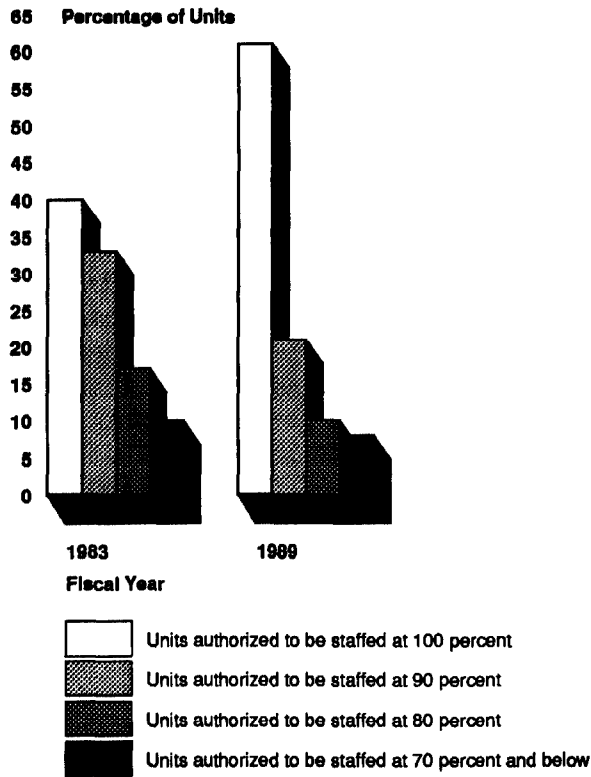
The significance of AOE's reduction of unresourced units is not entirely clear. As noted in chapter 2, some of this reduction represents the Army's acceptance of risk in some functions; the rest is due to its revision of factors used to determine personnel requirements. However,

²The composite services branch includes units carrying out logistical functions such as supply and maintenance.

because it is unclear whether the previous factors resulted in overstated requirements, there is no way to evaluate whether the revised factors yield a better estimate of the Army's requirements or whether the Army has simply accepted more risk. At two Army conferences we attended, concerns were raised over the "disappearance" of required units from the Army's force structure simply because the Army could not afford to resource them. Critics contended that all doctrinally required units should remain in the force structure even if the Army could not resource them; otherwise, commanders would not know where in the force they were accepting risk. The Army's position is that it will only keep units in the unresourced category if it has a reasonable expectation of resourcing them in the event of a conflict.

The Army also reduced the gap between authorized and required personnel in existing Army units under AOE. The planners attempted to eliminate this shortfall—about 110,000 spaces in 1983—by designing forces to match the Army's authorized personnel. However, Army leadership concluded that it was desirable to design some units, such as medical units, to be staffed at lower levels since there is no need to fully resource them in peacetime. Currently, the Army's goal is to authorize 100 percent staffing for combat units and an average of 90 percent for support units. By 1989, the Army had reduced this resourcing shortfall to about 73,000 spaces and, as shown in figure 3.2, had increased to 61 percent the number of Army units whose personnel were authorized at 100 percent of requirements.

Figure 3.2: Authorized Levels of Staffing for Army Units



Note: This data does not include unresourced units and does not account for the variance in size of Army units.

Table 3.1 shows that the level of staffing for combat units has increased since 1983, although many of these units are still not staffed at 100 percent. Many of the units that have low levels of resourcing are in support functions such as logistics, security, finance, medical services, ordnance, military intelligence, quartermaster, and military police.

Table 3.1: Army Units at Various Staffing Levels

Figures in percentages

Authorized staffing	Combat		Support	
	1983	1989	1983	1989
100 percent	20	66	49	59
90 percent	55	30	23	18
80 percent	24	2	14	13
70 percent and below	1	1	14	10

Note: The variance in size of units is not accounted for in this table.

As of September 30, 1989, the remaining shortfall between the Army's personnel requirements and authorizations was about 160,500—87,500 spaces in units that were totally unresourced and 73,000 spaces representing the gap between required and authorized personnel in existing units. Had the Army stayed within the constraints of the original AOE proposal, this hollowness would have been eliminated. However, it added a 28th division to the force structure, retained unique structures for the 2nd Infantry Division in Korea and the experimental 9th High Technology Motorized Division, restored some force structure cuts, and did not convert the National Guard infantry divisions to the AOE light infantry designs. These decisions required more personnel spaces than the AOE designers had planned. Subsequent decisions to restore personnel in areas such as military intelligence further added to the number of required personnel spaces. One general officer connected with the AOE study said that, because the Army did not adhere to the AOE original design, it was forced into an unaffordable force structure.

Combat-to-Support Ratio Has Not Changed

The AOE task force sought to increase the size of Army combat forces in relation to the size of its support forces, although the specific change desired was not defined. However, with half of AOE in place, the Army's combat-to-support ratio has not changed. In both 1983 and 1989, 64 percent of the Army's authorized forces were in combat units, and 36 percent were in support units. This lack of change may be due, in part, to the fact that only 28 percent of the Army's support structure has converted to AOE designs. One Army headquarters official who is responsible for implementing force structure changes said that the combat-to-support ratio has improved because AOE eliminated the large number of support units that existed only on paper. Eliminating these requirements would in fact improve the ratio, but only on paper. The ratio for existing forces has not changed.

AOE has not resolved a major debate that has taken place within the Army over the adequacy of support forces to sustain combat forces. One key official involved in designing AOE said that there were still too many support forces and that they should be cut further. He pointed to a major point of disagreement among various elements of the Army as to how to apply Manpower Requirements Criteria (MARC) in calculating support requirements. These criteria specify how many people individual types of support units need to perform their missions. TRADOC schools that calculate requirements for combat service support units base their calculations on strict adherence to the numbers of hours MARC studies show soldiers to be available to perform their missions. Officials at TRADOC's Logistics Center told us that, in their view, once the criteria

have been validated and approved, the Army should adhere to them as the legitimate basis for support requirements.

Officials at TRADOC schools that calculate requirements for combat support units and officials at the Combined Arms Center, on the other hand, believe that the MARC studies understate a soldier's available time and therefore inflate support requirements. Accordingly, they deviate from these criteria, using them only as a general guide. One Combined Arms Center official noted that if MARC factors were strictly applied, support requirements would grow out of control, making it impossible to stay within mandated personnel ceilings. He emphasized that it is reasonable to deviate from the criteria when it appears that doing so would not pose undue risks to the units' missions. However, because judgment is involved in these determinations, differences of opinion continue to exist as to whether these deviations are justified.

This debate has carried over into the operational realm, where such deviations from established criteria are blamed for inadequacies in support units. For example, we recently found that Apache helicopter availability suffers from personnel shortages, particularly in maintenance functions.³ MARC worksheets for assault helicopter units show personnel requirements at 58 to 77 percent of MARC requirements. Although other problems, including the performance of the helicopter itself, contribute to the Apache's unavailability, the lack of a clear justification for deviating from the MARC criteria appears to have complicated decisions as to just how many personnel are needed for helicopter units.

Although this is but a single example, a consensus on the adequacy of the Army's support forces does not appear to have been reached. Officials working in support areas believe that Army requirements for support units have become too austere and that units are unable to perform their missions adequately. Conversely, Army officials at the Combined Arms Center believe that the support structure is more than adequate and should be cut. Because the Army follows a quantitative process to determine its support requirements, we believe that it is important for the Army to agree on the criteria it uses in these calculations. The current lack of agreement, in our opinion, undermines confidence throughout the Army that support forces are adequate to sustain combat forces.

