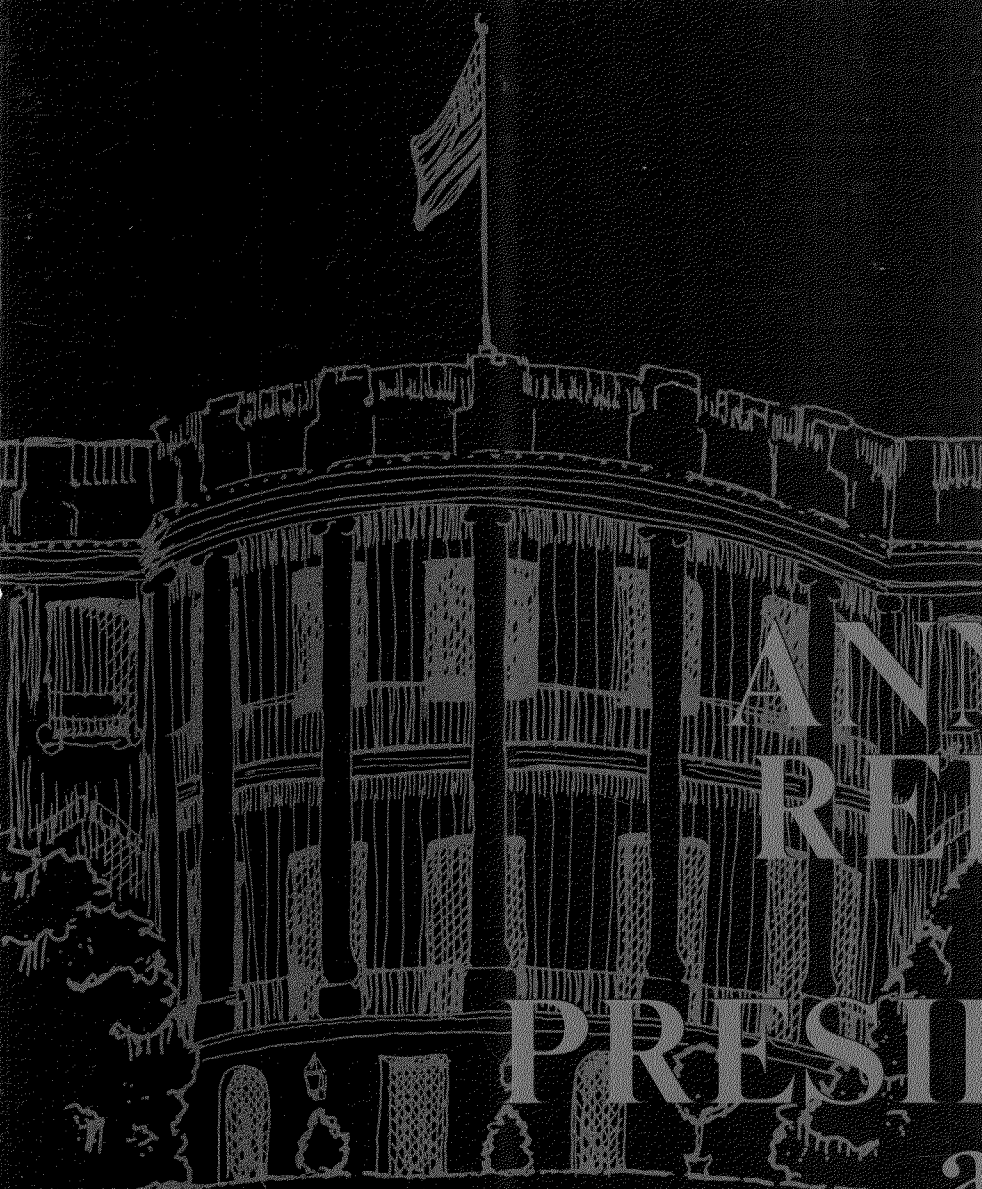
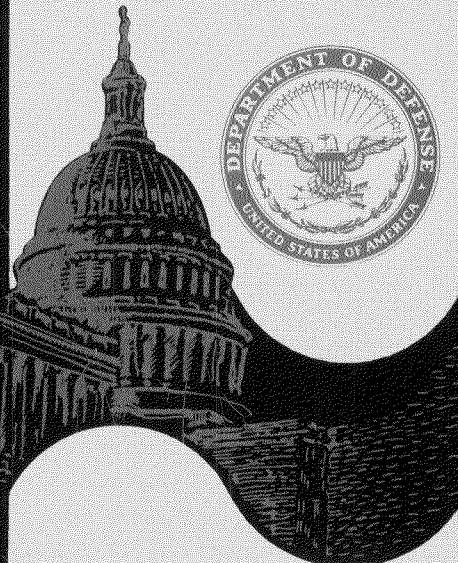


JANUARY
1990



ANNUAL
REPORT
to the
PRESIDENT
and the
CONGRESS



Dick Cheney
Secretary of Defense

**Report of the Secretary of Defense
to the President and the Congress**

January 1990

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TO THE PRESIDENT AND THE CONGRESS OF THE UNITED STATES

This annual report is being published in the midst of historic and promising transformations in the global security environment. The implications are being felt everywhere, but nowhere more than in the Soviet Union and Eastern Europe.

For four decades, the primary concern of the North Atlantic Treaty Organization (NATO) has been to deter a Soviet-led attack on Western Europe. Now, instead of an invasion of troops moving from East to West, the ideas and institutions of freedom are moving from the West to the East.

The events of 1989 have reduced the threat of a sudden Soviet attack in Europe; they clearly call for a review of U.S. defense policy priorities in the 1990s. However, as we respond to these positive developments, we have a responsibility not to get ahead of events. Much remains unsettled, the Soviet Union remains a nuclear superpower, and U.S. interests over the coming decades will face a growing number of potentially serious threats from other sources. In short, the opportunities are great, but so are the uncertainties and risks.

We can respond to the opportunities, deal with the uncertainties, and control the risks if we first remember how we got to this point in history. Since World War II, the United States has been the major leader in the world urging the peaceful evolution of freedom, democracy, and economic well-being. We have been able to play that role because a bipartisan U.S. consensus has supported an alliance strategy of forward defense, based on forward deployment, flexible response, and adequate strategic nuclear and conventional deterrents. We have begun now to plan how to attain the same basic strategic objectives with a somewhat smaller defense budget. However, any reductions must be managed with great care. Even if the Soviet threat recedes permanently — and it has certainly not yet done so — American power will still be required to meet other contingencies and obligations worldwide.

We have recently seen a graphic example. The use of the military in Panama in December 1989 was a demonstration of how effective a well-trained, professionally led, adequately equipped, and appropriately applied military force can be. It took a major investment to develop the capabilities that made Operation Just Cause a success. Such capabilities will become even more critical in the future.

In coming decades, we must be prepared for the possible emergence of new powers, for potential Third World conflicts, and for the expansion of threats from insurgencies, terrorism, and narcotics trafficking. We also face increasing threats from chemical, biological, and nuclear weapons and missile proliferation. All of these changes are possible, some are very likely, and any of them would increase the complexity of defense. We must prepare for these future risks, without losing sight of either the opportunities or threats of the present.

Therefore, 1990 should be a year in which we plan carefully for a full range of realistic contingencies. We should respond positively, where appropriate, but we should not move so rashly that we shut off options that ought to be preserved. This annual report is a statement of where we now stand and a broad overview of the needs we foresee. The fiscal year (FY) 1991 budget will outline the Department's needs in what may be the first year in the next stage of U.S. military history. Meanwhile, we are beginning to work on the new defense program for FY 1992-97, which will carry us well into that new era of opportunity.

It is important, however, not to initiate premature 1992-97 budget cuts in 1991. There is an extraordinary degree of flux in the international environment. Remarkable changes have transformed Eastern Europe, but much remains to be

done before democratic institutions can take firm hold. Furthermore, we may still see the reemergence of some of the region's historic sources of turbulence.

Moreover, although we are optimistic about the negotiations over Conventional Armed Forces in Europe (CFE) and the Strategic Arms Reduction Talks (START), we must remember that those negotiations are still under way. Even under the timetable President Bush gave General Secretary Gorbachev in December, the treaties will not be ready for ratification until the next fiscal year has begun. The FY 1991 budget therefore must avoid unilateral cuts that would undercut allied bargaining leverage or create undue pressures for other premature reductions.

During the six-year program for FY 1992-97 we will continue our defense adjustments and make real budget reductions if several key assumptions hold true: first, that the positive developments we are now seeing continue; second, that we conclude satisfactory CFE and START agreements; and, third, that nothing happens to require an unforeseen, significant commitment of U.S. force. If these assumptions hold up, we plan to cut defense costs and to restructure the military in ways that will continue, in an uncertain world, to maintain deterrence and keep risks at a low level. If the assumptions do not hold up, we will have to reassess our defense planning guidelines again. However, following through on such a reassessment would be possible if, and only if, Congress does not slash the defense budget prematurely or unwisely in 1991.

The basic structure of this annual report is intended as a preparation for the program-by-program materials to follow in other documents. The report begins with a statement about national security concerns, objectives, and policy priorities. It then moves through a discussion of defense resources to an examination of specific defense components. Rather than summarize the entire report, I shall instead take this opportunity to review a few of the broad themes that will guide the Department's planning in coming months:

(1) Declarations of new Soviet policy intentions are only beginning to be implemented through changes in Soviet force structure. The reductions we have seen so far, the promise of additional changes, and the political developments in Eastern Europe give us hope that future reductions in our conventional forces will be possible. However, any plans for such reductions must be made in full consultation with our allies, they must be based on real and hard-to-reverse changes in Soviet forces, and they must be sufficiently reversible to allow for the inherent volatility of the political situation now unfolding in Eastern Europe and the Soviet Union.

(2) We must expect that the Soviets will continue to modernize their forces and maintain aggressive research and development programs. Therefore, as we think about reductions, we must pay attention to those elements of our defense program that would be hardest to restore if Soviet intentions should change — the quality of our officers and enlisted personnel, our research and weapons development programs, our industrial base, and the fundamental structure of our alliances.

(3) Deterrence of nuclear attack remains the cornerstone of U.S. national security. Regardless of improved U.S.-Soviet relations and potential arms control agreements, the Soviet ability to initiate strategic warfare against the United States will persist, and a crisis or political change in the Soviet Union could occur faster than we could rebuild our strategic forces. In fact, the Soviet Union has been pursuing a major strategic modernization program. We therefore must continue with the modernization of U.S. strategic forces.

(4) We must vigorously pursue the Strategic Defense Initiative (SDI), both because of Soviet strategic capabilities and because of the spread of ballistic missile technology to other countries. If anything, the new environment makes SDI even more important.

(5) Because the United States has permanent interests in Europe, we must continue to work closely with NATO, even as we seek a more equitable sharing of the defense burden.

(6) We must also recognize the challenges beyond Europe that may place significant demands on our defense capabilities. The changing requirements and new roles and missions assumed by U.S. forces will require strategies that rely more heavily on mobile, highly ready, well-equipped forces and solid power-projection capabilities.

(7) Special operations capabilities also will become increasingly important, and low-intensity conflict will remain, as it has since 1945, the most likely form of violence threatening U.S. interests.

(8) In coming years, our ability to develop, exploit, and protect advanced technologies is likely to be even more crucial than it has been in the past.

(9) We remain committed to improving the Department's relations with the defense industry. Continuing the sometimes adversarial relationships of the present can only harm the technology base and our military readiness in the future.

(10) Fully implementing the recommendations of the July 1989 Defense Management Report will be essential for the Department to perform at peak efficiency. Some of the proposed reforms can be implemented internally; others will require congressional action.

(11) Finally, our highest commitment must be to continue to attract, train, and retain talented and dedicated people to serve in the armed forces.

Undergirding these specific conclusions is a more general principle: the importance of maintaining Western prudence and stability in the face of change elsewhere. For more than 40 years, the United States and its allies have pursued a consistent strategy that has served us well. Our global presence and support for freedom have encouraged the growth of democracy and the flourishing of market economies in all parts of the world, not just in Europe. From the Philippines and South Korea to Panama, Chile, Brazil, El Salvador, and elsewhere, brave people have been struggling to nurture the institutions of democracy.

The strength of the Western alliance has maintained the peace while the flaws of the Soviet system have become visible to all. As a result, the international environment seems to be moving toward a safer future. Therefore, we should — and will — look carefully at our planning priorities. For today, however, uncertainty abounds. Now is not the time to abandon the fundamental approach that has taken us this far.

A handwritten signature in black ink, reading "Dick Cheney". The signature is written in a cursive, flowing style with a large initial "D".

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Part I
Preface

PREFACE

This annual report describes the approach the Department of Defense (DoD) is taking to meet the many challenges to U.S. security interests. Although the changes begun in the Soviet Union and Eastern Europe are welcome, Soviet armed forces remain the most serious military threat to the United States and its allies. Developments elsewhere in the world also pose continuing challenges to our security. Instability resulting from economic pressures throughout the world, violence within the Third World, weapons proliferation, insurgencies, terrorism, and drug trafficking all threaten U.S. interests.

This era of tremendous uncertainty demands a carefully designed, flexible strategy. The United States must be dynamic and imaginative in responding to opportunities, but it must also be cautious. It must maintain defenses that are capable of deterring and, if necessary, responding to an increasing range of potential threats to its security.

The Administration's defense budget priorities remain clear. To perform its national security mission and execute effectively the national strategy, including the policies of flexible response and forward defense, the Department of Defense needs:

- High-quality people;
- Ready and sustainable forces;
- Modern strategic forces; and
- Efficient acquisition of weapons and equipment.

Obtaining these essential elements is a complex and difficult task in a fiscally constrained environment.

The framers of the Constitution gave Congress the power to appropriate funds to raise armies and provide a navy, and gave the President the power to command those forces. This constitutional framework calls for close cooperation between the executive and legislative branches of government to ensure a strong national defense. The Department of Defense will respond to that call.

Part II
Defense Policy

NATIONAL SECURITY CONCERNS AND DEFENSE POLICY PRIORITIES

The United States is entering the decade of the 1990s facing both great opportunities and great uncertainties in the international security environment. U.S.-Soviet and East-West relations have improved markedly since the early 1980s. Recent changes in Eastern Europe may reduce the division of Europe and hold the long-term potential for bringing freedom and a decent quality of life to millions. Conditions are good for negotiating significant reductions in Soviet military forces and developing a durable framework for peace and cooperation. Nevertheless, the Soviet Union's military power remains formidable. Despite initial Soviet force reductions, an aggregate military capability built up during 20 years of relentless growth in Soviet defense spending continues to pose a potential threat to the interests of the United States and its allies. Soviet policy declarations reflect changes in Soviet intentions, but they are only just beginning to be implemented and are still relatively easy to reverse. In all events, the Soviets will continue to have a strong military capability.

These very significant realities offer unprecedented opportunities but also potential dangers. Our defense policy must respond to both. American strength has been a major factor in deterring aggression. We must first, therefore, continue to maintain a compelling conventional and nuclear deterrent posture, made possible in large part by a strong alliance system and global military presence. We must rely as much as possible on our two greatest strengths: well-motivated, high-quality people and technological innovation. In addition, precisely because declarative changes in policy are easy to reverse, we must pursue defense policies that encourage reform in the Soviet Union and Eastern Europe, making reversal more costly and therefore less likely. Control of conventional arms and the initiation of a dialogue on military doctrine are vital elements in our approach. Finally, we must save taxpayers' resources where a decreasing threat makes doing so possible.

While cooperative aspects of the U.S. relationship with the Soviet Union are growing in this period of change and uncertainty, the United States must be prepared to remain in long-term competition with the Soviet Union. The United States

must ensure that its enduring strengths are aligned against enduring Soviet weaknesses. To accomplish this goal, the United States must identify key technologies, weapon systems, and operational concepts that are most likely to maximize the deterrent effect of increasingly constrained resources the United States devotes to the national defense. This approach, known as Competitive Strategies, maximizes the effectiveness of U.S. defenses and provides a hedge against any potential future failure of the cooperative aspects of U.S.-Soviet relations.

The nation must be prudent and cautious in adjusting the size and composition of its military forces. Abrupt, poorly planned cuts would pose great dangers to our long-term security. An inadequate defense structure cannot be rebuilt quickly should a revitalized threat require it. A decade or more is needed for research, design, and production of today's sophisticated weapon systems, and a decade may not be sufficient to recoup the essential leadership and warfighting knowledge that only experience develops. Due to the great uncertainties of the present, the nature of tomorrow's threat cannot be predicted with a high degree of confidence. The United States will be prepared to meet new challenges only if it maintains effective and flexible defense capabilities today.

Events in the following important areas reflect sweeping changes in the world that portend even greater security challenges in the coming years:

- **Events in Eastern Europe.** The unprecedented and revolutionary events in Eastern Europe are a clear victory for Western postwar policies. No one can predict the ultimate resolution of these events, however, making the prospective formulation of an effective policy difficult.
- **Events in Western Europe.** As the economies of Western Europe move toward integration by 1992, economic relations between the United States and the European Community will grow more complex. The potential impact of economic integration on defense production, cooperative agreements, and various burdensharing issues will require close examination.
- **Evolving Situation in China.** The Chinese government's violent crackdown on protests at Beijing's Tiananmen Square and elsewhere

throughout China called into doubt the chances for reform in China.

- **Increasing Economic Interdependence with the Nations of East Asia and the Pacific.** The growth in trade between the United States and the nations of East Asia and the Pacific has focused increased attention on defense priorities and U.S. interests in the region. Increasing economic competition and concern over U.S. access to military facilities will require special efforts to maintain international cooperation.
- **Turbulence in the Middle East and Southwest Asia.** Long-standing economic and political tensions in the Middle East and South Asia weaken local regimes, fuel regional arms races, and pose the threat of large-scale armed conflict. The Middle East's chronic instability could also jeopardize assured access to the region's oil, which is critical to the economic stability of the industrial world.
- **Proliferation of Weapons in the Third World.** High-technology weapons of all types are available in increasingly alarming quantities in the international marketplace. Proliferation of chemical, biological, and nuclear weapons, as well as modern long-range delivery systems, in the Third World constitutes a grave threat to U.S. interests.
- **Terrorism.** Americans are vulnerable to terrorist activities around the globe, and the number of incidents involving Americans may increase. This will enhance the likelihood of U.S. counterterrorist actions requiring DoD support.
- **Narcotics Trafficking.** The flow of illegal drugs into the United States and the continued demand for such drugs in our society have created an unprecedented and perplexing national security threat of major proportions.