³See *Army's Apache Helicopter Has Proven Difficult to Support* (GAO/T-NSIAD-90-33, Apr. 19, 1990) and *Apache Helicopter: Serious Logistical Support Problems Must Be Solved to Realize Combat Potential* (GAO/NSIAD-90-294, Sept. 28, 1990).

Army Not Satisfied With Mix of Active and Reserve Forces

AOE planners sought to change the Army's mix of active and reserve forces. Although the task force sought to eliminate reserve component round-out units in active Army divisions, believing that rounding out was an undesirable trend, the Chief of Staff did not accept its recommendation. Currently, 9 of the Army's 18 active divisions have round-out brigades and battalions. AOE planners also intended to replace some of the reserve support forces for early deploying units with active forces. They believed that the Army should not rely so heavily on reserve units to provide support in the initial stages of conflict, since these units require more time to deploy. One key official in the AOE design effort told us that, at the time of the AOE study, one early deploying Army corps had 78 percent active forces but that active forces provided only 40 percent of the required combat service support.

Two key officials involved in the AOE study said that the active-to-reserve balance had improved in that early deploying corps were made up of a greater percentage of active forces. However, some officials believe that the Army still relies too heavily on selected reserve functions for contingencies. For example, in Operation Just Cause in Panama, the Army relied on volunteer reservists to fill requirements for civil affairs since most of these forces were in the Army Reserve. According to Army officials, a decision was made not to call up reserve forces because it might have jeopardized the secrecy of the operation. One general officer attributed the unrestrained looting that occurred in Panama to this reliance on reserve volunteers since they did not arrive until days after the operation began. Army statistics show that 96 percent of the Army's civil affairs branch is in the Army Reserve.

As shown in table 3.2, the Army's active and Guard forces continue to be more combat-oriented, while the Army Reserve is relied upon for support functions.

Table 3.2: Combat and Support Forces as Percentages of Authorized Personnel in Army Units

	Figures in percentages			
	Fiscal year 1983		Fiscal year 1989	
	Combat	Support	Combat	Support
Active Army	73	27	72	28
National Guard	74	26	74	26
Army Reserve	25	75	27	73
Total Army	64	36	64	36

The Army's force structure has 67 percent of all support forces in the reserve components. Accordingly, it would be difficult for active contingency forces to fully perform rapid deployment missions without relying on reserve forces for support.

Standardization Goal Not Met

A major goal of AOE was to standardize the Army's non-mechanized infantry forces into similar light infantry division designs. The advantages of standardization were to (1) provide a common structure that would simplify organizational designs, (2) simplify training, (3) facilitate the movement of personnel among Army units, (4) enlarge the pool of resources available to staff light units, (5) simplify Army-wide logistics by providing a level of commonality in equipment and supplies, and (6) offer a wider range of options for responding to crises.

Recognizing that generic units might not be well suited to some contingency missions, the AOE task force sought to develop a basic standard design for all light infantry divisions to which unique capabilities could be added, when warranted. As part of the study, the task force designed a 10,000-soldier light division and identified unique features that should be added to arrive at the designs for the airborne and air assault divisions. The AOE task force recommendation to the Army commanders was that the remaining infantry divisions be converted to the standard light infantry design. The Chief of Staff accepted this recommendation except in the cases of the 2nd Infantry Division in Korea and the 9th High Technology Light Division, which he decided would remain as unique designs.

We found that various factors had slowed progress toward the standard design objective. As shown in table 3.3, 5 of the Army's 14 infantry divisions are considered standard light divisions; 4 divisions have unique AOE designs; and 5 have designs predating AOE.

**Table 3.3: Status of Standardization
Among Army Light Infantry Forces**

Division	Unique AOE design	Standard light infantry AOE design	Non-AOE design
Active Army divisions			
82nd Airborne	X		
101st Air Assault	X		
9th Motorized	X		
2nd Infantry	X		
6th Light Infantry		X	
7th Light Infantry		X	
10th Light Infantry		X	
25th Light Infantry		X	
National Guard divisions			
29th Light Infantry		X	
26th Infantry			X ^a
28th Infantry			X
38th Infantry			X
42nd Infantry			X
47th Infantry			X

Note: This table includes all Army divisions that are not mechanized or armored.

^aAlthough there was no AOE infantry division design, Army officials said that all forces in the 26th Infantry Division are in AOE unit designs.

Army officials offered several explanations for why it has been difficult to convert the five National Guard infantry divisions to the AOE light infantry division design. In some cases, parts of the AOE designs were not practical for the Guard and required modifications. In other cases, the Guard delayed conversion until funds for full modernization were available to avoid the successive, disruptive conversions that would be involved in first moving to the AOE design and then later modernizing. In addition to these practical reasons, however, some officials charged that in some cases the Guard had simply used its political influence to avoid converting to AOE designs when doing so would have required it to give up too much equipment and too many personnel. One National Guard Bureau official said that Guard officials had sometimes inappropriately used the possibility of state emergencies to justify keeping some aircraft that should have been given up under AOE.

As a result of these delays, the five National Guard infantry divisions have not been converted to AOE designs and are not structured to fight under the Army's AirLand Battle doctrine as are other AOE forces. Delays in conversion, according to an Army headquarters official, cause

inefficiencies due to the retention of old and sometimes obsolete equipment that is more expensive to maintain. Also, support units that would not be needed for the more streamlined AOE units have to be retained. Two general officers involved in the AOE study expressed their disappointment that Army leadership had been unable to convince the National Guard to accept the Army's conversion plan.

The Army has repeatedly and unsuccessfully tried to develop an AOE infantry division design that is acceptable to the National Guard. One headquarters official said that the Army had recently reached some agreement on a design for National Guard infantry divisions, but now this agreement seems to have been overtaken by the changes taking place in Europe. He noted that the new design now appears to be "today's solution for yesterday's problem."

Leader-to-Led Ratio Increased

AOE increased the officer-to-enlisted personnel ratio in the Army's deployable force structure, as shown in table 3.4. Of the three Army components, the Army Reserve currently has the highest ratio of officers to enlisted personnel.

Table 3.4: Ratio of Officers to Enlisted Personnel by Army Component

	1983	1989
	Officer/enlisted	Officer/enlisted
Active Army	1:10.8	1: 9.5
National Guard	1:10.9	1:10.0
Army Reserve	1: 6.0	1: 5.6
Total Army	1: 9.4	1: 8.6

Note: Officer category includes commissioned officers and warrant officers. Enlisted category includes noncommissioned officers and all other enlisted personnel.

The goal to increase the Army's ratio of leaders to led (the desired ratio was not specified) was set because Army planners believed that the sophistication of weaponry and the number of different types of weapons in a unit were taxing the skills of unit leaders. AOE created more and smaller units focused on single weapons systems—for example, companies of Bradley Fighting Vehicles. As part of this restructuring, some support elements such as administrative and maintenance units were moved to the battalion level. These smaller units are designed to permit their commanders to concentrate on optimizing the capabilities of weapons systems and personnel.

Changes made to the mechanized infantry division illustrate the types of changes accomplished under AOE. AOE reduced the number of maneuver battalions in the mechanized division from 11 to 10 but increased the number of maneuver companies from 33 to 40. According to one Army report, this change created smaller, more agile companies and gave greater flexibility to battalions. The Army also reduced the infantry squad from 11 to 9 soldiers—a change intended to improve officers' supervision of critical fighting elements. Finally, the Army relocated some combat functions and logistical service capabilities to the corps to enhance the corps commander's ability to influence the battle. As a result of these changes, the officer-to-enlisted ratio for mechanized infantry divisions decreased from 1 to 11.5 prior to AOE to 1 to 10 under AOE.

Logistics Unit Productivity Systems Program Not Effectively Managed

The AOE designers estimated that 29,000 personnel spaces could be saved by implementing LUPS labor-saving initiatives. However, we found that the program had not been effectively managed and that many LUPS units were experiencing equipment and personnel shortages. Moreover, we found that units were being converted without proper validation, raising questions about whether they will be able to perform their missions as intended.

Under LUPS, the Army planned to procure certain labor-saving equipment and to reorganize certain functions to enhance productivity in its ordnance, quartermaster, and transportation units. A total of 390 Army units were to be affected by activations, inactivations, and conversions from 1986 through 1993, and \$792 million in equipment was to be procured.⁴ The Army planned to begin procuring the equipment at least 2 years before converting or activating LUPS units to ensure that equipment was in place before personnel reductions were made. The Army also planned to validate the expected productivity gains before converting units to their new designs. The anticipated productivity gains were based on the assumption that LUPS units would be at their highest levels of readiness before being converted to their new designs.

⁴Army officials advised us in September 1990 that 370 units remained in the program and that Army force reduction plans called for eliminating 30 to 40 of these units.

Conversions Could Be Delayed Due to Equipment and Personnel Shortages

At the end of fiscal year 1989, the Army had converted 43 LUPS units to their new designs. Recognizing that many LUPS units were scheduled to be converted in fiscal years 1990 and 1991, the Army convened a conference in February 1990 to ascertain the equipment and personnel status of affected units in the active Army and the Army Reserve.⁵ The conference disclosed that 138 of the 239 units reviewed did not have sufficient equipment and/or personnel to convert even at a minimal level of readiness—a concession from the original plan. Some units were missing equipment essential to readiness or had not received their LUPS equipment. Others—primarily Army Reserve units—had been unable to recruit enough personnel from the geographic area in which they were located to fill the units.

Collectively, Army personnel recommended to Army headquarters that the conversion or activation of 138 of the 239 LUPS units be deferred. Other scheduled unit activations were to proceed only after the units had rectified their equipment shortages. Because of the bleak prospects of correcting the personnel shortfalls in Army Reserve units, officials at the conference recommended that these units be activated at 50 percent of their required personnel when and if their equipment shortfalls were remedied.

Army personnel said that funding cuts, inappropriate unit designs, and stationing decisions were responsible for the equipment and personnel shortages. With respect to unit design, one Forces Command official noted that the AOE designs for some LUPS units, such as graves registration and supply and service units, were comprised almost entirely of low-skilled positions with little opportunity for upward mobility. He cited the difficulty of recruiting and retaining enough individuals to fill these units. In some cases, the fact that demographics changed after decisions on stationing the AOE units had been made contributed to the recruiting problem. In other cases—for example, in port units—Forces Command had little flexibility in deciding where it could station units.

Delays in changing the LUPS units to their new designs will pose problems since the Army has already planned to transfer personnel spaces to other units. If these units cannot convert on schedule and remain in their old designs, which require more personnel, the Army will have to decide whether to (1) reduce the numbers of personnel in either the LUPS units or other Army units or (2) place some units in an

⁵National Guard units in the LUPS program were not reviewed at this conference.

unresourced status. Both alternatives would create hollowness in the Army's force structure.

Force reductions due to the reduced threat in Europe and defense budget cuts could save the Army from having to further hollow out some of the force to compensate for delays in converting LUPS units. These reductions will enable the Army to reduce the number of required logistical units, thereby freeing up some additional equipment. One official emphasized, however, that the LUPS units will have to compete with other Army units for the equipment withdrawn from Europe.

LUPS Conversions Proceeding Without Validation

The Army planned to validate the expected productivity gains and space savings estimated for the 25 types of units affected by LUPS before converting units to their new designs. However, the Army did not adhere to the validation schedule it established in 1988 and has continued to convert units without validation. According to the 1988 validation plan, the Army was to validate 19 of the 25 types of units. However, as of March 1990, the Army had validated only one type of unit—a petroleum supply company that uses a larger pumping unit to dispense petroleum. Results of that validation showed productivity gains to be half of what was anticipated. Army officials said that two other types of units had also been validated but that they were removed from the LUPS program due to more extensive modernizations.

According to a March 1990 revision to the validation schedule, the Army now plans to validate only eight additional unit types. The reason it gave for not validating the others is that their productivity is self-evident. In reviewing the original December 1988 validation plan, however, we found that five of the units whose productivity is now considered self-evident were supposed to receive the highest priority for validation because they had experienced significant changes in their missions and structures.

Army officials advised us in September 1990 that the LUPS units scheduled for validation had been called to deploy to the Persian Gulf and that the planned validations would be deferred. Without validation, the Army has no assurance that the anticipated productivity increases will be achieved or that the personnel allocated to these units will be sufficient to carry out their assigned missions. If the validations eventually fail to confirm the expected productivity gains, the Army will have to

either (1) restore some personnel spaces to these units and reduce personnel spaces in other Army units or (2) accept the additional risks inherent in understaffing these units.

LUPS Implementation Not Closely Monitored

Army officials said that the program had suffered from inadequate oversight and that, as a result, crisis management had ensued as the LUPS conversion dates approached. For example, because the Army had not routinely monitored the status of its LUPS units, a major conference had to be held to determine whether these units would be able to convert at the desired level of readiness on schedule. Moreover, Army management was not aware of the problems that were being experienced in the LUPS program until this conference was held.

Logistics Center officials at Fort Lee told us that, while they were responsible for conducting the LUPS studies and validating personnel savings, the Army headquarters' Office of the Deputy Chief of Staff for Logistics was responsible for the equipment side of the program, and the Office of the Deputy Chief of Staff for Operations for the related force structure activations and conversions. Staff turnover in all three offices appears to have contributed to the lack of continuity in managing the program.

Increased Use of Host Nation Support Under AOE

Enlisting the help of host nations to support Army combat forces is a tool whose use increased under AOE. A key official in the AOE design effort told us that the Army's outlook with respect to host nation support changed markedly under AOE. Previously, the Army had estimated how much logistical support host nations could provide to Army forces in the event of a conflict. However, according to one Army official, these estimates were probably inflated because the Army did not have formal agreements for all of this support. The AOE planners looked upon host nation support as a major means of filling force structure requirements that otherwise might have remained unfilled due to personnel ceilings. It therefore became necessary for the Army to seek increased levels of host nation support—particularly in logistical functions—and to document this support through formal agreements.

We found that the Army had made progress in verifying and increasing its support by host nations. Prior to AOE, the Army estimated that it would receive the equivalent of 78,000 force structure positions from its allies to meet logistical support needs. However, not all of this support

was documented by formal agreements, and some believed that this estimate was inflated. In contrast, the Army now indicates that it has bilateral agreements and contracts officially committing host nations and contractors to filling 120,527 Army positions in a variety of support functions in the chemical, engineering, medical, ordnance, quartermaster, signal, military police, supply, maintenance, and transportation branches. The Army relies heavily on host nation support for some capabilities. For example, it relies on host nations to supply personnel for 43 percent of its transportation units and relies almost totally on host nations to transport its M1 tanks in Europe.