U.S. national security objectives provide the essential, enduring elements upon which our defense strategy and policy are structured. One of the reasons for the success of America's postwar defense strategy has been its consistency. Based on our fundamental national security goal of preserving the United States as a free nation, our basic national security objectives include the following:

- To deter military attack against the United States, U.S. allies, and other U.S. interests; and to defeat such attack should deterrence fail.
- To reduce U.S. reliance on nuclear retaliation through active research and development of strategic defense technologies, through the

negotiation of equitable and verifiable arms reduction agreements, and through the maintenance of strong conventional forces.

- To encourage the establishment and strengthening of freedom and democracy around the globe.
- To encourage and assist U.S. allies and friends in defending themselves against invasion, armed insurgencies, terrorism, or coercion.
- To encourage the political and economic reforms taking place in the Soviet Union and Eastern Europe, and to foster related adjustments in their military postures.
- To protect free commerce and ensure U.S. access to world markets, natural resources, the oceans, and space.
- To prevent or slow the proliferation of nuclear, chemical, and biological weapons, and the missiles and missile technology capable of delivering these weapons.
- To halt the transfer of militarily significant technology and resources to the Soviet Union and to other countries or entities that may use them in ways inimical to U.S. interests.
- To stem the flow of illegal drugs into the United States.

Several critical defense policy priorities flow from these objectives:

Credible Deterrent Forces. The United States deters war by making it clear in advance to potential aggressors that the costs of aggression would far outweigh any possible gains they might hope to achieve. Accordingly:

- To deter Soviet nuclear attack on the United States and its allies, and to help deter conventional attack, the United States maintains a diverse mix of survivable and capable strategic and nonstrategic nuclear offensive forces that hold at risk those assets most valued by Soviet leaders and provide a range of options in response to attack.
- At the same time, the United States actively pursues research and development of effective strategic defenses, with the objective of developing options for strengthening deterrence and stability through the deployment of a strategic defense system.
- Pending an effective ban on chemical weapons, the United States maintains credible chemical defensive and retaliatory capabilities as an

effective deterrent against an attack with chemical weapons.

- The United States maintains conventional forces that are sized, equipped, and positioned to fight effectively, in combination with the forces of its allies, at the point of an attack. The United States' aim is to be clearly able to defeat such an attack quickly and decisively, preferably without resort to nuclear weapons and without extending the conflict to other theaters.

Alliance Structure. Through shared values and common interests, the United States and its European allies have forged a security partnership that has preserved peace and democracy in Western Europe for more than 40 years and enhanced global stability. The partnership has worked because it has provided a deterrent to aggression, contributed to the forward defense of our common interests, and supported the efficient allocation of manpower and materiel. Similarly, U.S. alliances with Asian and Latin American countries have protected free nations through mutual defense.

Arms Control. The United States engages in arms control as part of a coordinated effort to enhance its security — not as an end unto itself. Through arms reduction agreements, the United States seeks to reduce military threats to U.S. and allied interests, inject greater predictability into military relationships, and channel force postures in more stabilizing directions. Such agreements must place a premium on the detection of militarily significant noncompliance and preserve the latitude to conduct an effective political, economic, or military response. Negotiations currently under way include the Conventional Armed Forces in Europe (CFE) talks, the Strategic Arms Reduction Talks (START), Defense and Space Talks (DST), nuclear testing talks (NTT), chemical weapons negotiations, and negotiations on confidence and security-building measures (CSBMs).

Verification is an essential element of the arms control process. In 1988 the On-Site Inspection Agency was established as a separate DoD agency to carry out U.S. inspection activities under the terms of the U.S.-Soviet Intermediate-Range Nuclear Forces (INF) Treaty. The agency also coordinates the equivalent Soviet activities at U.S. facilities in the United States and in Western Europe.

Fight Against Illegal Drugs. The detection and countering of the production, trafficking, and use of illegal drugs are high-priority national security missions of the Defense Department. The supply of illicit drugs to the United States from abroad, the associated violence and international instability, and the use of illegal drugs within this country pose a direct threat to our security. By law, the Department of Defense serves as the lead agency within the federal government for detecting and monitoring the airborne and maritime transit of illegal drugs to the United States. By direction of the Secretary of Defense, the Department is substantially engaged in the national fight against illegal drugs.

Technology Security. Soviet-East European attempts to gain access to Western-controlled militarily critical technologies continue unabated. NATO reaffirmed at its May 1989 summit that technology security remains central to Western security as we negotiate arms reductions with the Soviet Union and Eastern European countries.

Technology security issues, however, are not limited solely to the Soviet Union and Eastern Europe. Third World nations in pursuit of nuclear, chemical, or biological weapons technology or missile technology also present a serious challenge to the United States and must remain a focus of attention.

Low-Intensity Conflict. Low-intensity conflict continues to be the most likely form of violence involving U.S. interests. In addition to violence resulting from insurgencies, regional hostilities, and terrorism, U.S. forces face potential threats from drug trafficking and the proliferation of chemical/biological weapons. We must prepare an active and timely defense against such violence, one that presents a credible deterrent and remains capable of using power when necessary. The Department must also address the underlying causes of instability by assisting in the nation-building process through economic, security, and humanitarian assistance, and civic action in support of U.S. foreign policy objectives.

Improved Intelligence Support. In uncertain, rapidly changing times, effective intelligence capabilities become even more critical to assessing significant events. Dynamic policy that effectively

responds to these events is dependent upon a comprehensive, current, and sophisticated intelligence data base. Accurate and insightful analyses of capabilities and intentions of an ever-broadening range of potential adversaries are essential to an effective force-structuring process. As a result, a high priority has been placed on strengthening U.S. intelligence collection and production capabilities.

Research and Development (R&D). Continued investment in research and development remains

an important policy priority. R&D programs have contributed to deterrence over the past decade, and continued investment today is vital if we are to achieve a secure future.

These policy priorities, which represent but a sampling of matters of concern to the Department, respond to a changing world environment. While moving to capitalize on these changes, the United States must maintain its military capability to respond successfully to any threat to its national security.

COLLECTIVE SECURITY

One of the first principles of our security strategy is to maintain vigorous alliance relationships that promote forward defense of the United States and collectively maintain peace with freedom through strength.

The United States currently is party to seven formal alliances:

- The North Atlantic Treaty Organization (NATO) alliance;
- The Australia-New Zealand-United States (ANZUS) alliance (although U.S. obligations to New Zealand are suspended as a result of New Zealand's decision to ban U.S. nuclear-powered and nuclear-capable ships from its ports);
- The Treaty of Mutual Cooperation and Security between the United States and Japan;
- The Mutual Defense Treaty between the United States and the Republic of Korea;
- The Mutual Defense Treaty between the United States and the Republic of the Philippines;
- The Southeast Asia Collective Defense Treaty (which remains in effect with Australia, New Zealand, the Philippines, Thailand, France, and the United Kingdom); and
- The Inter-American Treaty of Reciprocal Assistance (the Rio Treaty).

In addition to these alliances, the United States maintains defense agreements and less formal arrangements with a number of other nations.

The alliance structure has succeeded because the United States and its allies share common political, economic, and security interests. The United States must continue to reaffirm the alliance policies that have kept it and its allies free and secure for 40 years. As we face new challenges, we must maintain our leadership role, since we are the only free power currently capable of responding to aggression in global terms. But in fulfilling that role, we will depend more than in the past on our allies to share the crucial responsibilities of our mutual defense.

As the United States seeks to maintain the vitality of its alliances, there are several major issues that must be addressed squarely. These include sharing the mutual responsibility for the

common defense, international armaments cooperation, overseas basing, and security assistance.

Sharing the Mutual Defense Burden

Even as events unfold in a rapidly changing Europe, at the heart of American concerns about sharing the responsibility for the defense of free Europe is the continuing need to maintain NATO's deterrent and defense capabilities. Currently, our European allies (excluding France and Spain, whose forces are not integrated into the NATO command structure) provide the majority of the forces and equipment deployed in Western Europe. Many of our allies make an important contribution to the common defense by providing us base access free of charge.

The United States seeks to concentrate on providing capabilities for which U.S. forces have a comparative advantage and to avoid duplication of effort with and among our allies.

Accordingly, we are urging our allies to:

- Meet force goals, especially those highlighted in the Conventional Defense Initiative (CDI);
- Improve sustainability (that is, the number of days of supply of war reserve stocks, munitions, petroleum products, and other basic supplies);
- Improve the readiness and efficiency of forces allocated to NATO; and
- Support long-term defense planning based on rationalization and division of labor, reserves, and mobilization capabilities and common and joint funding opportunities.

Our Asian allies also contribute substantially to the common defense. Japan provides the United States with bases at no cost to the U.S. at the most critical geostrategic location in Northeast Asia. In recent years, it has increased its share of the mutual defense responsibility, and now provides about 40 percent of the cost of stationing U.S. forces on its territory. Recently, the Japanese government agreed to fund approximately 50 percent of the total cost of Japanese labor employed on American bases in Japan. In addition, Japan now spends some \$30 billion a year on defense, which is roughly equivalent to the individual French, British, and West German defense budgets. But Japan should do even more in the area of cost

sharing and in improving the quality and sustainability of its current forces.

The U.S. alliance with the Republic of Korea and the presence of U.S. forces in that country have sustained deterrence on the Korean Peninsula for almost four decades and continue to contribute significantly to regional peace and stability. Korea's contributions to the alliance are substantial; its annual defense expenditures are slightly under 5 percent of GNP. In addition, Korea funds aircraft depot maintenance and the cost of maintaining war reserve stocks, contributes to theater communications, and supports military construction projects. During the 21st Security Consultative Meeting between the U.S. and South Korean governments in July 1989, both nations reiterated their commitment to retaining U.S. troops in Korea as long as the U.S. and Korean governments and people want them there. The Republic of Korea currently contributes approximately \$300 million per year out of its cash budget to offset the cost of maintaining U.S. forces in the Republic.

International Armaments Cooperation

The United States is making substantial progress in increasing cooperative weapon development programs with its allies. By promoting standardization and interoperability of weaponry, these programs are critical to allied effectiveness. They also reduce redundant expenditures. The Department of Defense considers cooperative opportunities to be an integral part of many U.S. acquisition decisions, and NATO and Japan are moving toward integrating cooperative programs into their armaments planning systems.

Since 1985, the Congress has provided funds specifically for cooperative research, development, and testing efforts with NATO and non-NATO allies. One of these initiatives — the Cooperative R&D Program — is aimed at bringing coordination to the NATO nations' otherwise separate programs for developing and building arms, thereby improving NATO's conventional military strength. U.S. industry receives an important benefit from the requirement to spend U.S. funds allocated to these projects entirely in the United States on American-produced goods and services. The advantages to the United States and its allies, in addition to improved military effectiveness, can be considerable, including reduced R&D costs, improved access to technology, and eventual economies of

mass production. The program has proved successful, and our allies have signed memorandums of understanding committing them to pay approximately 60 percent of the cost shares of the associated research and development projects. Table 1 provides details on these projects.

Overseas Basing

Executing effectively the strategy of forward defense is an important priority. Foreign bases enhance deterrence, contribute to regional stability, allow U.S. forces to reduce their response time in meeting threats, and enable the United States to implement its defense strategy in a more cost-effective manner.

Although many countries in which U.S. forces are stationed have sought increased foreign aid in exchange for basing rights, the United States does not view foreign assistance as "rent" or compensation for base access, but rather as one element of U.S. participation in mutual defense efforts with its allies. There are, of course, clear fiscal limits to what the United States can provide. If mutually satisfactory arrangements cannot be achieved with various countries hosting U.S. forces currently, the United States must be prepared to make alternative arrangements.

Security Assistance

Security assistance to friendly foreign countries is an important part of our national security policy. It helps friends and allies deter aggression or defend themselves against external threats and enhances coalition defense by providing the additional resources needed to shoulder the common defense burden. Current U.S. security assistance priorities focus on encouraging peace in the Middle East, assisting our friends and allies in self-defense, contributing to mutual defense arrangements in which host governments in turn contribute, and aiding foreign drug-interdiction efforts.

There are two major components of our military assistance program: Foreign Military Sales Financing (FMSF), which provides direct credits or grants for the purchase of U.S. military goods and services; and International Military Education and Training (IMET), which is a low-cost, grant aid program that provides military education and training in the United States to approximately 6,000 foreign military personnel each year. The IMET program is one of the most cost-effective

**Cooperative Projects with Signed Agreements
 and Associated Burdensharing Ratios**

Table 1

	United States Share (percentage)
Ada Project Support Environments	43.7
Multifunctional Information Distribution System	28.0
NATO Identification System	46.5
Airborne Radar Demonstration System	38.0
Advanced Short-Takeoff/Vertical-Landing Technology	50.0
Enhanced Fighter Maneuverability Aircraft	65.5
Surface Ship Torpedo Defense	50.0
Post 2000 Tactical Area Communications	16.7
Hawk Mobility Enhancement	50.0
Battlefield Information Collection and Exploitation System	50.0
LINK-11 Improvements	12.5
RPV Multimission Optronic Stabilized Payload	50.0
Total Cost Shares for MOUs Signed to Date — US:	40.0
Allied:	60.0

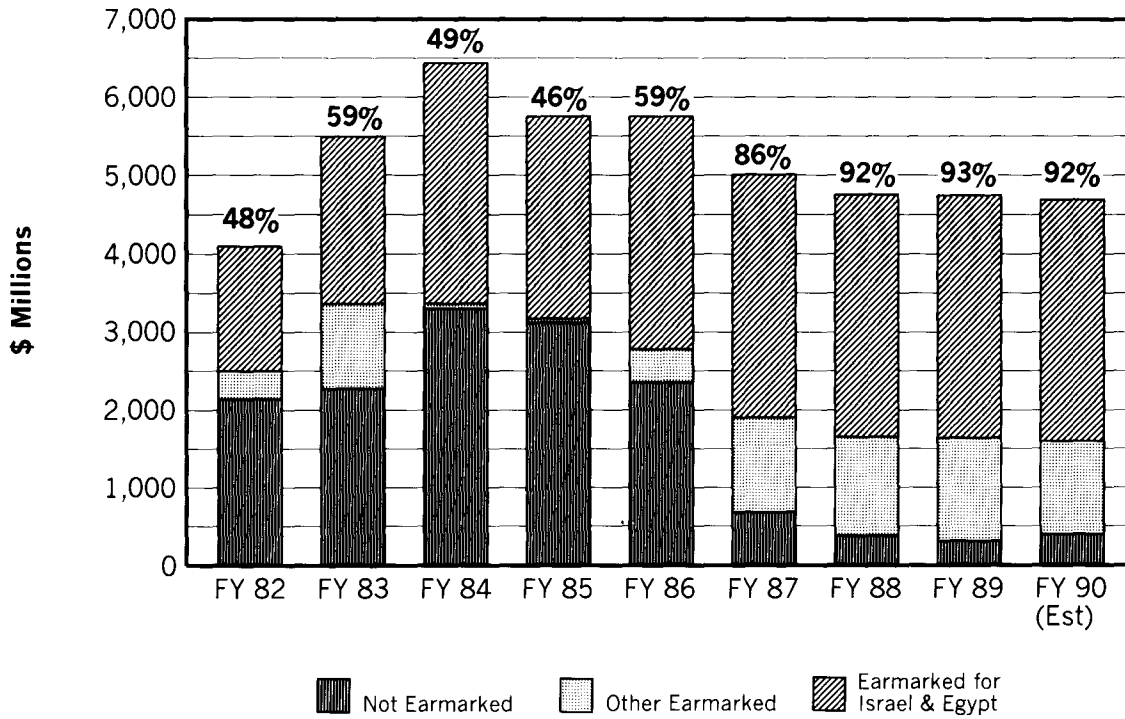
foreign policy tools of the U.S. government. Investing in the military education and training of military personnel from friendly countries greatly enhances the capability of those countries to defend themselves, at a low cost to the American taxpayer.

Unfortunately, resource constraints and congressional earmarking of funds have made it difficult to fashion a security assistance program of sufficient size and with proper focus to protect and

advance our security interests. Funding for FMSF has decreased by over 26 percent since FY 1984, while the percentage of funds earmarked by the Congress for a few favored programs has increased from 49 percent to 92 percent. Consequently, FMS funding available to non-earmarked countries has declined by over 90 percent since FY 1984, thus severely limiting our flexibility to address the security needs of numerous friendly governments. Chart 1 illustrates these trends.

**Military Assistance Funding and Congressional Earmarks
FY 1982 - FY 1990**

Chart 1



Note: Percentages indicate total of Military Assistance Funding earmarked.

Part III
Defense Resources

BUDGET

Preparing and executing a defense budget that supports our national security strategy while providing necessary investments for the future remains complicated by the need for fiscal restraint. The United States must continue to provide an effective deterrent, engage its armed forces effectively in peacetime in the Third World, pursue technological advances that improve defense capabilities, and maintain the quality and readiness of its forces. The executive and legislative branches of government, utilizing creative and cooperative approaches, can meet the challenge of directing scarce resources effectively to address defense requirements.

Four priorities guided development of the Administration's FY 1991 budget request. These priorities are essential to a comprehensive and cohesive defense program that meets U.S. security requirements.

- **People.** The recruitment and retention of high-quality military and civilian personnel, their well-being, and their readiness continue to be among our highest priorities. The well-being of our uniformed personnel has a direct effect on the quality of our forces and their readiness. The FY 1991 budget provides an important pay raise. The budget also provides for reasonable living and working conditions for our service members through morale, welfare, recreation, and family support programs, and through education assistance.
- **Readiness and Sustainability.** The maintenance of high levels of readiness, supported by adequate training and operating tempos, is critical to the successful execution of our national defense strategy. Our forces must also be provisioned to sustain their warfighting capability for the duration of a conflict. The critical components of readiness are high-quality personnel, realistic training, modern weapons and equipment, and logistical support. The budget maintains operating tempos at levels sufficient to provide challenging training for operational units of all four services. Operating tempo, as well as opportunities for units to develop combat skills at high-technology training facilities, must be maintained at levels necessary to sustain readiness. Our sustainability programs ensure that

U.S. forces will have the staying power to fight effectively in a prolonged conflict.

- **Efficient Acquisition.** The power, mobility, and qualitative edge of our nuclear, conventional, and unconventional forces depend on efficient acquisition of weapon systems under streamlined management. The budget continues to give emphasis to selected multiyear procurement and production programs at economical rates. It terminates low-priority efforts that are no longer needed or affordable.
- **Strategic Nuclear Modernization.** The capability, survivability, and endurance of our strategic nuclear forces and their associated command and control structure must be assured. The FY 1991 request provides for continued modernization of our strategic nuclear forces within fiscal constraints. It continues investment in modernized mobile intercontinental ballistic missiles, the Trident D-5 missile, the B-2 Stealth bomber, and the Milstar satellite communications system. Additionally, the Administration is committed to active research and development of strategic defenses as an integral part of modernization.