Although progress has been made in the area of host nation support, Army officials advised us that they will be reexamining this support in light of recent events in Europe. With the decreased threat in Europe, it is not altogether clear what level of support U.S. allies will be willing to provide, given public sentiment and their past records of burden-sharing. On the other hand, some believe that U.S. allies may be willing to assume even more roles in return for U.S. troop withdrawals. It should be recognized that most host nation support is provided by Germany and Korea and would be of little use to the Army in conflicts elsewhere. The increased prospect of conflicts in regions other than Europe—especially the Third World—could require the United States to adjust its reliance on host nation support, to reacquire some capabilities in the Army's own forces, or even to cultivate additional host nation support in Europe as well as other parts of the world. An Army official told us that the Army will be considering these issues as part of its restructuring efforts.

Conclusions

The force structure design for AOE was a realistic assessment that matched force structure requirements with authorized personnel. The Army established goals for the AOE designs; however, it did not clearly define these goals and did not establish a mechanism with which to measure progress toward them. As a result, the Army has not had a systematic means of determining whether AOE is achieving its major goals. A tracking system would have alerted Army management to problems in converting Army forces to a new structure and would have shown what progress was being made in correcting identified structural weaknesses.

It is difficult to tell whether the goals of AOE will eventually be met, because only half of the Army's force structure has been converted to AOE. However, it appears that uneven progress has been made. The Army has greatly reduced hollowness by cutting requirements, but it is

unclear whether this reduction represents a more legitimate estimate of the Army's personnel requirements or a greater acceptance of risk, particularly in support functions. Disputes over the validity of the current MARC factors and how they are applied in setting personnel requirements have created a split in Army opinion as to whether AOE provides sufficient support forces to sustain combat forces. In our view, the uncertainty that exists over the basis for eliminating support units under AOE, coupled with disagreements over MARC, contributes to unproductive quarreling among Army factions over the adequacy of the Army's support structure.

Delays in converting Army forces—particularly those in the National Guard—have worked against the AOE goal of reducing hollowness. Because more personnel requirements have had to be retained for the older combat structures and their associated support forces than the task force planned, other forces have had to be understaffed to compensate. Similarly, the Army's decisions to add more combat forces to its structure than AOE planners anticipated without increasing its active component end strength have further permitted the hollowness that AOE sought to eliminate to creep back into the force.

Because the Army did not convert its National Guard infantry divisions (non-mechanized) to AOE light infantry division designs, it could not meet AOE's standardization goal. The effect has been the retention of nonstandard force structure that is less capable than the AOE designs under the AirLand Battle doctrine. Also, the Army has had to retain support forces associated with these units that otherwise would have been eliminated. Greater standardization of Army forces would have increased operational efficiency and might have permitted the Army to avoid hollowing out other Army forces to retain this inefficient structure.

Despite the importance of the LUPS program to the success of the new AOE designs, the Army did not provide continuing oversight of the program. Better monitoring might have disclosed delays in validating productivity gains, equipment shortages, and difficulties in recruiting required personnel for the units. Timely exposure of these problems would have allowed Army management to take corrective actions and to avoid the crisis management that ensued as conversion dates approached. As it is, questions remain over whether the LUPS units will get the equipment and personnel they need, whether the estimated productivity gains are accurate, and whether the anticipated personnel savings will materialize.

Recommendations

As the Army proceeds with its plans for force restructuring, we recommend that the Secretary of the Army take the following actions:

- Establish mechanisms to (1) track the implementation of any major force structure initiatives that are introduced and (2) assess progress toward the initiatives' goals.
- Resolve the current disagreement on the development and application of MARC to achieve a more consistent basis for determining support force requirements.
- Assess the implications of retaining National Guard infantry divisions (non-mechanized) in nonstandard designs and if warranted, develop a plan for standardizing these forces.
- Resolve existing problems in implementing the LUPS program to improve the prospects that the expected personnel savings are achieved.

Questions we have raised concerning equipment availability, personnel designs, and unit validations still remain unresolved. In view of past problems in the management of the LUPS program, we recommend that the Secretary of the Army provide a copy of the LUPS implementation plan, once approved by the General Officer Steering Committee, to the Secretary of Defense to provide assurance that noted problems are being satisfactorily resolved.

Agency Comments and Our Evaluation

DOD generally agreed with our recommendations and offered the following additional comments.

Mechanisms to Track Force Structure Initiatives

DOD commented that individuals called "Organizational Integrators" within the Army's Office of the Deputy Chief of Staff for Operations assess progress towards implementing any force structure initiatives. It further noted that the October 1, 1990, merger of force structure and planning and budgeting data would facilitate control of both personnel and fiscal resources.

The Organizational Integrators to whom DOD refers are responsible for monitoring force structure changes for specific branches of the Army. Although these individuals are in a good position to track initiatives within their respectively assigned branches, they do not have an overview of initiatives, such as the LUPS program or AOE as a whole, that involve force structure changes across branches. The Organizational

Integrators we interviewed could not readily tell us how much of their respective branches had converted to AOE or the extent to which AOE had corrected the force structure problems that had been identified. The merger of the data systems cited by DOD should help Army personnel to better relate budgetary and fiscal data. However, it will not lessen the need for designating a responsible party to track the implementation of major initiatives affecting several branches or the Army as a whole. The experience with the LUPS program underscores the need for continuing program oversight of major force structure initiatives until they are fully implemented.

**Resolving Disagreements
Over How MARC Is
Developed and Applied**

DOD advised us that Army Headquarters and TRADOC were currently reviewing the MARC allocation factors. It said that this review and the proposed modifications to appropriate Army regulations would be completed in early 1991.

**Standardizing the National
Guard Infantry Divisions**

DOD generally confirmed our statistics on the status of the five National Guard infantry divisions' (non-mechanized) conversion to AOE and said that conversion was scheduled to be completed by the end of fiscal year 1997. DOD advised us, however, that, because of the changing threat, the Army now plans to inactivate two of these divisions and proposes to convert two others to a heavy cadre design consistent with AOE. The Army plans to convert the remaining division to AOE designs.

These planned actions, if implemented, would eliminate much of the nonstandard divisional force structure and its inherent inefficiencies. However, if the Army is to successfully implement this plan, it will need to overcome the same kinds of obstacles it faced when attempting to standardize these forces under AOE. Accordingly, we have retained our recommendation that the Army assess the implications of retaining National Guard infantry divisions (non-mechanized) in nonstandard designs to bolster the Army's case for implementing its plans for these divisions.

**Resolving Problems With
LUPS**

DOD commented that significant progress had been made in getting this program back on track. It noted that equipment issues had been resolved so that a majority of units will attain the desired level of readiness by the time they are converted to the LUPS design. DOD confirmed that the validation schedule we cited had been finalized in March and that Army headquarters had conducted an intensive review of LUPS-

related personnel issues. It noted that a final General Officer Steering Committee meeting to discuss LUPS implementation had been scheduled for late August but was canceled due to Operation Desert Shield.