These four priorities are reflected throughout the FY 1991 budget proposal. They provide the vital guidelines for making tough decisions about defense programs.

Components of the FY 1991 Defense Budget

The Administration's defense budget for FY 1991 proposes budget authority of \$295.1 billion (see Table 2). Appendix A summarizes the budget request by appropriation title and component.

The distribution of FY 1991 budget authority by major appropriation title is shown in Chart 2. Military personnel (including payments to service members, the accrued retirement cost of the current military force, and the cost of supporting programs) and operations and maintenance (including allocations for civilian personnel, maintenance and repair of equipment, utilities, medical services, training, fuel, and spare parts) constitute about 57 percent of DoD budget authority. The remainder of the budget provides funds for research and development, procurement of weapon systems and equipment, military construction, and family housing.

Department of Defense Budget (Dollars in Billions)

Table 2

	FY 1988	FY 1989	FY 1990	FY 1991
Current Dollars				
Total Obligational Authority ^a	288.6	292.2	292.3	297.3
Budget Authority ^b	283.8	290.8	291.4	295.1
Outlays ^c	281.9	294.9	286.8	292.1
FY 1991 Dollars				
Total Obligational Authority ^a	321.0	312.8	303.9	297.3
Budget Authority ^b	315.5	311.3	302.9	295.1
Outlays ^c	314.4	316.2	298.7	292.1

^a **Total Obligational Authority (TOA)** represents the value of direct defense programs for each fiscal year, regardless of financing.

^b **Budget Authority (BA)** permits the obligation of funds for immediate and future disbursement and is associated with the year the authority takes effect. Generally, the difference between TOA and BA stems from the application of receipts that offset total budget authority.

^c **Outlays** represents actual expenditures. About 63 percent of FY 1991 outlays will result from FY 1991 budget authority; the remainder will come from budget authority provided in earlier years.

Outlays in FY 1991 (also see Chart 2) will go primarily for pay (46.2 percent), prior-year requirements (38.5 percent), and current-year operations (4.9 percent). Current-year operations cover base structure and support costs. Outlays from prior-year programs represent amounts already on contract and are largely a function of procurement and research and development investments made in earlier years. Nearly 10.4 percent of FY 1991 outlays will be spent on new investment programs.

The budget request reflects a declining share of the U.S. gross national product, as shown in Chart 3. Planned defense outlays also represent a declining share of total federal outlays (see Chart 4). Proposed funding for the FY 1991-95 period is shown in Table 3.

Budget Predictability and Stability

Stable defense funding is essential to efficient program planning and execution over the long term. Hard-won gains in defense capability can be sustained, and an adequate defense posture assured, when funding is predictable and stable. Drastic swings in funding make effective program management impossible, and they unnecessarily increase the cost to the taxpayer of national defense.

One major benefit that accrues from predictability and stability is clear — planned production rates that provide for lower unit costs. Multiyear procurement (MYP) enables weapons to be purchased more economically and contributes to better planning. These benefits can be expanded and the

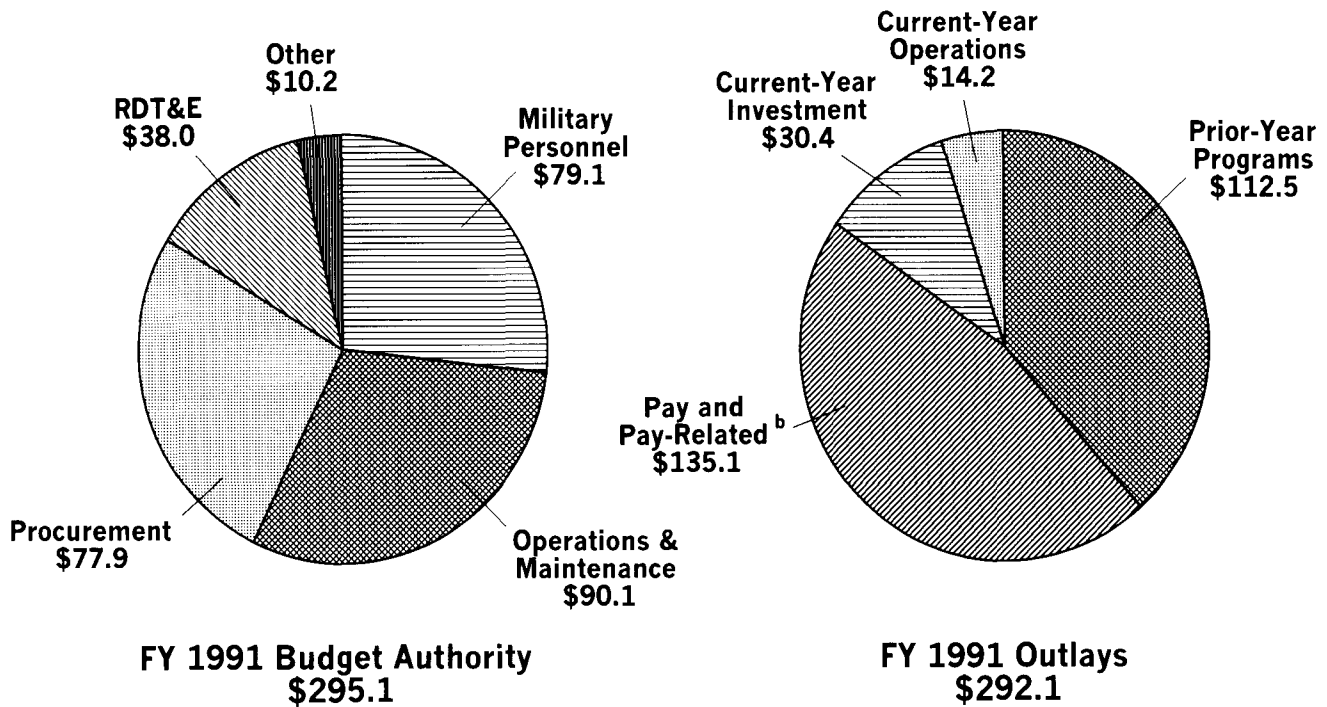
**FY 1991 Department of Defense Budget
Long-Range Forecasts (Current Dollars in Billions)**

Table 3

	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Budget Authority	295.1	300.0	304.4	308.0	311.8
Percent Real Growth	-2.6	-2.0	-2.0	-2.0	-2.0
Outlays	292.1	296.9	299.0	302.3	304.8

Department of Defense Budget Authority and Outlays^a
(Dollars in Billions)

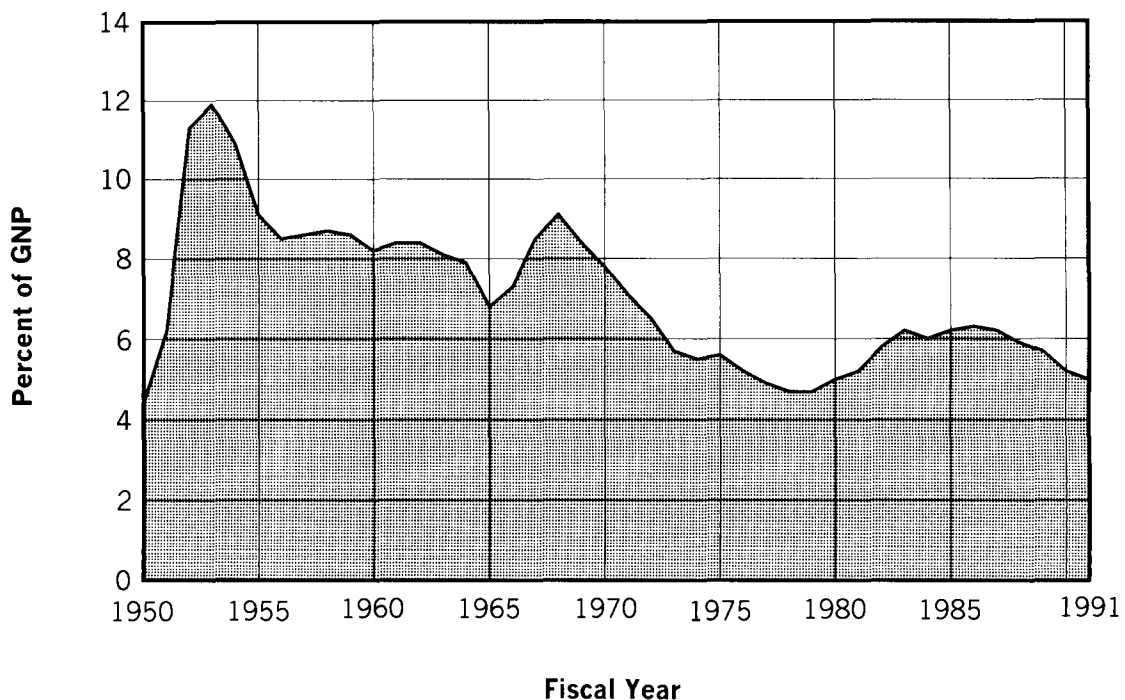
Chart 2



^a Numbers may not add to totals due to rounding.
^b Includes retirement pay accrual costs.

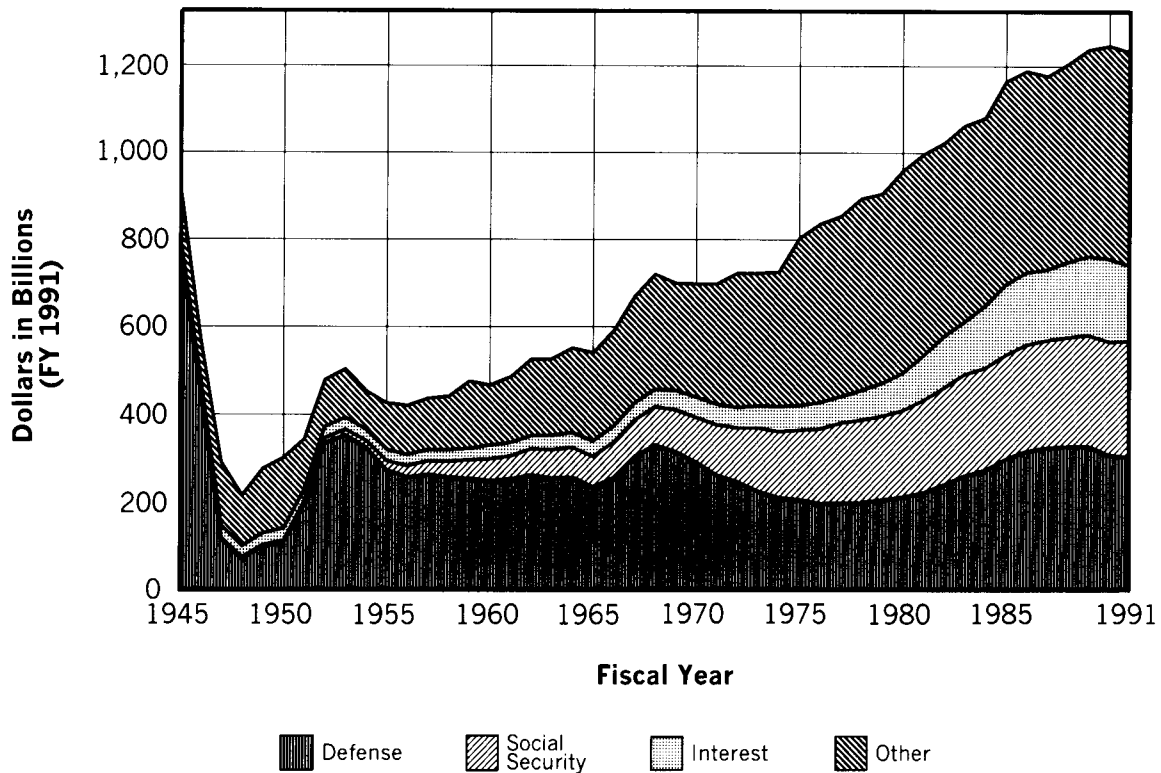
Defense Outlays as a Share of the Gross National Product

Chart 3



Total Federal Outlays

Chart 4



savings multiplied only with defense budgets that are consistent and coherent over the long term. Bipartisan budget agreements between the leaders of the executive and legislative branches have proved important in establishing predictable and stable defense "topline" levels. Full implementation of two-year budgeting for both authorizations and appropriations would go even further toward providing the resource stability necessary for economic program execution.

Congressional Budget Reform

The size and complexity of the congressional structure has resulted in an increasingly time-consuming budget process, which has complicated the Congress's efforts to provide adequate defense resources within constrained funding levels. Defense legislation has become laden with restrictions that hinder the achievement of national

security objectives. Increasing congressional micro-management has hindered the Department's efforts to allocate resources and execute programs in ways that improve efficiency and effectiveness. Congressional demands for extensive written reports on myriad management decisions have imposed an ever-increasing workload on DoD, in many cases without significant benefit to congressional processes.

Simplifying and streamlining the congressional review process could provide the timely and responsive action on budget requests that is essential to stable and predictable defense funding. Full implementation of a biennial budget cycle, supported by long-term funding-level agreements, would make for a more orderly congressional process and a stronger national defense. Enhanced rescission authority would enable the executive branch to eliminate wasteful spending. Effective

congressional budget reform, combined with DoD management and acquisition reform, could pro-

duce a steady, affordable long-term defense program that meets the nation's security requirements.

STRENGTHENING DEFENSE MANAGEMENT

The Department must be prepared to respond to challenging international events in the years ahead. Potential threats to the security of the United States and its allies are likely to increase in some areas and diminish in others. They may well take new and more subtle forms, necessitating U.S. military forces that are modern, ready, and sustainable in a variety of contingencies.

At the same time, as a result of competing national priorities, there can be no doubt that the real resources available for defense in the early 1990s will decline significantly. If the United States is to continue to protect its global interests, meet its responsibilities, and minimize risks to its security, the Department of Defense must preserve essential military capabilities through the ever more efficient use of the resources at its disposal. Such circumstances compel the utmost attention to prudent management of the defense program — and oblige the executive branch, Congress, and industry, more than ever, to join in husbanding available defense dollars, cutting costs, and achieving new levels of productivity and quality. The Department must:

- Ensure the continued strength and readiness of the armed forces;
- Acquire needed weapon systems in less time, at lower cost, and with promised performance;
- Encourage industry and government to meet the highest standards of integrity and performance; and
- Strengthen public confidence in the Department's stewardship of defense resources.

This is a task of immense proportions, requiring improvements in defense management on the scale contemplated by the Packard Commission, the Goldwater-Nichols Defense Reorganization Act of 1986, and the July 1989 Defense Management Report to the President. Answers will not be found in "quick fixes" or simple statements of managerial philosophy. Instead, a concerted long-term effort is required.

The July 1989 Report to the President on Defense Management established a broad agenda to accomplish full implementation of the recommendations of the Packard Commission and to realize substantial improvements in defense management overall. Many of the initiatives proposed in

the Report are being undertaken on the authority of the Secretary of Defense. Some will require concerted action within the Administration, with other executive departments and agencies. Still others — among them actions that hold the greatest promise for long-term improvement — will require the active support of the Congress and the defense industry.

The Defense Management Report sets forth a plan to implement the Packard Commission's recommendations, to improve substantially the defense acquisition system, and to manage the Department and defense resources more effectively. The report identifies requirements to:

- Forge better links among national policy, military strategy, force structure, resources, and programs;
- Enhance programmatic and technical input during resource allocation discussions;
- Reduce significantly the number of programs that overrun their budgets, are late, or are technically deficient;
- Reduce overhead costs while maintaining military strength;
- Establish and enforce high ethical standards of conduct in DoD and the defense industry;
- Reduce micromanagement and simplify the laws and regulations governing DoD;
- Reverse the decline in the industrial base; and
- Improve relations among Congress, DoD, and the defense industry.

Forging better links among national policy, military strategy, force structure, resources, and programs: To facilitate communication regarding fundamental issues of defense policy and management, the Department has established an Executive Committee of the Department of Defense. The committee is chaired by the Secretary and includes the Deputy Secretary, the secretaries of the military departments, the Chairman of the Joint Chiefs of Staff, and the Under Secretaries of Defense for Acquisition and Policy. In addition, a reorganized Defense Planning and Resources Board (DPRB) has permitted more effort to be concentrated on effective planning, thereby improving the linkage among national security policy, military strategy, and resource allocations for specific programs and forces. The Department's new Defense Planning

Guidance will provide for the resolution of several significant planning topics, define the essence of a national defense strategy, summarize high-priority defense concerns, and establish guidelines for developing an integrated long-range plan for DoD.

Enhancing programmatic and technical input during resource allocation discussions: Improved program and technical input in allocating resources will be accomplished by ensuring that:

- The role of the Under Secretary of Defense for Acquisition (USD(A)) is enhanced through his active participation in all phases of the Planning, Programming, and Budgeting System (PPBS) and deliberations on major budget issues.
- The Under Secretary of Defense for Policy (USD(P)) serves as the Secretary's and the Deputy Secretary's primary advisor for the planning phase of PPBS and is a key participant in programming and budgeting decisions.

Reducing significantly the number of programs that overrun their budgets, are late, or are technically deficient: Several initiatives are directed at ensuring that programs meet schedule, cost, and performance requirements. First, the USD(A) will manage a more disciplined review process for major acquisition programs. The reviews, conducted by the Defense Acquisition Board (DAB), will make certain that every program is ready for more advanced stages of development before receiving approval to move to the next milestone phase. The reviews also will ensure that plans for advanced development stages are consistent with sound acquisition management.

Second, the Joint Requirements Oversight Council (JROC) will assume a broader role in support of DAB decisionmaking. A revised JROC charter provides for:

- Review of all warfighting deficiencies that could necessitate development of major systems prior to their consideration by the DAB;
- Review of the validity of identified mission needs and assignment of joint priorities for meeting those needs;
- Validation of performance goals and baselines prior to DAB review of major programs; and

- Selection of programs for recommendation to the USD(A) as candidates for joint development and production.

Third, the authority of program managers (PMs) will be strengthened by:

- Establishing unambiguous and abbreviated chains of command to the most senior decisionmakers;
- Establishing clear lines of responsibility and authority downward from the service acquisition executives (SAEs) through the program executive officers (PEOs) to the PMs; and
- Providing for PMs to report exclusively to their PEOs, thus streamlining the chain of command in acquisition matters and reducing reporting requirements.

Fourth, program stability will be enhanced by:

- Taking greater advantage of multiyear contracting; and
- Ensuring that successful PMs and PEOs enjoy sustained tenure, ideally to direct their programs through an entire milestone phase.

Fifth, the quality of the defense acquisition work force will be enhanced by the establishment of a dedicated corps of officers within each service who will make full-time careers as acquisition specialists. These plans will ensure:

- Selection of highly promising officers early in their careers;
- Timely specialization in acquisition, including the election of such career paths by officers with some significant operational experience;
- Assignment, other than in exceptional cases, to acquisition positions and related training once selected;
- Creation of attractive and equitable career paths, including designation of corps-eligible positions; and
- Assurance of promotion potential up to the highest flag grades.

The Department also will work with the Office of Personnel Management (OPM) to make DoD civilian career opportunities more competitive with those in the private sector. This will include supporting the Administration's proposed legislation allowing DoD and other agencies to pay for degree-related course work by civilian

employees in critical hard-to-fill areas. In addition, the Department is seeking prompt action by OPM on classification of DoD contracting officers as a professional personnel series. In the case of officers with the authority to award contracts of more than \$25,000, DoD will seek the adoption of classification standards that require an appropriate combination of relevant work experience and education.

Sixth, to increase the prototyping and testing of major procurement items, the USD(A) will develop and apply policies that support sound decisions on major programs through full-scale engineering development. These policies will dictate schedules and management plans for major programs that:

- Support the building and testing of system and critical subsystem prototypes, the use of systems engineering, and the validation of manufacturing processes as early as possible; and
- Provide for early testing and evaluation of prototype hardware to demonstrate their design concepts, performance, and suitability in realistic operating environments.

Reducing overhead costs while maintaining military strength: The Department is instituting programs that focus on continuously improving the quality and effectiveness of defense processes, products, and services. This effort includes eliminating management layers and research, development, and procurement-related functions that do not add clear value. It also provides incentives to managers and employees to use their creativity to improve performance and consistency, and it ends reliance on review and inspection as a primary means of ensuring quality. The goal is an overall improvement in the efficiency of DoD's acquisition management, logistics, distribution, and related maintenance activities.

Greater efficiency and cost reductions also will be accomplished through other measures. There will be strong management oversight of the base closure and realignment process. Also, DoD contract administration services (CAS) will be consolidated to:

- Streamline CAS organizations;
- Promote uniform interpretation of regulations;
- Improve the implementation of DoD procurement policy; and

- Upgrade the quality of the CAS work force while reducing payroll costs.

In addition, the Department is developing a corporate information management program to improve the standardization, quality, and consistency of data from DoD's multiple management information systems. The goal is to reduce unnecessary redundancy and to realize savings in both the \$9 billion spent annually on information technology and in the DoD business areas these systems support.

Establishing and enforcing high ethical standards of conduct in DoD and the defense industry: The Department of Defense will not tolerate illegal or unethical behavior. DoD encourages contractor self-governance and the establishment of appropriate corporate codes of conduct.

DoD has established an Ethics Council consisting of the USD(A) and the secretaries of the military departments, advised by the DoD Inspector General and General Counsel. The council is charged with developing ethics programs for the acquisition work force and improving existing compliance programs. It also will develop broader programs to enhance awareness and understanding of ethical issues — how they arise day to day, how existing standards may or may not apply, and what responsibilities DoD managers have as ethical leaders.

Reducing micromanagement and simplifying the laws and regulations governing DoD: A task force headed by the Under Secretary of Defense for Acquisition is conducting a zero-based review of regulatory and other guidance pertaining to acquisition, procurement, logistics, and related activities, beginning with DoD-level directives and proceeding down through the military departments and their components. The task force is governed by the strong presumption that regulations should not be retained or duplicated unless there is a clear and convincing need to do so. Special scrutiny is being given to measures that limit judgment, creativity, or initiative or that inhibit the implementation of sound procurement policies.

Another task force is reviewing existing programs and initiatives for advocacy of special, single-purpose requirements. The task force will

be charged with developing a plan to eliminate as many such programs as possible.

An important simplification initiative is "acquisition management by exception" — that is, intervention by senior management only at major acquisition milestones, at a program manager's request, or in the event a program encounters substantial problems in meeting its baseline. In the 1987 Defense Authorization Act, the Congress gave DoD authority to designate a limited number of acquisition initiatives as "Defense Enterprise Programs" in order to test the viability of this approach. The Department plans to utilize it.

Reversing the decline in the industrial base: DoD is committed to policies and programs that will enhance America's competitive strength and bolster our industrial base. For example, the Department intends, when appropriate, to establish contractual relations that give its suppliers financial incentives to explore technologies that could improve weapons performance and reduce life-cycle costs. In addition to promoting the use of multi-year contracts, the USD(A) will limit strictly the use of cost-sharing contracts for systems development and the use of fixed-price contracts for high-risk development efforts.

The USD(A) will also help promote the long-term, efficient producibility of systems. With the Vice Chairman of the Joint Chiefs of Staff, he will seek to expand the use of broad performance specifications in weapons design. He will also seek to ensure that specifications are locked in prior to high-rate production and that upgrades or modifications are made on a block, not a piecemeal, basis.

Improving relations among Congress, DoD, and the defense industry: The Department will continue its voluntary disclosure program, under which DoD contractors are encouraged to demonstrate their commitment to business integrity and honesty by disclosing evidence of potential civil or criminal fraud in their contracts with DoD. To reduce the possibility of inconsistent treatment of such

disclosures, the Department will work with appropriate agencies to develop standard criteria for program participation. In addition, to create clear incentives for corporate management, voluntary disclosure of potential violations will remain an important consideration, consistent with applicable law, in the determination of the sanctions DoD might apply.

DoD also will continue to encourage industry participation in its Contractor Risk Assessment Guide (CRAG) program. This program promises more efficient use of DoD audit capabilities by placing greater reliance on contractors to establish effective systems of internal controls. In conjunction with the CRAG program, the Defense Contract Audit Agency (DCAA) has encouraged broader DoD-industry communications on annual government audit plans in order to highlight opportunities for improved contractor internal controls.

Over the long term, DoD will seek to develop a procurement system that rewards contractors for demonstrating their commitment to effective self-governance. A supplier's proven reputation for integrity is one important standard that can be applied in making contract decisions. As in the commercial marketplace, the totality of a firm's performance should be considered in order to ensure that the government receives the best value from the suppliers with whom it does business.

The Department will continue to work with the Congress to fashion a more effective and efficient budget and acquisition process. There are many recommendations for improvement that the Department will be able to institute on its own authority, but several key initiatives aimed at streamlining these processes will require the close cooperation of the Congress and legislative reforms. If DoD is to implement quality and cost-reduction programs successfully, the Congress must provide key legislative initiatives in the form of new laws and repeal or modify others so as to streamline congressional oversight and improve the budgetary process.

PERSONNEL

Our foremost budget priority is to preserve the high quality of the personnel who constitute this nation's most critical defense resource. If we are to recruit and retain highly educated, motivated, and dedicated men and women, service in defense of the nation's security must be regarded as the honorable and attractive profession that it is. Such service must reflect the highest ideals of the nation, it must adequately compensate those serving for the sacrifices demanded of them, and it must provide a desirable standard of living for them.

Recruiting, training, and operational experience data indicate that the quality of our personnel has never been higher. The maintenance of this standard of excellence demands a commitment to recruiting, retention, and quality-of-life programs for all our personnel. Demographic, economic, and technological trends challenge our ability to meet that commitment. The Department's success will, therefore, require insightful management policies and sufficient levels of funding.

Total Force Management

The work force required to support the nation's defense is determined by a complex system that translates national security requirements into the various types and numbers of personnel that constitute the total force. The force structure reflects the U.S. forward-defense strategy, under which units are forward deployed and supplemented by forces based in the continental United States (CONUS). Total force planning must consider the categories of personnel (active and reserve component, DoD civilian, private contractor, and host-nation support) that might be used in various contingencies. The process begins with an evaluation of the number and type of threats confronting the United States, and the strategies, capabilities, and risks associated with countering them. It considers the United States' ability to react to contingencies under both mobilized and nonmobilized conditions, as well as allied capabilities. Fiscal constraints also influence the types and quantities of units, equipment, and personnel that can be maintained in the force structure. Total force composition is reflected in Chart 5.

Significant portions of the Department's military and civilian work forces remain regulated by congressionally imposed ceilings. This prevents

maximum efficiency and effectiveness in total force management. For example, current congressional restrictions hamper the Department's ability to pursue hiring policies that would enable it to take advantage of greatly needed capabilities of spouses of service members assigned outside the continental United States. Also, limits on the size of defense agencies and headquarters impede optimum distribution of resources within and among these organizations.

The Department of Defense needs the flexibility to make adjustments in the personnel management systems governed by existing legislation. Some amendments will be necessary if the Department is to continue to manage military personnel effectively.

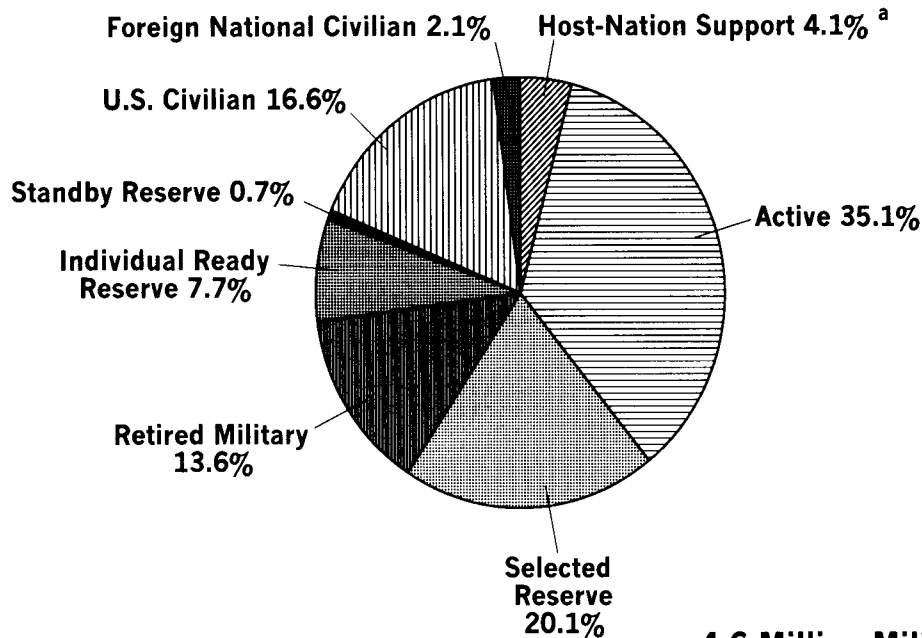
Recruiting

As the sophistication and complexity of military equipment has increased, so has the need for highly competent and motivated personnel to acquire, operate, and maintain it. During the 1980s, the Department succeeded in attracting highly educated military recruits for both the active and reserve components. Between FY 1980 and FY 1985, the proportion of recruits who were high school graduates jumped from 68 to 93 percent, and the share has remained above the 90 percent level since FY 1984. In comparison, only 75 percent of the youths in the civilian population have graduated from high school. Enlistment test scores among recruits also have risen since 1980. This improvement in recruit quality has continued despite a 15 percent reduction in the 18- to 24-year-old population since 1979. Our success, in large part, is attributable to sound incentive programs, including the funding of future education. These recruitment numbers are reflected in Table 4.

Difficult challenges are on the horizon, however. The declining youth population, a strong economy in which the military must compete with the private sector for potential recruits, the complexity of new weapon systems, and competition for federal dollars are some of the realities facing manpower planners. The Department has worked hard to reduce the impact of these concerns. For example, weapon and support systems are being designed to minimize both the number and skill level of people needed to operate and support them. Training

Composition of the Total Force

Chart 5

^a Host-nation support includes military and civilian.**4.6 Million Military Personnel
1.1 Million Civilian Personnel**

programs and devices (including computer-based simulators) also are being developed systematically during the acquisition process. The average period of active service has been increased through longer initial enlistment contracts and retention of skilled specialists both to gain a greater return on training investments and to reduce future recruiting needs. Research is under way to quantify changing trends in ethnic, gender, and skill levels; to determine how to link job performance requirements with changing recruit characteristics; and to identify ways in which recruiting and training programs might be modified to reflect these changes. These programs are designed to enable the Department to do more with reduced manpower resources. While the size of military forces will be reduced, the importance of recruiting and retaining high-quality personnel for positions that remain will be even more critical, as each individual comprises a greater share of unit capability. Consequently, adequate recruiting and retention resources will remain an important budget priority.

The growing scarcity of technical personnel is a specific recruiting concern. Numerous studies have projected a decline in the number of people seeking college degrees in fields in high demand in the Department — especially science and engineering. This is of special concern since, as pointed out by the Packard Commission and the July 1989 Defense Management Report, technical skills will be increasingly important in the drive to improve the quality and reduce the cost of U.S. weapon systems.

Technicians constitute a major portion of the Department's acquisition work force. They work in jobs related to research and development, procurement, logistics, distribution, and equipment maintenance. Their collective efforts are crucial to the U.S. defense program, and much depends upon how efficiently and effectively they perform their duties. As the Packard Commission pointed out: ". . . [C]ompared to its industry counterparts, this work force is undertrained, underpaid, and

Quality and Numbers of Enlisted Active-Duty Accessions^a (Numbers In Thousands)

Table 4

	Quality Indices			Accessions	
	Percent High School Graduates	Percent Average or Above Aptitude	FY 1989	FY 1990 ^b Planned	FY 1991 ^b Planned
Army	90	93	119.9	97.4	95.5
Navy	91	91	94.3	88.4	85.9
Marine Corps	95	99+	34.2	34.7	36.0
Air Force	99	99+	43.8	36.4	36.4
Total DoD	92	94	292.2	256.9	253.8

^a Includes prior service and nonprior service accessions.

^b Estimates as of January 1990.

inexperienced. Whatever other changes may be made, it is vitally important to enhance the quality of the defense acquisition work force — both by attracting qualified new personnel and by improving the training and motivation of current personnel.” A major focus of the Defense Management Report process has been identifying and implementing steps to accomplish the commission’s broad objectives.

On the civilian side, the Department suffers from the outdated and ineffective civil service system mandated by statute. The four aspects of the current system that most seriously hurt DoD competitiveness are:

- Excessively regulated and time-consuming hiring procedures;
- Rigid and often inadequate compensation standards;
- A cumbersome job classification system; and
- A performance appraisal system that does not adequately tie pay to performance.

Eight years ago, the Navy instituted the China Lake Personnel Demonstration Project to address these areas of concern. The project proved the viability of a less rigid personnel management system and demonstrated the clear advantages such a system could offer to DoD employees and managers alike, including notable improvements in working

environments, professional rewards, recruitment, and retention. Its success has been due to several distinct features:

- A market-sensitive hiring system that allows the government to compete more effectively for high-quality personnel in hard-to-fill jobs;
- A performance-oriented compensation system that links pay to performance to an extent not possible under the existing civil service system;
- A personnel system that greatly reduces the administrative effort and costs associated with federal personnel management; and
- An administrative system that gives line managers greater responsibility for personnel functions.

DoD also seeks to strengthen further the professionalism of its civilian procurement work force. Specifically, it is striving to make its employees’ capabilities and career opportunities more competitive with those of their private-sector counterparts.

On the military side, the secretaries of the military departments, working with the service chiefs, have developed plans to establish a dedicated corps of officers in each service who will pursue full-time careers as acquisition specialists. The plans include specialized educational requirements and the

**Selected Reserve Enlistments
(Numbers In Thousands)**

Table 5

	FY 1989 Objectives	FY 1989 Achieved	FY 1990 Objectives	FY 1991 Objectives
Army National Guard	77.8	71.1	77.1	77.2
Army Reserve	78.1	75.4	76.4	75.0
Naval Reserve	36.8	30.2	33.6	33.6
Marine Corps Reserve	12.6	12.0	13.2	13.2
Air National Guard	11.2	11.6	12.4	11.1
Air Force Reserve	14.7	11.6	14.0	13.5
Total	231.2	211.9	226.7	223.6

provision of training opportunities for acquisition corps officers throughout their careers.

Reserve Forces

The 1.6 million men and women who serve in the reserve forces of the United States are more important to our national security interests today than reserves have been at any time in the nation's peacetime history. As we enter the decade of the 1990s, budgetary constraints and rapidly changing political developments around the world make it imperative that we continue the successful integration of reserve and active forces to carry out U.S. security objectives.

By any reasonable standard, the general capabilities of National Guard and reserve units have improved substantially in the last decade. There have been several contributing factors. First, the quality of the personnel who serve in the reserve forces is at an all-time high. Last year, 92 percent of the enlisted accessions into the National Guard and reserves were high school graduates, and 95 percent scored "average" or better on the Armed Forces Qualification Test. Second, the training of each National Guard and reserve unit has been tied to the wartime mission of the unit, and the units have been held to the same performance standards and readiness criteria as active force units. Developments in training technology, meaningful overseas training opportunities, other training initiatives that maximize the limited time available to reservists to train, and the high degree of professionalism among reserve unit leaders all have contributed to the improved readiness condition of most reserve units. Third, increased appropriations in the 1980s and policy initiatives by the

Department of Defense have permitted the distribution to reserve units of substantial amounts of modern equipment.

As potential threats to the United States change, National Guard and reserve units are likely to become more important. Early-deploying reserve units will continue to offer particularly valuable capabilities. For example, the law permits the President to call up to 200,000 members of the Selected Reserve to active duty without a declaration of national emergency. In a period of limited resources, the challenge will be to ensure that National Guard and reserve units are given adequate resources to perform their increasing responsibilities. This translates into requirements not only for equipment, but also for full-time support personnel (Table 6), training, and other needs.

Quality-of-Life Programs

Although compensation is critical to retention, many service members choose to remain in the military in part due to the nonsalary benefits it provides. These "quality-of-life" factors have become a key retention tool in the all-volunteer force.

The Department of Defense fully supports morale, welfare, and recreation (MWR) programs, education programs for military dependents, and family support services. MWR programs are a major contributor to community life on military installations throughout the world, providing a wide range of social, recreational, and personal development activities to approximately eight million patrons. As the Department searches for ways to conduct MWR programs with

Full-Time Support Personnel^a
(End Strength In Thousands)

Table 6

	Actual		Planned	
	FY 1980	FY 1989	FY 1990	FY 1991
Army National Guard	33.0	55.5	55.6	56.1
Army Reserve	17.0	27.7	27.9	28.4
Naval Reserve	20.8	32.0	33.1	33.9
Marine Corps Reserve	4.8	7.7	7.6	7.7
Air National Guard	25.8	34.2	34.8	34.7
Air Force Reserve	11.9	15.3	15.9	15.7
Total	113.3	172.4	174.9	176.5
Percent of Selected Reserve	13.1	14.7	14.9	14.9

^a Includes active guard and reserve, military technicians, active component, and civil service personnel.

constrained resources, the challenge is to make revenue-generating activities more reliant on their own incomes.