We endorse the actions that the Army is taking to get the LUPS program back on track. However, because the Department has not specifically outlined the details of the proposed LUPS implementation plan or how the issues we raised have been resolved, questions still remain over the status of this program. Until the General Officer Steering Committee meeting is rescheduled to consider the LUPS implementation plan, the questions that we raise concerning equipment availability, personnel designs, and unit validations will remain unresolved. Accordingly, we are retaining our original recommendation and are further recommending that the Secretary of the Army provide a copy of the approved LUPS implementation plan to the Secretary of Defense to provide assurance that the problems we noted are being satisfactorily addressed.

Restructuring Army Forces: Looking to the Future

The events of 1989 and early 1990 in the Soviet Union and Central Europe have brought new challenges to the Army as it examines how best to restructure itself in the face of proposed force reductions. With the general recognition of a reduced Soviet threat to Western Europe and continuing budgetary pressures, the Army had made plans in mid-1990 to reduce its forces to 580,000 by 1997—the lowest level since 1948. However, the National Defense Authorization Act for Fiscal Year 1991 subsequently called on the Army to reduce its active end strength even lower—to 520,000 by fiscal year 1995—a reduction of over 200,000 personnel over the next 5 years. This mandated end strength would require the Army to eliminate at least six divisions and the related support from the Army's force structure.

How well the Army plans and manages its restructuring will have an important bearing on the future effectiveness of Army forces, the retention of readiness in the transitional period, and the preservation of the gains made over the past decade in the quality of Army forces. Major questions that need to be addressed include the following:

- What should be the future size of the Army?
- Does the Army need to fully resource all of its units in peacetime?
- Should the Army increase its reliance on reserve forces?
- How can the Army best manage its restructuring to avoid unacceptable effects on readiness and force quality during the transition?

The AOE restructuring effort has yielded important lessons that can and should be applied to these questions as the Army continues to plan its future force structure.

Building an Affordable Force

The AOE restructuring effort underscored the fact that the Army's future size must be based not only on a revised assessment of the threat, possible modifications to U.S. commitments, and a strategy to meet U.S. security interests but also on a realistic estimate of the budgetary resources that will be available. Army planners under AOE started with an assessment of what resources were likely to be available in the future and then sought to build the most combat-effective Army consistent with U.S. military strategy that lay within the bounds of these anticipated resources. The AOE planners thereby produced what it viewed as an "affordable" Army. By following this approach, the AOE task force hoped to avoid repeating the Army's experience with Army 86 designs, which reflected doctrinal requirements but did not anticipate the budgetary pressures that would prevent the financing of the new designs.

The Army clearly should build a force anchored in doctrine but with due consideration of expected financing. Some evidence suggests that the administration does not yet have a realistic projection of future defense resources. Current Army plans are predicated on guidance from the Secretary of Defense that service spending be reduced 2 percent annually through 1997—a total reduction in defense spending of about 12 percent in real, inflation-adjusted terms. However, some Members of Congress clearly believe that this reduction should be greater. In July 1990, at the request of the ad hoc Budget Summit Committee, the Secretary of Defense provided his assessment of the budgetary impact that would result if the Department were required to reduce military force structure by 25 percent by 1995. The Secretary made it clear that he was not advocating such a reduction.

We are currently reviewing the linkage between strategic planning and resource allocation in the Department of Defense and have found that, due to significant mismatches between the Department's funding projections and congressional appropriations, Joint Chiefs of Staff military planning has not provided a realistic framework for the military departments' programming and budgeting decisions. Although the Goldwater-Nichols Department of Defense Reorganization Act of 1986 requires the Chairman of the Joint Chiefs of Staff to prepare a strategic plan consistent with the Secretary of Defense's projection of available resources, we found that the past two military strategies, prepared in 1987 and 1989, were based on growth rates that exceeded current budget projections by hundreds of billions of dollars. Our July 1990 congressional testimony on Department of Defense management voiced concern that the cost of the 5-year defense plan exceeds the defense budget projection for the 1990 to 1994 period by over \$100 billion.¹ Moreover, the Department's funding projections since fiscal year 1985 have proven to be overly optimistic when compared to actual congressional appropriations. As the Army plans its future size, it will need more realistic estimates of available funding to provide a sound basis for its force structure decisions.

Resourcing the Army in Peacetime

As the Army restructures its forces, it must decide on the extent to which its units should be fully resourced. Again, it is instructive to examine what happened under AOE. AOE planners, recognizing the operational problems that the "hollow Army" had caused, sought to eliminate

¹Department of Defense: Improving Management to Meet the Challenges of the 1990s (GAO/T-NSIAD-90-57, July 25, 1990).

unresourced units and to design combat forces that could be staffed at 100 percent of their wartime requirements. Army leadership ultimately accepted a goal of authorizing combat units to be staffed at 100 percent and support units at an average of 90 percent and accepted the fact that some units would remain unresourced. Today, a higher proportion of combat forces is authorized at 100 percent, and the number of Army units remaining unresourced has been significantly reduced. This improvement was achieved through a deliberate effort on the part of AOE's designers to match force requirements more closely to authorized levels of personnel.

The problem of hollowness, however, appears to be returning. Unresourced personnel requirements increased between fiscal years 1988 and 1990. Some officials believe that AOE simply shifted the hollowness from combat to support units and that it would be better to have fewer fully supported Army divisions rather than more divisions that are inadequately supported. These individuals believe that the Army must make a hard decision on the number of divisions that it can afford to support. One Army officer recently analyzed the Army's combat and support requirements since World War II and concluded that the Army could afford to fully support only 12 of its 18 active Army divisions with its fiscal year 1989 active end strength of 764,000.² Current Army plans call for reducing the number of active Army divisions to 12 by the end of fiscal year 1997.

The present Army Chief of Staff has warned against a return to the "hollow Army." Several reasons have been advanced to support this view:

- A certain amount of Army structure needs to be highly ready and capable of responding immediately to certain contingencies.
- Realistic peacetime training is difficult when units are seriously understaffed.
- Understaffing creates morale problems and leads to the diversion of personnel from their primary missions to other tasks for which inadequate numbers of personnel have been assigned.

On the other hand, a reasonable case can also be made for partially resourcing a certain amount of the Army's force structure in peacetime, particularly if one accepts the assertion that warning time will be greatly increased. Army officials believe that with increased warning

²Colonel Edward J. Dewey, "A Blueprint for a Lean, Mean Army 21," *Army*, June 1990.

time certain support capabilities could be developed during the expected mobilization period.

The Chairman of the Senate Committee on Armed Services has promoted a concept that he terms "flexible readiness," in essence advocating some hollowness in the Army's structure. Under this concept, units needed for emergency situations would be fully resourced at the highest levels of readiness. Other units, which could be trained and readied to go to war during the anticipated mobilization period, could be staffed at less than 100 percent and kept at a lower level of readiness. He suggests that all services face the choice between (1) keeping a relatively larger force structure but with the readiness levels for specific units adjusted based on threat, warning time, likelihood of use, and ability to get to the battle and (2) moving to a substantially smaller, but fully ready force structure than the one currently being projected.