Dependent education is another important area in which we must maximize the benefits obtained from constrained resources. Students in DoD schools have scored above the national norm on basic skill tests and at or above the national average on college entrance exams. During the past eight years, enrollment in the Department's overseas schools for dependents has grown by nearly 20 percent, challenging our ability to maintain these high standards.

Along with MWR and dependent education, family support services are essential to a balanced and meaningful quality-of-life program. Examples include family advocacy programs, which address family violence; relocation programs, which ease the stress and strain of permanent changes of station on service families; and child care.

One of the Department's greatest family-support challenges is to meet the needs of its military and civilian personnel for high-quality child care at affordable prices. DoD has made progress in this program: some 1,600 new family day-care homes, providing care for over 12,000 more children, were certified between FY 1987 and FY 1988. Additionally, as new construction projects were completed and services expanded, 5,000 more children

were accommodated in child development centers. Private financing is being pursued as a means of increasing capacity at these facilities, and DoD is working to raise child care standards. The Department's primary needs now are to replace inadequate, unsafe facilities and to build new ones to help meet substantial needs.

Readiness

Readiness for combat is a primary objective of peacetime training operations. Our forces must be manned, equipped, and trained to fight whenever they are called on to do so. Unless they are ready for combat, their sophisticated weaponry is of little value and deterrence becomes a hollow concept.

The readiness of a force to carry out its assigned missions is more than the sum total of the skills of its individual members. Readiness represents the culmination of the training of crews and units on their designated equipment and with their assigned weapon systems. The constant honing of teamwork skills, from carrier battle group operations to tank platoon maneuvers, is the key to readiness.

Operating tempos — ground vehicle miles, ship steaming days, and aircraft flying hours — are one of the yardsticks used to measure the training opportunities available to military personnel. Although increased operating tempos do not translate automatically into increased readiness, there is no doubt that without adequate levels of operation,

readiness deteriorates. The Department of Defense will maintain operating tempos at the levels needed to ensure ready forces. These numbers are reflected in Table 7.

To overcome certain personnel deficiencies in readiness for mobilization, the Department has taken steps to update its data bases, reorganize responsibilities for the land defense of the continental United States, improve mobilization exercises and include in them civilian mobilization, improve management of the Individual Ready Reserve, increase familiarity with plans for evacuating non-combatants from combat zones, enhance planning for the use of military retirees in wartime, and improve international mobilization planning capabilities with U.S. allies.

Goldwater-Nichols DoD Reorganization Act

Title IV of the Goldwater-Nichols Department

of Defense Reorganization Act of 1986 mandated extensive improvements in the area of joint officer personnel management.

During the past year, the Department has made significant progress in implementing Title IV. It continues to devote considerable effort to the identification of appropriate policies and procedures for effecting the changes called for by the act.

These efforts focus on eight areas:

- Service policy and procedures for selecting joint specialty officers and other officers serving in joint duty assignments;
- Revised definitions for dual-hat and cross-Department joint duty assignments;
- Criteria for designating jointly manned activities;

Operating Tempos

Table 7

	FY 1989	FY 1990 ^a	FY 1991 ^a
Flying Hours/Crew/Month			
Army Combat Forces	14.6	15.0	14.5
Army Reserve	8.0	8.0	8.0
Army National Guard	9.0	9.0	9.0
Navy/Marine TacAir/ASW	25.0	25.0	25.0
USNR/MCR TacAir/ASW	11.0	11.0	11.0
Air Force TacAir	19.3	19.5	19.5
ANG TacAir	11.0	11.0	11.0
AFR TacAir	11.0	11.0	11.0
Air Force Airlift	31.0	30.1	30.2
ANG Airlift	15.0	15.0	15.0
AFR Airlift	15.0	15.0	15.0
Air Force Strategic	18.2	17.7	17.6
ANG Strategic	16.0	16.0	16.0
AFR Strategic	16.0	16.0	16.0
Navy Steaming Days/Quarter			
Deployed Fleets	52.5	50.5	50.5
Non-deployed Fleets	27.5	29.0	29.0
USNR Non-deployed Fleets	21.0	21.0	21.0
Army Ground Miles/Year			
Army Reserve	820	800	800
Army National Guard	200	200	200
Army National Guard	288	288	288

^a Requested

- Policies for awarding credit for joint tour completion;
- Procedures for securing early release from joint assignments;
- Policies addressing the required fill rates for joint duty billets;
- Promulgation of tour lengths of three years for field-grade officers and two years for general and flag officers; and
- Policies and procedures for updating the Joint Duty Assignment List.

A list containing 8,623 joint duty assignments has been published; some 1,024 billets on the list are designated as “critical assignments,” to be filled by officers who have been awarded the joint specialty. To assist in managing the list, and to facilitate implementation of the career oversight and reporting requirements entailed in the Goldwater-Nichols Act, the Department has developed a Joint Duty Assignment Management Information System. Finally, it has conducted extensive reviews of joint education opportunities.

A detailed summary of DoD’s progress in implementing the provisions of Title IV of the Goldwater-Nichols Act is provided in Appendix D.

Medical Services and Readiness

The Military Health Services System (MHSS) has a dual mission: to maintain medical wartime readiness and to provide a comprehensive peacetime health benefit to the United States’ nine million active-duty service personnel, their dependents, retirees, and survivors. The Administration places high priority on improving the Department’s performance of this dual health mission.

The peacetime health mission consists of two parts: a “direct care” side, which provides health care to beneficiaries in military medical facilities; and the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS), a cost-sharing system for care delivered by civilian health providers to eligible beneficiaries.

The direct care system comprises more than 800 medical and dental treatment facilities, including 168 hospitals, at military installations around the world. These are staffed by a force of health professionals, including almost 45,000 active-duty military personnel. DoD’s military treatment facilities (MTFs) handle one million admissions and 50 million outpatient visits a year, making DoD the world’s largest health care delivery system. CHAMPUS currently pays for about 30 percent of the care provided to DoD beneficiaries, also making DoD one of the largest buyers of health care in the civilian market.

The issues of health care quality, cost, and access pose great challenges to the Department of Defense. The cost of DoD health operations is growing by about 10 percent annually, while the overall DoD budget is declining in real terms.

Several issues require special attention:

- More care for the military community is moving from military treatment facilities to the higher-cost civilian sector (CHAMPUS), due in part to personnel shortages and management practices ill-suited to maximizing effective use of local resources and the potential of individual facilities.
- In general, it costs more for DoD to purchase care in the civilian sector than to provide it in military facilities, and the costs have been less controllable in the private sector than in the military medical structure. The Department needs to evaluate the combination of services that will enable it to maximize the value obtained from health care expenditures.
- Medical readiness, a critical element of U.S. warfighting capability and the primary mission of the military medical services, needs significant improvement. While progress has been achieved through special bonuses to health professionals with skills needed in wartime and through the purchase of deployable medical equipment, much remains to be done. Special emphasis must be given to the recruitment, training, and retention of key medical personnel and to adequate health care planning.

INDUSTRIAL BASE

A robust industrial base is essential to sustaining the might of the nation's defenses. The United States is strong militarily largely because it has had the resources, sophisticated manufacturing capability, and highly educated citizenry that it can call upon in times of emergency.

There are several key indicators, however, that provide evidence that the industrial base may be in trouble. The United States' share of the world machine-tool market, for example, is now less than half the 1980 level. During the past 17 years, U.S. firms have lost two-thirds of the domestic market for machining centers. A look at aggregate economic indicators also shows that the United States is losing ground when compared with other industrialized countries. For example, during the first half of the 1980s, the U.S. rate of growth in productivity was 3.5 percent, compared to almost 6.5 percent for Japan. In addition, the U.S. share of worldwide trade in manufactured goods has declined, while the sale of foreign goods in the United States has increased.

Furthermore, a series of major studies since the Packard Commission report have documented an alarming erosion in the U.S. defense industrial base. The following items were identified as reasons for concern:

- A decline in the overall number of defense suppliers;
- Accelerating penetration of foreign goods into U.S. markets and a growing dependency on foreign sources for vital components and subassemblies; and
- Decreasing returns on fixed assets, declining capital investments, and lagging productivity in key defense sectors.

If these trends continue unabated, they will jeopardize U.S. security.

At the heart of the problem is America's competitive strength. This is a highly complex issue, involving many factors beyond the reach or responsibility of any Defense Department policy or program. Exchange rates, tax policy, the cost of capital, labor-management relations, and industry's willingness to plan for long-term profitable growth instead of short-term profits all affect the

competitiveness of American-made products. In addition, the trade policies of other countries can undermine domestic industries if they aim at gaining a market share in the United States by dumping goods at unreasonably low prices. The Department of Defense will cooperate with the government agencies that have responsibility for economic matters in the effort to improve America's economic strength.

To help U.S. manufacturers regain their competitive edge, DoD has outlined a strategy with six major strategic thrusts:

- Forging the right relationship with industry;
- Improving the acquisition system;
- Ensuring that industrial base issues important to our defense benefit from the full spectrum of potential policy remedies, when appropriate;
- Establishing defense industrial strategic plans that support military strategic plans;
- Developing manufacturing capabilities concurrently with development of weapon systems; and
- Laying the foundation now for the technical skill base required for tomorrow's defense needs.

With regard to defense production, the Department of Defense has two programs for improving productivity. One is the Manufacturing Technology (or "ManTech") program. Its primary goal is to improve the productivity and responsiveness of the defense industrial base by funding largely private-sector research efforts to develop advanced manufacturing technologies.

The Industrial Modernization Incentives Program (IMIP) is the other vehicle used by DoD to help defense contractors boost productivity. Unlike ManTech, which focuses on the development of new manufacturing processes, IMIP concentrates on modernization efforts that improve the productivity of existing facilities.

The Department has undertaken a variety of initiatives that are focusing greater attention on improving quality and productivity. It is working with its contractors to build a productive partnership to maintain the strength of the armed forces. Correcting the erosion of the U.S. industrial base will require the sustained attention of both DoD and private industry. The men and women in the Department depend on U.S. industry for the

equipment they need to perform their missions. Government and industry share the responsibility to provide it.

The Department of Defense maintains plans to mobilize in incremental steps to permit the President and the Secretary of Defense to respond to

early warning in a deliberate and timely manner and proceed with modulated responses to deter, mitigate, or recover from a crisis. This permits military forces and the defense industrial base to implement preplanned, graduated mobilization steps that are responsive to a wide range of national security threats and warning indicators.

ENVIRONMENT

Environmental issues are the subject of intense concern among leaders throughout our society and the world. The Administration is committed to protecting the environment, and the Department of Defense not only promotes, but seeks to be a leader in, environmental compliance and protection. Consistent with that aim, DoD is working to incorporate an environmental ethic into all defense activities.

Two primary objectives underlie this effort: protecting long-term access to the air, land, and water needed to sustain mission capability, and enhancing the quality of life and the environment. Toward those ends, the Department of Defense has established six specific goals:

- Performing environmental impact analyses and conducting environmental planning early in the acquisition process;
- Identifying resources to meet environmental requirements using established programming and budgeting procedures;
- Maintaining internal communication programs that ensure DoD leaders and managers are aware of environmental requirements and external programs that provide communities information on DoD's environmental activities and compliance efforts;
- Minimizing pollutants from DoD installations and operations worldwide;
- Maintaining feedback systems that ensure each organizational level has sufficient information to comply with DoD environmental requirements; and

- Implementing management procedures that ensure the Department has the right people at the right place with the right training.

These goals will not be easy to achieve. Success will depend primarily on a multifaceted effort focusing on seven critical elements: cultural change, compliance, people, budget, training, communications/public affairs, and improving relations with regulatory agencies.

Major actions already under way include an extensive audit of environmental compliance. Some 900 installations have been surveyed to date, and more than 8,000 potentially contaminated sites have been identified. Another 7,000 sites on formerly used DoD properties are being reviewed. The Department seeks to correct all of these problems, but those that pose the greatest risk to public health and the environment must receive priority for cleanup. The Department also is working to reduce the use of hazardous materials and avoid the generation of hazardous waste, as part of an ongoing effort to achieve significant reductions in hazardous waste generation by 1992. Continued emphasis in all other areas, such as air, water, and toxic substances, will enhance our total posture and reaffirm our resolve to serve as a model of compliance within the regulated community.

Environmental protection is an important part of the defense mission. As steward of nearly 25 million acres of public lands and billions of dollars worth of facilities, the Department of Defense has a responsibility to conserve and restore the natural resources entrusted to it.

Part IV
Defense Components

DEFENSE COMPONENTS INTRODUCTION

The highest priority of the Department of Defense is deterrence of war and the maintenance of U.S. freedom. Should deterrence fail, United States military forces must be structured, deployed, and ready to provide the President in time of crisis a variety of flexible response options which enable control of escalation and termination of conflict on favorable terms. These forces must provide capabilities across the entire spectrum of challenges to national security — from global war to low-intensity conflict.

Readiness, modernization, and balance are three vital concerns which the Department addressed in all the defense component programs. Readiness remains a high priority because ready forces are a prerequisite to deterrence. Critical to readiness is the well-being of our uniformed personnel. United States forces must be highly trained, fully equipped, and well-led if they are to act quickly and effectively in performing their missions. Recent events in Panama, the U.S. Virgin Islands, and the Andean countries underscore the critical role that ready forces play. All of our forces — forward deployed and CONUS based, active and reserve —

must be prepared to execute their missions in the required time.

Modernization is a continuous process that involves not just equipment but constant reassessments of and adjustments in doctrine, force structure, and training. In upgrading our equipment, we seek to improve the combat effectiveness of our forces, within budget constraints, by providing modern equipment to the units who would be first to fight. Our programs are designed to increase the lethality and survivability of our forces, while limiting the disruptions in training and readiness that often accompany the introduction of new equipment. Currently, the Department has important initiatives in progress that are essential to the modernization of our forces — from weapon systems to command, control, communications, and intelligence (C³I) programs.

Finally, the Department has endeavored to achieve a balanced mix of active and reserve forces which helps hold down costs while maintaining strength.

NUCLEAR FORCES AND STRATEGIC DEFENSE

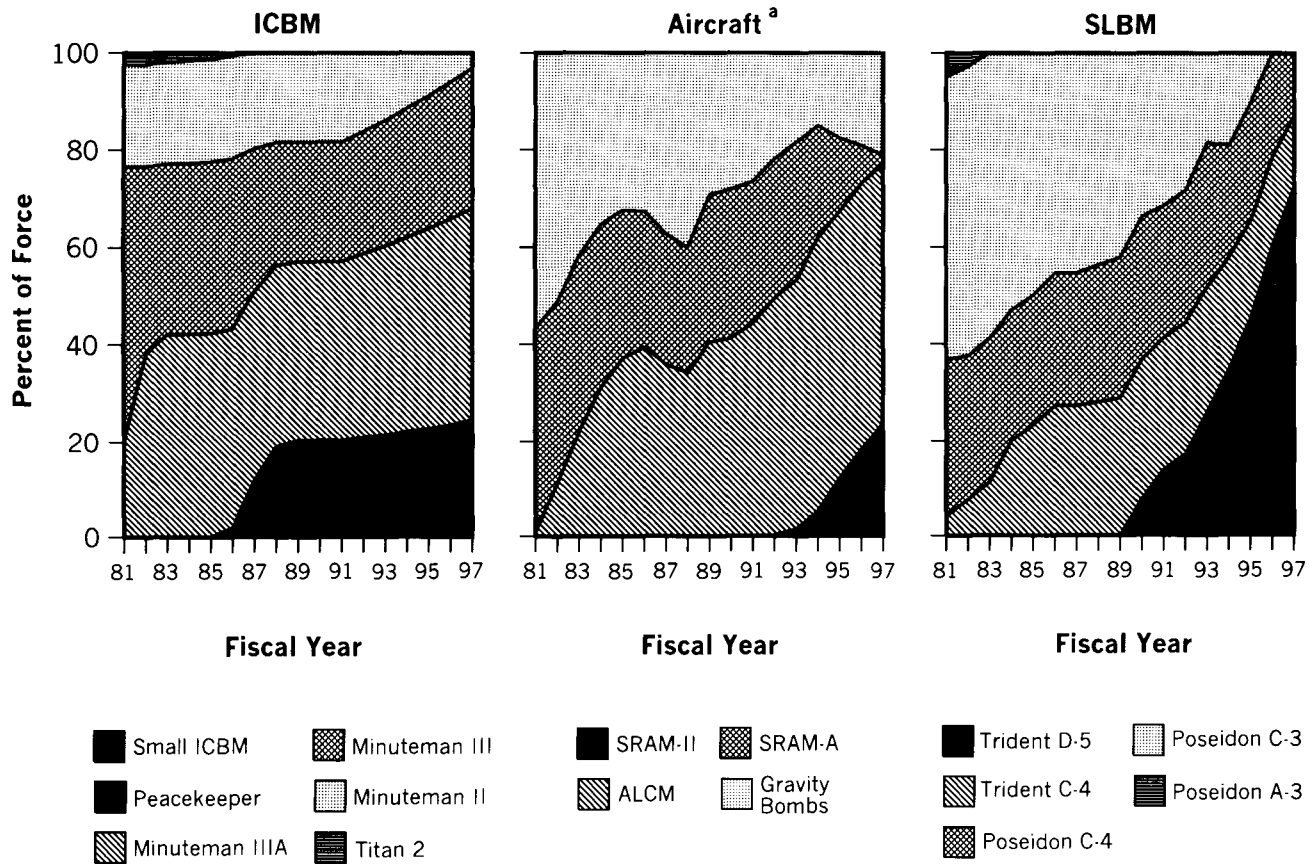
Nuclear Deterrence Policy

Nuclear weapons have played a crucial role in U.S. national strategy for more than 40 years, and they will continue to do so. In addition to deterring nuclear war, these systems contribute to deterrence of conventional aggression against the United States and its allies.

The United States maintains nuclear forces that are capable of retaliating effectively against the Soviet leadership's most valued assets. To perform their mission, U.S. nuclear forces must not only be able to survive an initial attack; they must have sufficient accuracy and yield to deliver an effective retaliatory response, and they must have effective modes of delivery and effective systems for command and control.

Strategic Offensive Force Structure
(Inventory of Warheads)

Chart 6



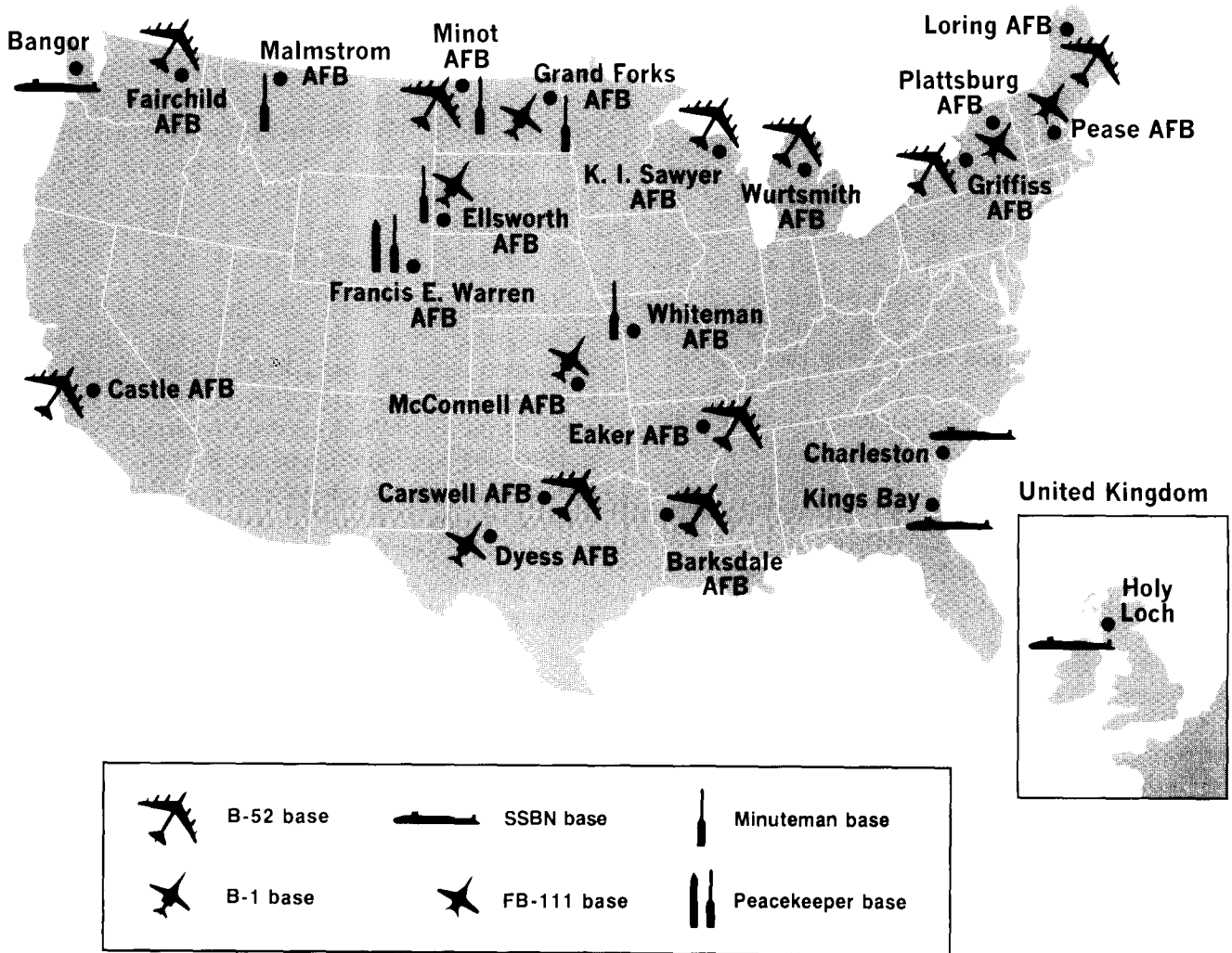
^a Represents weapons which could be loaded on all operational bombers. Does not represent the loading that would be used under a START agreement.

The Soviet strategic nuclear force posture remains strong. The Soviet Union is expected to continue pursuing a vigorous modernization program even after the U.S. and U.S.S.R. conclude a strategic arms reduction treaty. Today, the Soviet Union is fielding simultaneously two new intercontinental ballistic missiles (ICBMs) and a modernized variant of the SS-18, two strategic submarines and their associated submarine-launched ballistic missiles (SLBMs), and two new bombers. The Soviets also have pursued aggressively a decade-long program of nonstrategic nuclear

modernization that includes missiles and artillery systems, as well as sea-based systems. The Soviet leadership continues to emphasize survivability and endurance in a nuclear war, as evidenced by the ongoing construction of deep underground command centers. The modernization and expansion of Soviet air defense and ABM systems also continue. To meet the strategic challenge posed by these modernized Soviet nuclear forces, the United States must continue to maintain a robust and credible U.S. nuclear deterrent.

Locations of U.S. Strategic Offensive Forces

Chart 7



The Requirements of Flexible Response

To keep the flexible response strategy truly effective, the President must have a wide range of retaliatory options, including nuclear ones. To help deter both conventional and limited nuclear attack, and to fulfill alliance commitments, the United States must have a range of militarily effective, but nevertheless discrete and recognizable, nuclear responses. These response options, which involve both strategic and nonstrategic forces, give us the ability to impose significant penalties on an aggressor and limit his ability to continue an attack. At the same time, the intent of these options is fundamentally political: to convince the enemy leadership that it has gravely miscalculated our resolve, that we possess substantial military capability to inflict further harm, and that it is in the enemy's interest to halt its aggression and withdraw.

The Strategic Modernization Program

The Land-Based Missile Force.

The Administration's approach to modernizing the U.S. ICBM force calls for a two-phased effort. For the near term, the Department seeks to rebase 50 silo-based Peacekeeper missiles on railroad cars. The Peacekeeper is a proven asset which, due to its high accuracy, can hold at risk nearly all of the hardest Soviet targets. By removing these missiles from their silos and placing them on specially configured railroad cars, the United States can, in the shortest possible time and for the least amount of money, improve the survivability of its ICBM force. The survivability and flexibility created by rail basing will greatly strengthen deterrence by complicating the Soviets' ability to attack these missiles, thereby reducing their confidence in being able to strike our forces successfully.

The United States also is proceeding with research and development of the new small ICBM (SICBM). This lightweight, road-mobile, single-weapon missile has the ability to move rapidly in response to attack warning. Its high degree of resistance to the effects of even a nearby nuclear explosion makes it a highly survivable weapon.

The Strategic Submarine Force.

The modernization of our strategic submarine force is replacing aging boats with more capable vessels and strengthening the overall contribution of the force to nuclear deterrence.

The U.S. sea-based strategic nuclear deterrent currently consists of 11 Lafayette-class fleet ballistic missile submarines (SSBNs) carrying the Poseidon C-3 missile, 12 Lafayette-class SSBNs carrying the Trident I C-4 missile, and eight Ohio-class SSBNs carrying the Trident I missile. Additionally, one Ohio-class SSBN will soon be armed with the new Trident II D-5 missile. To maintain a sufficient number of SSBNs in active service as aging boats retire, the Department continues to build Ohio-class SSBNs. Nine of these boats are already operational, and eight others are in various stages of construction.

The Trident II D-5 SLBM will represent a highly significant addition to our deterrent arsenal. It combines the survivability and endurance qualities traditionally associated with the SLBM force with the capability to retaliate quickly against nearly all of the hardest Soviet targets. The Trident II enhances deterrence by diminishing the value to the Soviets of seeking to attack our ICBMs and bombers, since the United States would retain the ability with SLBMs to strike the spectrum of Soviet targets effectively, even under the worst of circumstances.

The Strategic Bomber Force.

The revolutionary B-2 bomber successfully completed several test flights in 1989. Since the B-2 is a manned aircraft, it is a flexible weapon that can be recalled or retargeted after launch. It also has direct tactical applications in conventional war scenarios. The combination of the B-2, the B-1B and cruise-missile-equipped B-52s forces the Soviet air defense system to confront both standoff and penetrating weapons from all directions.

Command and Control.

The vital Milstar satellite system will, among other things, provide survivable and endurable communications support for the President and Secretary of Defense in the event of a nuclear attack. The system is designed to support command and control functions against any level of jamming and during nuclear exchanges.

Nonstrategic Nuclear Modernization Program

As noted at the May 1989 NATO summit, nonstrategic nuclear forces provide an essential political and military link between conventional and strategic nuclear forces and between the

European and North American members of the alliance. They ensure that there are no circumstances under which a potential aggressor might discount the prospect of nuclear retaliation in response to an attack; thus, they provide an essential contribution to deterrence.

The NATO heads of state also reaffirmed at the summit the importance of a deterrence strategy based on an appropriate mix of adequate, effective, and modern conventional and nuclear forces. They further stated that land-, sea-, and air-based systems, including ground-based missiles, are needed in Europe now and for the foreseeable future.

Consequently, to ensure that we have a credible nonstrategic nuclear deterrent force into the 21st century, the United States is continuing development of two new missile systems — the ground-launched Follow-On to Lance (FOTL) and the Short-Range Attack Missile-Tactical (SRAM-T). The FOTL, which is intended to replace the aging Lance system, will possess greater range, mission flexibility, and survivability than its predecessor, while permitting much more efficient utilization of personnel. The SRAM-T, a stand-off weapon, will extend the effective range of U.S. and NATO dual-capable aircraft, permitting them to attack high-value targets without being exposed to terminal air defenses. Deployment of the FOTL and SRAM-T would contribute significantly to maintaining a credible and effective nuclear deterrent.

The United States also is continuing to modernize its other nonstrategic nuclear forces, including artillery-fired atomic projectiles, dual-capable aircraft, nuclear gravity bombs, and the nuclear version of the Tomahawk sea-launched cruise missile.

Strategic Defense

Strategic defenses encompass those systems that protect U.S. territory from nuclear attack or coercion. At present, these systems serve primarily a warning function. The Defense Support Program, the Ballistic Missile Early Warning System (BMEWS), PAVE PAWS radars, and the Nuclear Detonation Detection System would warn and assess the magnitude of an ICBM or SLBM attack. The North Warning System, the Over-the-Horizon Backscatter Radar network, and the Distant Early Warning Line would provide notice of a bomber attack. Ground-based deep-space surveillance

systems and space surveillance radars monitor U.S. and Soviet space assets. With the exception of a relatively small force of active and reserve air defense fighters, the United States has no operational means of defending against a strategic nuclear attack.

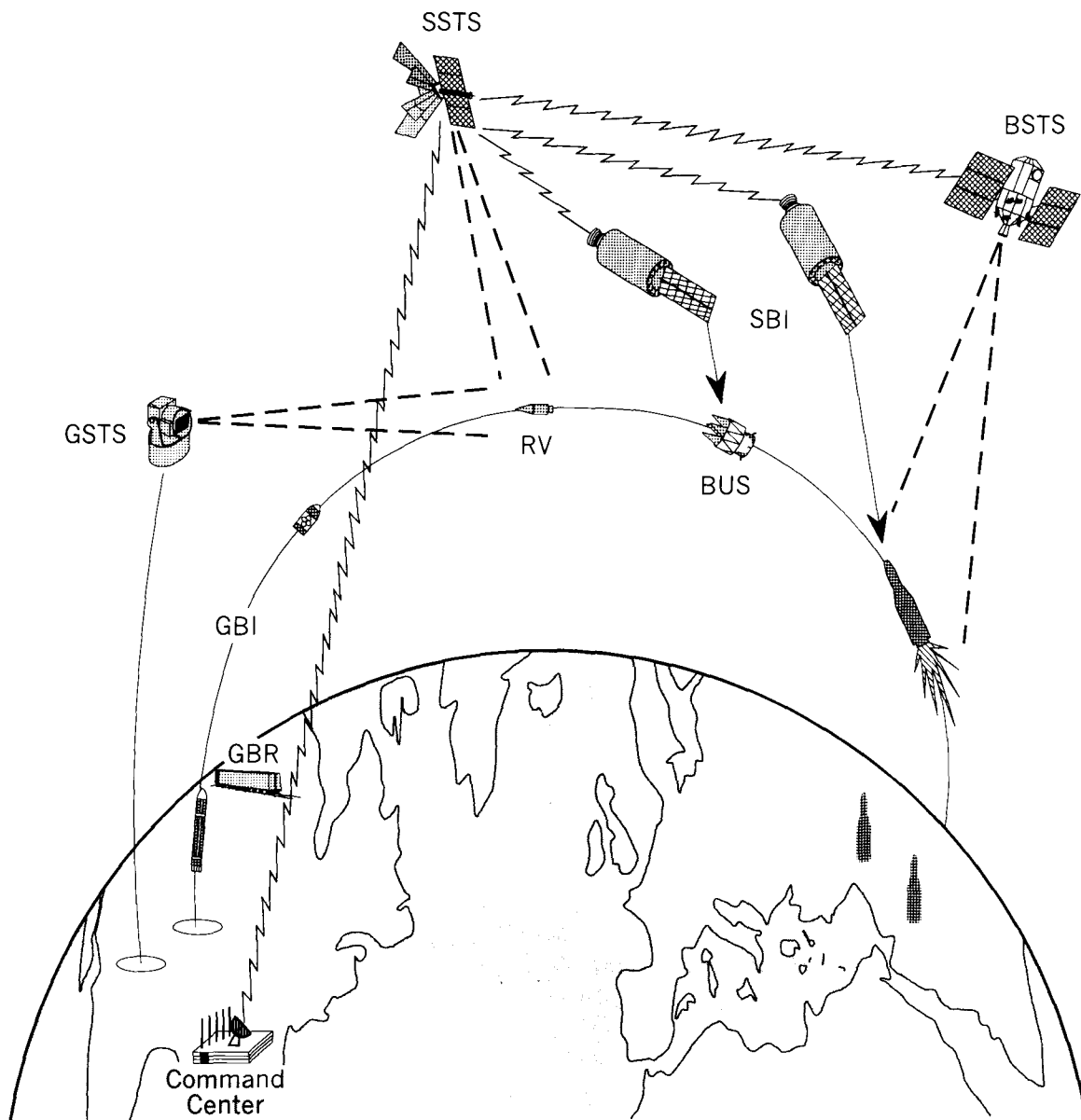
Numerous technologies are envisioned for the future that could help rectify this situation. The most promising lie within the purview of the Strategic Defense Initiative (SDI). The technology development programs being pursued under SDI are needed to respond to new challenges and take advantage of emerging technologies. Such research will provide us the opportunity to strengthen deterrence by making a fundamental change from our traditional offensive orientation to a greater reliance on defensive systems.

While the basic missions of strategic nuclear offensive forces have remained fundamentally constant over the last 40 years, capabilities have changed dramatically over time in response to changes in technology, policy, and the Soviet threat. Until the early 1960s, the United States relied on its massive strategic superiority, including a substantial commitment to air defense, to deter, and if necessary, defeat a Soviet attack on the United States or its allies. However, as Soviet nuclear capabilities grew in the late 1950s and early 1960s, the threat of massive retaliation lost credibility. The United States then shifted to a strategy of flexible response.

The increasing importance of ballistic missiles in the Soviet arsenal of the late 1960s meant that air defenses would be increasingly ineffective in limiting damage from an attack. In 1972, the United States and the Soviet Union signed the Anti-Ballistic Missile (ABM) Treaty. This country developed and deployed a limited ballistic missile defense for a brief time and then dismantled it. Subsequently, we made little effort to defend against Soviet strategic nuclear attack, and the U.S. strategic defense program became focused primarily on providing warning of attack. U.S. efforts basically were confined to passive defensive measures, such as hardening of ICBM silos and critical command and control facilities, posturing of bombers and ballistic missile submarines to increase their survivability, and providing for continuity of governmental operations.

Interim SDS Phase One Architecture Concept

Chart 8



Symbols & Abbreviations:

-  Communication Lines
-  Sensing Lines
-  Interception Lines

BSTS - Boost Surveillance and Tracking System
 SSTS - Space-Based Surveillance and Tracking System

GSTS - Ground-Based Surveillance and Tracking System
 GBR - Ground-Based Radar
 SBI - Space-Based Interceptor
 GBI - Ground-Based Interceptor
 RV - Reentry Vehicle

During this same period, the Soviet Union took a very different approach, and today, modernizing Soviet strategic nuclear offensive forces are structured to emphasize their ability to strike U.S. forces. To limit damage from the U.S. weapons they could not destroy in a counterforce attack, the Soviets emphasized defenses. As a result, the Soviet Union currently has a very extensive air defense network, and it deploys an ABM system around Moscow. The Soviets have long maintained an aggressive program to develop advanced defenses against ballistic missiles, and they continue to invest heavily in passive defenses.

In the 1980s, building on an ongoing R&D program, the United States began reexamining the potential role of defenses, establishing the Strategic Defense Initiative Organization to conduct a broadly based R&D effort to determine the feasibility of effective ballistic missile defenses.

The Department of Defense plans to pursue aggressively options for layered defenses that include both ground- and space-based elements. The program emphasizes flexibility as we progress towards deployment of a system that meets the requirements of a first phase Strategic Defense System (SDS) as defined by the Joint Chiefs of Staff.

Pursuit of a robust SDI program also will provide an effective hedge against any near-term Soviet decision to expand rapidly its antiballistic missile capability beyond that allowed by the ABM Treaty. Nonetheless, the U.S. strategic defense program will be conducted in compliance with U.S. legal obligations, including the ABM Treaty.

The SDI program now has completed over 400 tests and experiments, including the miniaturization of component technologies and a vast reduction in unit costs. If planned experiments yield the results that appear likely, the SDI program should soon demonstrate its ability to contribute significantly to deterrence. With the emphasis on developing defensive technologies and reducing costs, initial deployment of SDI could begin by the turn of the century.

The new technologies being investigated under SDI could provide the United States with the capability to enhance deterrence significantly, not only against Soviet strategic attack but also attacks of other countries that may develop their own missiles armed with nuclear and chemical warheads. The SDI program has enjoyed significant achievements in proving the feasibility of effective defenses.

LAND FORCES

The land forces of the United States are trained, equipped, and organized to deter war and protect vital U.S. interests around the world. Consisting of Army and Marine Corps units (less tactical aviation elements), these forces are essential to our defense. Through strength and readiness, they help persuade potential aggressors that resorting to armed conflict would not produce the aggressors' desired ends. Should deterrence fail, land forces provide unique warfighting capabilities that would be essential to restoration of peace on terms that preserve U.S. security and protect national interests. Their capabilities include defending and seizing vital land areas and conducting prompt and sustained land campaigns to achieve national military objectives. In peacetime and war, vigilant soldiers and Marines are persuasive symbols of the nation's strength and of its ability and willingness to meet global commitments. Operation Just Cause in Panama, which defended Americans, protected the Panama Canal, restored democracy, and brought Manuel Noriega to justice, showed the critical importance of highly trained and fully ready land forces.