Continuing budgetary pressures bolster the case of those advocating a less than fully resourced Army in peacetime. The Congressional Budget Office (CBO) has suggested various alternatives for future force structure adjustments. One option is to move the Army in the direction of some "cadre" divisions that would be staffed minimally in peacetime but could be built up to full-division strength upon mobilization.³ While such cadre forces would offer certain advantages, CBO also cited the disadvantages of having to revamp personnel policies and solve the morale problems of the active-duty personnel who would be assigned to command such divisions. CBO concluded that the lack of historical experience with such cadre divisions suggested the need for more study of this alternative. We are currently studying the Federal Republic of Germany's experiment with cadre divisions to assess its potential applicability to U.S. force structure.

The solution may lie somewhere in the middle—a combination of some fully resourced and some cadre units. In fact, the House Committee on Armed Services has included a requirement in its 1991 defense authorization bill that the Army place one active component division in a cadre status by 1992. For the cadre units, the Army may need to be innovative in exploring ways to compensate for the shortcomings of reduced numbers of personnel. Incentives for commanding cadre units, increased participation of active personnel in reserve units, increased simulated training, and other mechanisms may be needed.

³Congressional Budget Office testimony before the Senate Committee on Armed Services, May 10, 1990.

Future Role of the Reserves

Increased warning time, coupled with continuing budgetary pressures, has led to extensive debate over whether reserve forces should assume greater prominence in the future Army force structure. There are currently two schools of thought on this issue: (1) the belief that the Army should continue the trend toward increased reliance on reservists due to their lower cost and increased warning time and (2) the belief that the Army has already gone too far in increasing its reliance on the reserves, given the limitations on training and the U.S. historical reluctance to call up reserve forces.

Under AOE, the Army added new reserve units to the force structure primarily because it decided to keep the size of the active force constant. One member of the AOE task force noted that, because of this constraint on active forces, Army planners had no choice but to add missions to reserve forces whose end strengths were expected to increase. One Army headquarters official responsible for implementing AOE force structure changes said that, although there was really very little choice in the matter, the results have not been very satisfying. In his view, the Army has given increased responsibilities to the reserves primarily because they were willing to assume them. He noted, however, that due to their limited training time, recruiting difficulties, equipment shortages, and other problems, the reserves have not always been able to effectively discharge these responsibilities. He concluded that the Army should take a hard look at its current heavy reliance on reserve forces to determine what roles should be assigned to them.

Those advocating a larger role for the reserves point to their lower cost in relation to the active forces as a prime consideration. Although costs vary according to the type of unit, CBO has estimated that typical selected reserve units cost 20 to 80 percent as much to operate as their active counterparts. CBO cites 1990 annual operating and support costs of an active heavy division in Europe at \$4 billion as compared to \$700 million for a U.S.-based reserve division. Advocates of the increased use of reserves also note that, given increased warning time, improving the readiness levels of reserve units to combat-ready condition during the mobilization period would appear more possible than it was in the past, when some forces were expected to be ready within 10 days.

In addition to the lower cost of the reserves, some believe that by moving more heavy combat missions to the Guard, more active forces could be devoted to the more likely low-intensity conflicts. However, some question whether assigning additional combat missions to the

reserves is desirable, given the past reluctance to use these forces. The August 1990 call-up of reserve forces to active duty in conjunction with Operation Desert Shield in the Persian Gulf was the first time a President had exercised his legislative call-up authority (10 U.S.C. 673b) since the legislation was enacted in 1976. Reasons that have been cited for the reluctance to call up reserves include the time required to mobilize reserve forces, concerns that reserve mobilization could jeopardize the secrecy of some military operations or possibly send a stronger-than-intended signal about an impending military action. Also, some question the wisdom of calling reserve combat units to service when active forces are available in view of the potential for large numbers of casualties from a single locality. Those questioning whether reserve combat units would be used in a conflict requiring less than a full mobilization point out that reserve round-out brigades of two divisions deployed to Desert Shield had not been called up as of October 1990.

Another question being debated is whether some of the capability that the Army has come to rely heavily on reserve forces to provide should be moved back into the active force. Some are proposing an all-active contingency corps to ensure that the Army does not have to rely on reserves in emergency situations when immediate deployment is required. At the time of our review, Army officials told us that the Army had determined that it could deploy two divisions including its support forces with entirely active forces and questioned whether more fully active divisional forces would be required for contingencies. However, subsequently, the size of the deployment under Desert Shield required the call-up of reserve units to carry out critical support missions because there was insufficient capability in the active component.

The Total Force Policy study being conducted by the Department, which is due to be completed in December 1990, is expected to address many of these questions. This study, directed by the Congress in the Defense Authorization Act for Fiscal Years 1990 and 1991, is supposed to assess the operation, effectiveness, and soundness of the Total Force Policy, the assignment of active and reserve component missions, and the active and reserve force structure. Over the past 2 years, we have questioned the lack of criteria for determining what roles should be assigned to the reserves and have urged the Department to establish such criteria.⁴

⁴See Reserve Components: Opportunities to Improve National Guard and Reserve Policies and Programs (GAO/NSIAD 89-27, Nov. 17, 1988) and Reserve Forces: DOD Guidance Needed on Assigning Roles to Reserves Under the Total Force Policy (GAO/NSIAD 90-26, Dec. 7, 1989).

Developing such criteria and exercising sensitivity to the unique features of reserve forces that constrain their use will be increasingly important as the Army determines the future role of these forces.

Exploring All Options to Fill Requirements

As budgetary pressures increase, the Army will have to explore all options for economizing on force structure and filling its personnel requirements. The approaches used in AOE were good ones—pooling the resources of similar units to reduce overhead, reorganizing units to enhance productivity, introducing labor-saving equipment, and enlisting the support of host nations to fill some military requirements. These approaches enabled AOE designers to identify many of the additional spaces they needed to add divisions to the Army's force structure, to reduce the number of unresourced Army units, and to more fully resource some of the Army's underresourced units.

None of these approaches was without risk. Pooling resources at the corps level left questions about whether the assets remaining within the divisions were adequate. Cuts associated with productivity enhancement initiatives were taken without knowledge of whether the anticipated gains in productivity would materialize. Increased reliance on host nations is, in the view of some, second best to Army personnel's performing these same functions since the Army can exercise more control over the personnel it commands.

In our view, the Army might not have had to accept as much risk as it did under AOE had it seriously considered all options open to it. For example, Army planners might have had more personnel spaces to work with in designing AOE had more consideration been given to suggestions made when they were struggling with how to finance the Army's conversion to Army 86. These options included (1) reducing general support forces,⁵ (2) eliminating one heavy division, (3) redesigning the Army's total aviation structure, and (4) transferring a specified mission to the U.S. Marine Corps. Historical documents shed no light on why these options were rejected other than to say that they were not considered attractive. With respect to the Army's current restructuring efforts, we view positively the Army's ongoing examination of how its general support forces should be reduced as a parallel effort to reductions in its deployable forces.

⁵"General support forces" include those units that would not be deployed in a conflict, such as those associated with weapons acquisitions and some Pentagon operations.

One Army official noted that in a world unconstrained by budget limitations, the Army would prefer not to accept risks. However, just as Army planners recognized in developing the AOE force structure, the Army currently recognizes that it cannot afford a force structure without risk. In defining how it will meet its mission with reduced resources, Army leadership will need to explore how it can further exploit the economizing techniques employed under AOE as well as examine new opportunities to streamline its force structure. In addition to eliminating Army divisions as called for in the current plans, other options that have been offered include (1) the increased use of simulators and simulations to expand the use of limited training funds, (2) increased interservice sharing of resources, and (3) closer scrutiny of forces responsible for similar, or even duplicative missions.

Ensuring Sound Management of Force Structure Initiatives

Sound management of force structure initiatives is essential if the required changes are to be accomplished without unacceptable effects on readiness and force quality. The difficulty in moving the Army to an entirely new force structure has been proven by AOE. A full 7 years after implementation began, just half of the planned structure is in place. The magnitude of changes that will be required in the future may dwarf the problems encountered in implementing AOE. In our opinion, the problems encountered in converting the Army's structure to AOE, as well as those encountered in implementing the LUPS program, might have been resolved sooner had mechanisms been established by which to track progress toward the initiatives' goals.

Moreover, force reductions will inevitably result in turbulence in the Army's forces, which could degrade readiness if not properly managed. As plans proceed, it will be increasingly important for the Army to anticipate the effects of these reductions, particularly on the reserve components, where changes are more difficult to make. Greater sensitivity to the unique features and limitations of reserve forces will be required. Establishing control mechanisms to prevent wasted effort and resources, or to at least ensure that problems are brought to the attention of Army management, will also be important.⁶

Good management of personnel matters will be essential if the Army is to avoid compromising the gains it has made over the last decade in

⁶At the request of the Senate Committee on Armed Services, we are currently evaluating whether the Army has established adequate controls to ensure the smooth transition of troop withdrawals from Europe.

terms of the quality of its forces, the levels of readiness, the role of women in the military, and the quality of life for the all-volunteer force and their dependents. Force structure decisions must be made in conjunction with consideration of their effects on Army personnel. In this regard, the phasing of force reductions will be especially critical if the Army is to avoid unacceptable levels of turbulence.

Conclusions

The Army's experience in implementing AOE has yielded important lessons that should be applied as it proceeds with its restructuring plans. As with AOE, realistically projecting the resources that will likely be available for a new force structure is a critical step in building an "affordable" future Army. With the changed security environment, Army planners will need to reevaluate some of the decisions made under AOE—especially regarding the extent to which the Army can safely accept partially resourcing its force structure in peacetime and the extent to which it should rely on reserve forces. A changed security situation, including the projected increased warning time of a European conflict, should enable the Army to consider options that until now might have seemed less acceptable. Above all, the sound management of the Army's restructuring will be crucial to preserving the gains that have been made in force quality and readiness over the past decade.

Status of the Army's Conversion to AOE

AOE was approved in November 1983, and the Army began to convert its units to the new designs beginning in January 1984. As of September 30, 1989, the Army had converted 82 percent of its divisional personnel and 40 percent of its nondivisional personnel to AOE. Although divisions were programmed to convert to AOE designs first, several Army divisions have not yet converted—particularly the National Guard infantry divisions. The original AOE design was for all non-mechanized infantry divisions to become light infantry divisions, but Army leadership deferred implementing this element of AOE.

As shown in table I.1, significant changes in the Army's divisional structure have occurred, although not all divisions have been reduced to the size envisioned by the AOE task force.

Table I.1: Comparison of Authorized Personnel in Army Divisions Before and After AOE

Division	1983		1989	
	Number	Average size	Number	Average size
Armored Active				
Armored	3	17,403	3	16,764
Cavalry	1	11,939	1	16,560
National Guard Armored	2	17,027	2	15,930
Mechanized				
Active	6	17,830	6	17,259
National Guard	1	17,102	2	16,565
Infantry Active	2	17,261	0	0 ^a
National Guard	5	16,401	5	16,045
Light Infantry Active	0	0	4	10,679
National Guard	0	0	1	10,529
Specialized				
82nd Airborne	1	16,316	1	13,013
101st Air Assault	1	16,676	1	15,114
2nd Infantry	1	14,150	1	12,049
9th Infantry	1	16,565	1	16,537
Total Army divisions	24	16,772	28	15,199
Active	16	16,835	18	14,991
National Guard	8	16,645	10	15,574

^aThe only two active Army infantry divisions were converted to light infantry designs under AOE. These were the 7th and the 25th Infantry Divisions.

As shown in the table, the Army added two light infantry divisions to its active forces and one light infantry division and one mechanized

infantry division to the National Guard in increasing the number of divisions from 24 to 28 between 1983 and 1989. In addition, the Army converted two active Army infantry divisions to the AOE light infantry division design. Except for the 1st Cavalry Division, the average size of all types of divisions decreased.

Table I.2 shows that the active Army has converted more of its force to AOE designs than have the National Guard and the Army Reserve.

Table I.2: Extent of Army Conversions to AOE Through Fiscal Year 1989.

Percentages of authorized personnel			
	Combat	Support	Total
Active Army	85	41	72
National Guard	64	23	53
Army Reserve	29	20	22
Total Army	71	28	56

There are several reasons that Guard and Army Reserve conversions have lagged behind those of the active Army. First, 73 percent of the personnel in Army Reserve units provide support; most of these units were not scheduled to convert until the early 1990s. Second, AOE unit designs frequently require personnel and equipment reductions that are more difficult to make in the reserve components. While the active Army can reassign personnel to accommodate a new design, it is more difficult for the reserve components to reduce the size of a unit, give up equipment, retrain personnel, and recruit personnel with different skills. Army Reserve officials told us that, in addition, some AOE designs have a high proportion of low-skilled positions with limited promotion potential, thereby making it difficult to recruit and retain soldiers in these units. In other cases, some AOE unit designs, such as those for quarter-master activities, simply do not fit the unique features of reserve operations and have had to be modified.

Table I.2 shows that, while the Army has converted 71 percent of its combat structure, it has converted only 28 percent of its support structure. This is in accordance with the Army's plan to convert combat structure first and delay the conversion of its support structure until the early 1990s. However, many of these conversions have now been stretched out to 1996 due to cuts in Army funding and delays in implementing the LUPS program.

Comments From the Department of Defense



FORCE MANAGEMENT
AND PERSONNEL

ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301-4000

OCT 24 1990

Mr. Frank C. Conahan
Assistant Comptroller General
National Security and
International Affairs Division
U.S. General Accounting Office
Washington, DC 20548

Dear Mr. Conahan:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) draft report, "ARMY FORCE STRUCTURE: Applying Lessons Learned from the Army of Excellence to Tomorrow's Army," dated August 28, 1990 (GAO Code 393361) OSD Case 8455. The Department generally agrees with the GAO findings and recommendations, but feels the audit does not fully recognize the extent of the accomplishments achieved under the Army of Excellence.

The Army of Excellence restructuring was an ambitious undertaking. Essentially every unit in the Army was reorganized, and two active component light divisions were created. In addition, all of the restructuring initiatives were programmed to be accomplished within a fixed active end strength and within the budget levels expected at that time. Concerning the GAO conclusion that the Logistics Unit Productivity System Program was not managed effectively, the Department emphasizes that significant progress has been made in getting the program on track. The equipment issues have been resolved and some units have already been converted to the new design. Most of the funding for equipment for the remaining units has been appropriated in the FY 1986 through FY 1990 budgets, and the remaining funds are programmed in FY 1991 and FY 1992.

Detailed DoD comments on the report recommendations are provided in the enclosure. The Department appreciates the opportunity to comment on this draft report.