Because the United States' security interests are linked to those of allied and other friendly nations, our forces must be prepared to counter threats on a global basis. These threats persist as developing nations gain increasingly deadly military capabilities, and as the Soviets continue to improve their forces through programmatic equipment modernization. Although proposals for conventional force reductions in Europe should hold great promise, we must ensure that our forces remain capable of countering Soviet and Eastern European military capabilities as they currently exist. In addition to the Department's traditional mission of defending against conventional attacks, U.S. land forces must maintain the capability to conduct contingency operations, cope with low-intensity conflicts, and deal with terrorism and illegal drug activities. Also, given the attractiveness of chemical weapons to Third World countries, the United States must be able to deter the use of chemical weapons against our forces through a strong chemical defense capability and a credible chemical retaliatory capability.

To meet these wide-ranging requirements, the United States needs a mix of ground forces that are trained to respond to a variety of needs. Heavy

forces provide the only counter to the massive armored forces that the Soviet Union and others can field. Additionally, similar forces may be needed in some areas of the Third World where potentially hostile countries have acquired increasingly sophisticated and lethal conventional and chemical/biological weapons. Light forces can be moved rapidly to trouble spots. Special operations forces are specially designed, equipped, and trained to perform their designated missions. Forward-based forces add to our deterrent strength and give us the ability to respond immediately to events, while forces stationed in the continental United States (CONUS) give us the flexibility to deploy to conflict regions as needed. Active forces provide immediate-response capabilities and flexibility, while the reserves permit the time-phased expansion of military strength to meet the requirements of sustained combat. Each of these force elements must be continuously tailored to support the evolving security requirements of the United States.

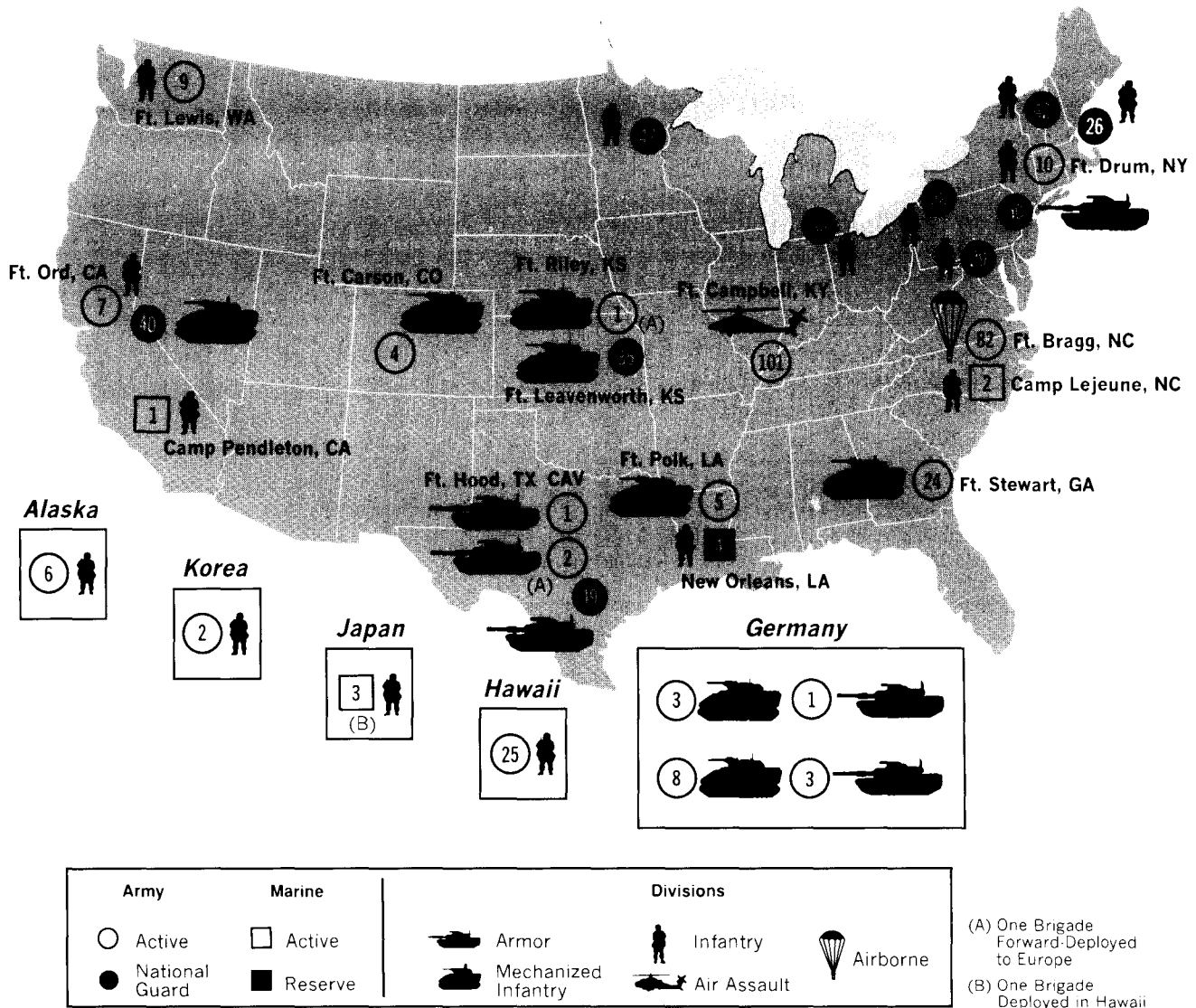
Seven critical requirements guide decisions on the land force structure:

- Forward defense through forward presence, by which we complement allied forces in deterring threats to our vital interests.
- CONUS-based forces, to reinforce our forward-deployed units should deterrence fail.
- Rapid deployment capabilities, to protect U.S. interests in regions where U.S. forces are not routinely stationed.
- Combat support and combat service support capabilities, to sustain our combat forces.
- A balanced mix of active and reserve forces, to help hold down costs while maintaining strength.
- Prepositioning of high-priority equipment and supplies ashore and afloat in areas of critical interest.
- Sufficient stocks of war-reserve equipment and supplies to sustain deployed forces until a mobilized production base can meet wartime demands.

About half of the Army's combat forces are in the active component. The bulk of the combat support and combat service support units are in the reserves. The Army's active component contains 18 divisions. The reserve component includes 10 divisions with seven brigades and five

Deployment of U.S. Divisions

Chart 9



battalions that are used to round out nine of the active divisions. The Marine Corps maintains three active divisions and associated support elements for use in three Marine Expeditionary Forces, along with one reserve division and their support elements to augment those forces in wartime. Marine land and tactical aviation forces organized in Marine air-ground task forces (MAGTF) provide

a unique and valuable defense capability.

The land force programs included in the FY 1991 budget will provide a force structure that enables us to carry out successfully the requirements of our national security strategy, now and in the foreseeable future. The Department endeavors to do more with less in this constrained fiscal environment.

Army and Marine Division Structure

Table 8

	Heavy ^a	Light ^b	Total
Active Army Divisions			
Fully Active	4	5	9
Roundout (Battalion)	2	—	2
Roundout (Brigade)	4	3	7
Army National Guard	4	6	10
Active Marine Corps	—	3	3
Reserve Marine Corps	—	1	1
Total	14	18	32
Nondivisional Maneuver Brigades/Regiments ^c			
Active Army	6	2	8
Army Reserve Components	9	9	18
Total	15	11	26

^a Armored, mechanized.

^b Marine forces, and Army infantry, air assault, airborne, light infantry, and motorized divisions.

^c These units have not been assigned a roundout mission.

NAVAL FORCES

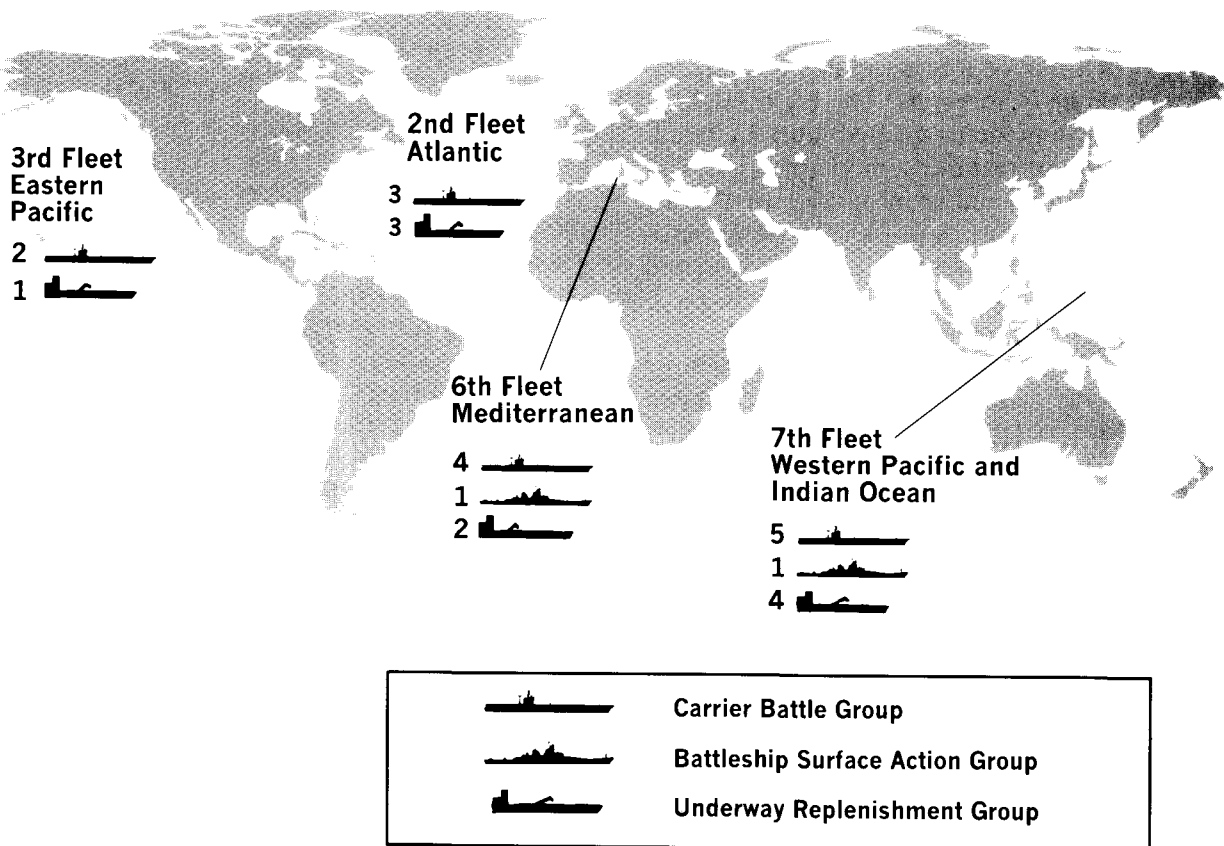
Maritime forces are vitally important to the success of the U.S. defense strategy, which is based on deterrence, forward defense through forward presence, and allied cooperation. Naval forces provide the means to satisfy a great diversity of requirements in support of that strategy.

The structure and operations of the U.S. Navy are critically influenced by global threat assessments. The United States must retain the ability to project power to critical regions of the world

to deter would-be aggressors, support the favorable resolution of crises, honor commitments to allies and friends, carry on the fight against illegal drugs, and maintain unimpeded access to the searlanes on which the economic interests of the United States and the rest of the free world depend. U.S. naval forces are especially suited to meeting these commitments. In particular, aircraft carrier battle groups, the core of the U.S. power-projection capability, play a crucial role in the U.S. national security strategy.

Wartime Disposition of U.S. Naval Fleets

Chart 10



The threats to our maritime security are considerable. Soviet naval capabilities and the threat that they pose to the United States and its allies remain strong. U.S. forces now face sizable, highly capable Soviet maritime forces. The Soviet Union is continuing to build advanced, multimission submarines, surface ships, and aircraft. Their production lines are turning out blue-water platforms with improved weapon and sensor capabilities.

The Soviet navy has improved its capability to conduct naval warfare with an arsenal of nuclear and conventional weapons launched from ships, submarines, and aircraft, and by land-based forces, assisted by a wide variety of targeting systems, including space-based systems. Examples of recently introduced Soviet military platforms and weapons include the highly sophisticated Akula-class nuclear attack submarine and the new Tbilisi-class large deck carrier. The Soviets also are continuing development of long-range sea-launched cruise missiles, including the SS-N-21 and the SS-NX-24.

To meet these commitments and threats, the Navy requires a mix of forces capable of performing a broad range of missions. The FY 1991 budget bolsters maritime defense capabilities by building on the pillars of readiness, modernization, and force structure, with major programs in the areas of antisubmarine warfare (ASW), power projection, anti-air warfare (AAW), mine warfare, and anti-drug efforts.

Antisubmarine warfare is a critical warfighting priority. Of the various threats to the United States' ability to support allies and other interests abroad, Soviet submarine capabilities pose the greatest potential challenge. Against that threat, the Navy employs a layered ASW strategy, in which hostile submarines would be detected and engaged in forward areas and at geographic choke points, before they could threaten U.S. forces or disrupt sea lines of communication.

Four key resources combine to form a web of ASW capability: surveillance systems, attack

submarines, maritime patrol aircraft, and surface combatants operating in conjunction with ASW aircraft. Special capabilities in each area, and balance among these areas, are prerequisites for an effective ASW force that can meet the challenge posed by the newer, quieter, and more lethal Soviet submarines.

The most effective defense against threats to maritime forces is to strike as far forward as possible at the aircraft, submarines, and ships that carry antiship missiles. Defending against the missiles themselves is a particularly difficult challenge. As antiship threats proliferate, primarily in the form of cruise missiles, the United States faces the challenge of developing quicker-reaction systems to cope with these threats.

While the Navy's peacetime presence mission requires relatively close proximity to land, the proliferation of ground- and air-launched cruise missiles greatly complicates the fleet's air defense problem. Unlike the submarine threat, which emanates almost exclusively from the Soviet challenge, air threats to U.S. naval task forces and convoys come from an ever-expanding list of nations.

Power-projection forces are increasingly important elements of the U.S. strategy. These sea-based forces — primarily aircraft carrier battle groups and Marine expeditionary forces — provide a highly mobile and flexible deterrent along with warfighting capabilities of vital importance. With a shrinking overseas base network and fewer nations willing to allow U.S. access to their facilities, the ability to project power over extended distances grows more difficult. The capabilities of our maritime power-projection forces have therefore become even more vital to our security.

Because of their mobility, flexibility, and readiness, strong and balanced naval forces will remain absolutely essential to preserving peace and freedom and advancing American interests around the globe.

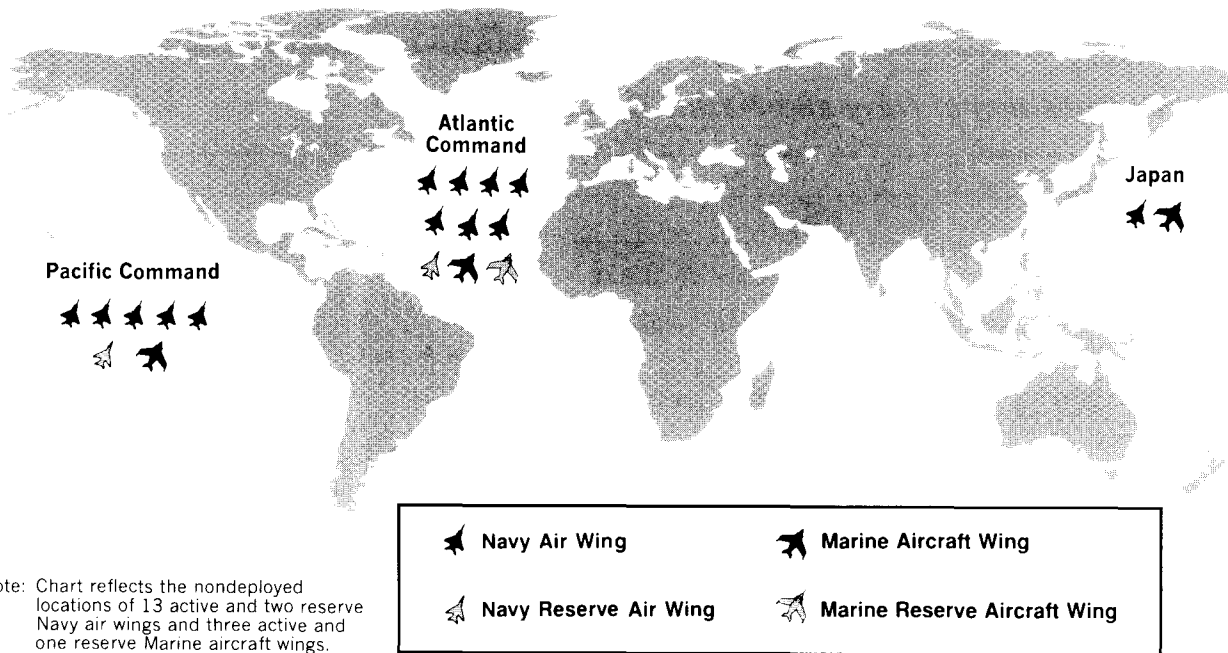
Air Force tactical air forces must be capable of fighting both day and night and in adverse weather. The aircraft and weapons they employ must be able to locate and destroy mobile tactical targets as well as fixed targets, such as airfields. In addition, these forces must be able to achieve and maintain air superiority in a dynamic combat environment in order to protect friendly land and sea operations, support air interdiction campaigns, and allow freedom of action to conduct other combat missions.

At present, these needs are fulfilled by F-16, F-15, F-117, F-111, F-4, A-10, and A-7 aircraft in

numbers equivalent to more than 36 tactical fighter wings (each equipped with 72 combat aircraft). Six wing-equivalents are dedicated to the close air support mission, seven to air superiority, almost eight to interdiction (including battlefield interdiction), and more than 15 to multiple roles. (Included in this latter category are aircraft capable of either air-to-air or air-to-ground combat, such as the F-16 and F-15E.) The Air Force also operates a significant number of aircraft that are specially equipped to perform reconnaissance, airborne warning and control, tactical air control, electronic combat, air rescue, and other support missions.

Disposition of Navy and Marine Corps Air Wings

Chart 13



Navy tactical air forces also must have day, night, and adverse weather capability. These forces provide direct support for deployed naval surface units as well as a sea-based air attack capability that is not dependent on access to land-based facilities. Naval aviation forces must be able to locate and destroy mobile tactical targets, both at sea and ashore, as well as fixed targets, such as airfields.