Sincerely,

Christopher John
Christopher John

Enclosure:
As Stated

GAO DRAFT REPORT - DATED AUGUST 28, 1990
(GAO CODE 393361) OSD CASE 8455

"ARMY FORCE STRUCTURE: APPLYING LESSONS LEARNED FROM
THE ARMY OF EXCELLENCE TO TOMORROW'S ARMY"

DEPARTMENT OF DEFENSE COMMENTS

* * * * *

RECOMMENDATIONS

- o **RECOMMENDATION 1:** The GAO recommended, as the Army restructures its forces, the Secretary of the Army ensure that in the future the Army fully documents the basis for major changes in its force designs. In particular, the Secretary should ensure that risks associated with major force designs are clearly identified (p. 9, p. 41/GAO Draft Report)

Now on pp. 5 and 24.

DoD RESPONSE: Concur. The recommendation is essentially moot, however. Currently, all force structure changes to the Tables of Organization and Equipment are initially documented within the "Boarding Process" of the Army's Training and Doctrine Command. In addition, during the Total Army Analysis process, discussions and decisions of the Army Vice Chief of Staff are captured and filed on videotapes. These discussions and decisions take into account the risks associated with the major force designs. The explanation for the force structure changes are published in the Army Structure message to the major commands. The Training and Doctrine Command documents an explanation for these changes in Table of Organization and Equipment and in their pamphlet 25-3, Consolidated Table of Organization and Equipment Update. During the Semiannual Command Plan process the force structure is reviewed and subsequently documented in the Force Accounting System, the Army Authorization Documents System, and the Program Budget System. Messages to the major commands document any subsequent adjustments.

- o **RECOMMENDATION 2:** The GAO recommended that the Secretary of the Army establish mechanisms to (1) track the implementation of any major force structure initiatives that are introduced and (2) assess progress toward the initiatives' goals. (p. 9, p. 41, p. 68/GAO Draft Report)

Now on pp. 5 and 42.

DoD RESPONSE: Concur. Within the Department of Army, organizational integrators in the Office of the Deputy Chief of Staff Operations and Plans track and assess progress towards implementing any force structure initiative.

Page 1 of 3

Although the scope and speed of implementation of the Army of Excellence precluded maintaining a perfect audit trail, major force changes are normally fully audited. The fielding of Mobile Subscriber Equipment, which totally reorganized the Army's division and above signal structure and resulted in the savings of thousands of spaces, is a typical example of how the implementation of major force redesigns are tracked by the organizational integrators. In addition, the Force Accounting System and the Program Budget System databases are being consolidated into the Structure and Manpower Allocation System. This merger, which is scheduled to come on-line October 1, 1990, will facilitate control of both manpower and fiscal resources.

- o **RECOMMENDATION 3:** The GAO recommended that the Secretary of the Army resolve the current disagreement on the development and application of Manpower Requirements Criteria to achieve a more consistent basis for determining support force requirements. (p. 9, p. 68/GAO Draft Report)

Now on pp. 5 and 42

DoD RESPONSE: Concur. The purpose of the Manpower Requirements Criteria is to provide minimum essential wartime requirements to combat support and service support organizations. The Manpower Requirements Criteria is currently under review. The principal focus of the review is a thorough reexamination of the manpower allocation factors. Completion is expected early in 1991 followed by the appropriate modification to Army regulations.

- o **RECOMMENDATION 4:** The GAO recommended that the Secretary of the Army assess the implications of retaining National Guard infantry divisions (non-mechanized) in nonstandard designs and if warranted, develop a plan for standardizing these forces. (p. 9, p. 68/GAO Draft Report)

Now on pp. 5 and 42.

DoD RESPONSE: Concur. There are five Infantry Divisions in the National Guard. The status of converting each to Army of Excellence design is, as follows:

<u>NAME</u>	<u>% CONVERTED</u>
26th Infantry Division	100%
28th Infantry Division	38%
38th Infantry Division	40%
42nd Infantry Division	45%
47th Infantry Division	38%

All of the Divisions have fully converted aviation brigades. The principal areas still requiring conversion to new design

are the infantry, the engineers, the artillery and the support commands. All other areas have been converted or are projected to be converted by the end of FY 1997. However, because of the changing threat, all Army force structure will undergo major revisions. Current plans call for the inactivation of two of the divisions and two more are proposed to convert to a heavy cadre design, which will be consistent with Army of Excellence designs.

- o **RECOMMENDATION 5:** The GAO recommended that the Secretary of the Army resolve existing problems in implementing the Logistics Unit Productivity System program to improve the prospects that the expected manpower savings are achieved. (p. 9, p. 68/GAO Draft Report)

DoD RESPONSE: Concur. Significant progress has been made in getting the Logistics Unit Productivity System program back on track. However, recent changes in the combat forces have caused significant changes in the requirements for logistics units. Currently, 370 units remain in the program and a further reduction of 30 to 40 units is expected. A validation plan was established in March 1990 to assure units converting to the new structure will attain at least C-3 readiness upon conversion. The general officer steering committee to approve the final implementation plan was cancelled due to operation Desert Shield. Upon redeployment of the units from Desert Shield, the Department of Army will continue the implementation of the Logistics Unit Productivity Program.

In addition, the GAO study cites a manpower savings of 29,000 positions. Only 5,000 of the 29,000 spaces are manpower savings in active and reserve component units. The remaining 24,000 spaces are savings in requirements for unmanned, unresourced units (Army component 4).

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Glossary

AirLand Battle	The current Army doctrine, published in 1982. It gives the key role of directing the battle to the corps rather than the division commander and calls for U.S. forces to take the offensive by air and land to bring about a rapid conclusion to the war on an extended battlefield.
Combat Forces	Forces that have a primary mission to fire on the enemy. These include air defense, armor, aviation, field artillery, combat engineering, and infantry forces.
Combat Support Forces	Forces providing operational assistance to combat elements including chemical, engineering, signal, military police, and military intelligence forces.
Combat Service Support Forces	Forces performing personnel service support, logistics, and administrative functions supporting the operations of units. These forces generally include adjutant general, composite service, medical, chaplain, finance, judge advocate general, ordnance, quartermaster, and transportation forces.
Deployable Forces	Divisional, nondivisional combat, tactical support, theater, mobility, and strategic force units.
Heavy Forces	Armored, cavalry, and mechanized infantry units.
Hollowness	As defined under AOE, the shortfall between authorized personnel spaces and required spaces—including spaces in both resourced and unresourced units.
Host Nation Support	Civil and military assistance rendered by a nation to foreign forces within its territory during peacetime, times of crisis/emergencies, or war, based upon agreements mutually concluded between nations.
Light Forces	Infantry (non-mechanized), light infantry, airborne, and air assault units.

**Manpower Requirements
Criteria (MARC)**

Standards approved by the Department of the Army for determining minimum-essential wartime position requirements for combat support and combat service support positions in the deployable Army. These criteria are derived from detailed studies performed by the TRADOC proponent schools for the various functions.

Special Operations Forces

Forces cross trained in basic and specialized military skills and organized into small, multipurpose detachments with the missions to train, organize, supply, direct, and control indigenous forces in guerrilla warfare and counterinsurgency operations and to conduct unconventional warfare operations.

Unresourced Units

Units that are not staffed and not equipped but are required by Army doctrine. These units represent the Army's fourth component, the first three components being active forces, National Guard forces, and the Army Reserve.

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