To provide these capabilities, the Navy currently maintains 13 active and two reserve carrier air wings. Each wing is composed of a mix of combat and support aircraft. These systems perform the full range of naval tactical air missions: air superiority, surface attack, surveillance, command and control, electronic countermeasures, in-flight refueling, antisubmarine warfare, and search and rescue operations. The composition of the wings varies according to aircraft carrier type, aircraft inventories, and other factors.

The Marine Corps' tactical air forces are an integral part of the Marine Air-Ground Task Force

(MAGTF) concept. As such, they provide highly specialized capabilities for direct support of Marine ground elements. Marine tactical aviation forces are structured to perform air superiority, ground attack, electronic combat, and in-flight refueling and other support missions. The Marine Corps emphasizes organic close air support for engaged Marine troops and relies on the Navy for certain other capabilities, such as early warning and control. The Marines maintain three active and one reserve air wings. Their wings are "composite" structures, incorporating a wide range of fixed-wing aircraft as well as attack and transport helicopters.

This current tactical air force structure effectively supports today's defense strategy. Tomorrow's threat environment, however, will be shaped by the unpredictable forces that are defining this period of international transition. The Department will structure, train, and equip our air forces to respond effectively to any future challenge.

Typical Composition of Navy and Marine Corps Air Wings

Table 9

Type of Aircraft	Navy		Marine Corps	
	Traditional Wing	"Roosevelt" Wing	Type of Aircraft	Number of Aircraft
F-14	24	20	F/A-18	48
F/A-18 (or A-7)	24	20	A-6	20
A-6	10	20	AV-8B	60
KA-6D	4	0	TA-4/OA-4	9
EA-6B	4	5	RF-4 or F/A-18	8
E-2C	4	5	EA-6B	6
S-3	10	10	KC-130	12
SH-3	6	6	CH-46	60
Total	86	86	CH-53	48
			AH-1	24
			UH-1	24
			OV-10	12
			Total	331

SPACE FORCES

Space long ago joined land, sea, and air as an environment in which the Department of Defense operates. The Department relies heavily on space systems to perform its various functions. Should deterrence fail, these systems would be critical to the defense of the United States and its security interests.

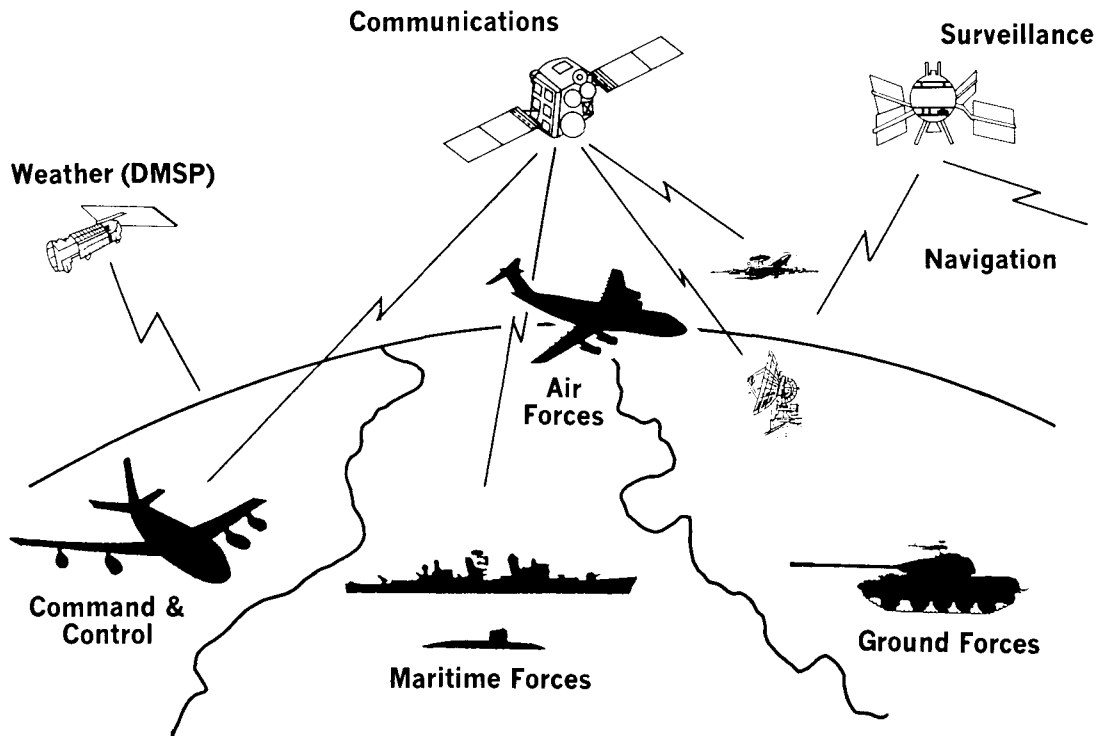
Space systems provide communications, surveillance, and navigation support, as well as meteorological and oceanographic information. They also are essential for treaty compliance monitoring, early warning, and strategic defense. Given the critical roles these systems play in defense missions, the United States must ensure that hostile

forces cannot destroy or blind its space assets or deny its use of what has been called "the ultimate high ground."

Recent U.S. and Soviet proposals to reduce nuclear and conventional forces have focused attention on the importance of space systems. The potential for reducing nuclear and conventional armaments, decreasing tensions, and stabilizing relations with the Soviet Union hinges significantly on our ability to verify Soviet compliance with arms agreements and to protect the means by which we do so. Space assets are crucial to an effective verification capability.

Multiple Roles of Space Systems

Chart 14



The Department of Defense must develop and maintain space forces that fulfill both service-specific and Department-wide needs. To meet this dual requirement in a period of budgetary restraint, we seek to reduce the cost of our space infrastructure by designing systems that can more directly satisfy the full spectrum of operational requirements.

In light of the critical importance of space forces, the United States is seeking to improve its space launch; command, control, and communications (C³); and other capabilities useful in control of space, such as an antisatellite capability. We have made considerable progress toward the goal of assured access to space. The return to operational flights of the space shuttle, and the successful launches of all of DoD's operational space boosters in 1988 and 1989 (Atlas, Scout, Delta, and Titan), were major steps in the assured access effort.

In 1989, the Department successfully launched its heaviest unmanned booster, the Titan IV, and a medium-lift vehicle, the Delta II. The Titan IV program is being expanded, both in numbers and in upper-stage capability, to accommodate heavy payloads that have been removed from the shuttle program. This transition was necessary to relieve the overcrowded shuttle manifest, achieve deployment flexibility and replenish high-priority space systems, provide an alternative launch means when orbit inclination requirements could not be satisfied by the shuttle, and reduce the cost of space launches. Progress continues on the Atlas II, which will carry intermediate-class payloads. Additionally, under a restructured Advanced Launch System (ALS) program the Department is investigating new technologies that could substantially reduce the cost of putting spacecraft into orbit in the future.

Existing military satellite communications systems are being upgraded and modified to increase their reliability and capacity. These include FLTSATCOM/AFSATCOM, an ultrahigh frequency (UHF) system that supports mobile user requirements, and the superhigh frequency (SHF) Defense Satellite Communications System (DSCS). Of the five operational and two on-orbit spare DSCS satellites, four are DSCS IIIs and three are older DSCS II models. The transition of the full DSCS constellation to the upgraded DSCS III version will be complete in the early 1990s. The new extremely high frequency (EHF) Milstar satellite

system will provide survivable and enduring communications links that are highly resistant to jamming and to the effects of nuclear weapons. This constellation is scheduled to go into operation before the turn of the century. Together, these systems will provide secure, survivable, and reliable communications support for our forces, and enable them to operate with NATO and other friendly forces on a global basis.

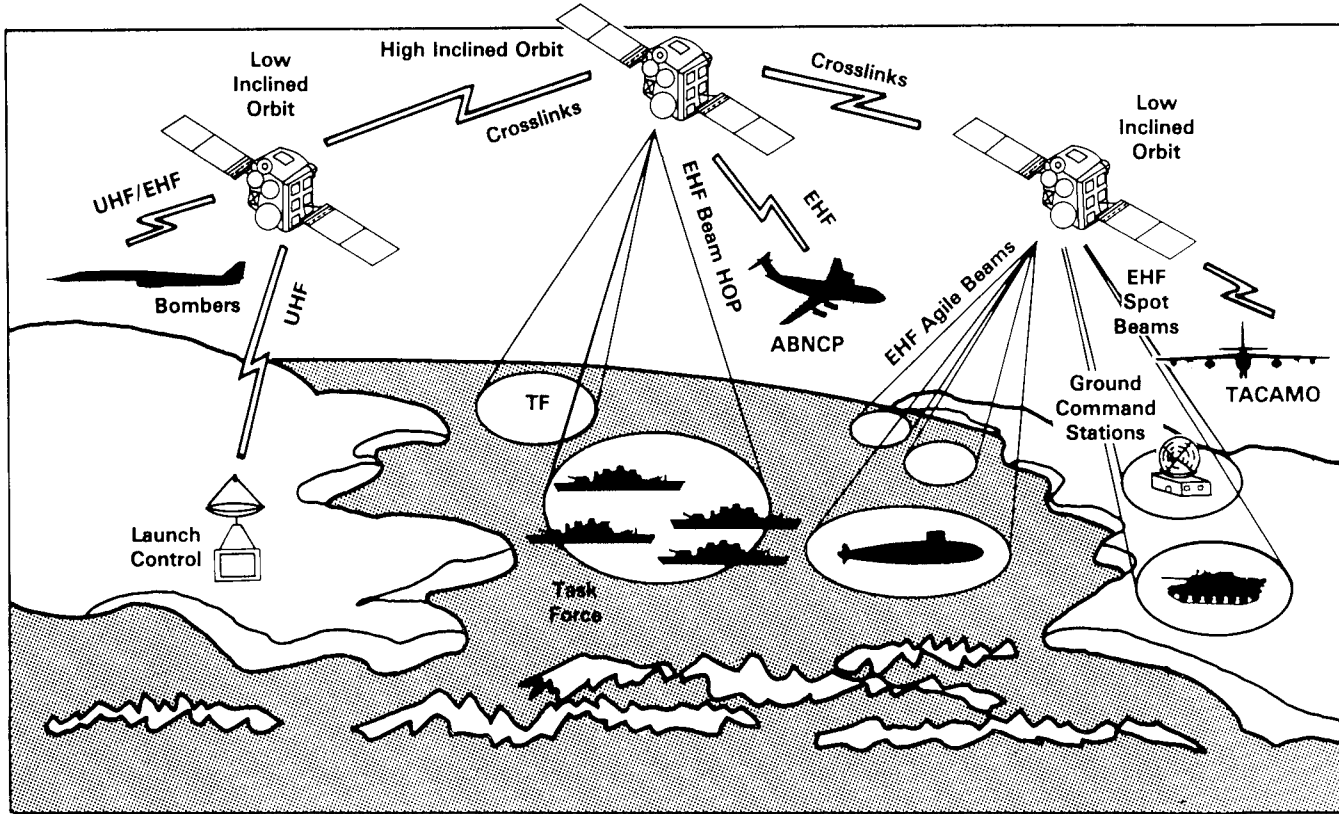
The NAVSTAR Global Positioning System (GPS), with a primary mission of providing extremely accurate position-locating data to U.S. forces, has moved further toward a fully deployed constellation of satellites. As of December 1989, four operational GPS satellites have been launched, joining the six developmental systems already in space.

During a crisis or conflict current satellite constellations might not be capable of satisfying peak demands simultaneously in various regions of the globe should launch or on-orbit failures occur. Small tactical satellites that incorporate extremely advanced technologies and that could be launched by small vehicles could provide a cost-effective means of quickly augmenting our space force structure. Defense Advanced Research Project Agency's (DARPA's) Advanced Space Technology Program (LIGHTSAT) is investigating the technologies that would be required by such satellites and their support systems.

More immediate improvements in space capability are being provided through the modernization of the satellite control network at the Consolidated Space Test Center (CSTC) at Onizuka Air Force Base, California, and the Consolidated Space Operations Center (CSOC) at Falcon Air Force Base, Colorado. In 1989, the upgraded capabilities offered by these networks were crucial in supporting launches of two classified payloads, two SDI experiments, and the first three Block II GPS spacecraft. Installation also was completed last year of new automated remote tracking stations at Thule Air Base, Greenland; Falcon Air Force Base, Colorado; and Oakhanger Air Base, in the United Kingdom. Additionally, the United States completed the turnover of primary GPS control authority from CSTC to CSOC. Efforts to transfer control of the Defense Support Program, Defense Meteorological Satellite Program, and DoD communication satellites to CSOC continue.

MILSTAR Configuration

Chart 15



Much remains to be done. In spite of the promise of reduced U.S. and Soviet force levels, trends in Soviet capabilities continue to be a concern. The Soviet space program has grown steadily for several decades. In the 1980s, the Soviets introduced several significant assets, and demonstrated an ability to rapidly reconstitute lost or degraded capabilities in space. With a large and responsive space infrastructure, and a continuing presence in space, the Soviets could simultaneously threaten some U.S. or allied on-orbit assets with their operational antisatellite systems and service their capable fleet of manned and unmanned space platforms.

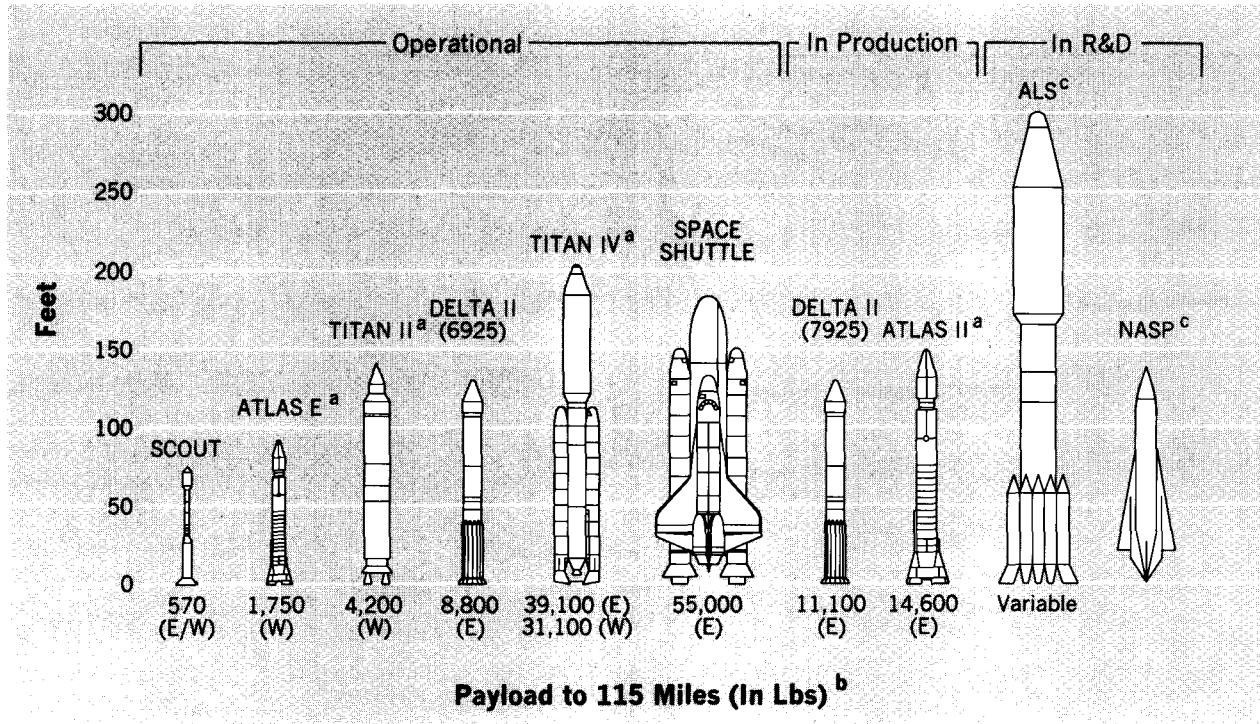
Other Soviet assets that pose a potential threat

to our forces are space-based targeting satellites. These systems, which can track some U.S. and allied naval and land-based forces, could provide precise targeting data in times of crisis or conflict. An ASAT capability would be a vital part of our force posture, contributing substantially to our ability to deter both conventional and nuclear war and to protect our forces, should conflict occur.

Space has become an arena of intense national security interest. The ability of the United States to deter aggression and defend its interests depends vitally on U.S. space programs.

U.S. Space Launch Vehicles

Chart 16



^a Ballistic Missile Derived
^b Approximate
^c Height Approximate
(E) East Coast Launch - Low/Mid inclination
(W) West Coast Launch - Polar inclination

STRATEGIC MOBILITY

The rapid projection of military power to protect security interests around the globe is a vital component of the U.S. defense strategy. In wartime, the United States must be able to reinforce its forward-deployed forces and support allies, while countering threats in other regions important to U.S. security. In peacetime, it must be able to project power and influence in regions of U.S. and allied interest where U.S. forces are not routinely stationed.

U.S. military strategy calls for forward defense through forward presence, and for the rapid projection of combat forces and materiel in times of crisis. The success of that strategy hinges on the capabilities provided by airlift, sealift, and land and afloat prepositioning programs. As the United States adjusts to changing circumstances in Europe and adapts the composition of its forces, strategic mobility must remain a key component of the U.S. defense posture. Strategic mobility will become even more crucial to the protection of U.S. global interests in the future, as the U.S. presence abroad is reduced under negotiated agreements.

In the event of war in Europe, the United States is committed to its NATO partners to augment its forward-deployed forces with six additional Army divisions, 60 additional tactical fighter squadrons, one Marine Expeditionary Brigade, and associated support elements. These forces would have to be delivered to the European theater within 10 days of a decision to mobilize. Further reinforcements would follow. Carrying out a deployment of this scale would require the movement of millions of tons of equipment and materiel, and hundreds of thousands of personnel, across the Atlantic Ocean by air and by sea. To minimize the burden on its mobility resources, the United States stores sizable amounts of equipment, supplies, and munitions in Europe. To cope with threats in other regions of the world, the United States maintains the capability to deploy about five Army divisions, two Marine Expeditionary Forces, associated air and naval forces, and support elements.

Based on these deployment requirements for Europe, the Defense Department has established program goals for the various categories of mobility. The goals include:

- For prepositioning — the storage of POMCUS (Prepositioning of Materiel Configured to Unit Sets) in Europe for six Army divisions, their associated support units, and some of the support units needed by the four forward-deployed U.S. divisions, and one Marine expeditionary brigade;
- For sealift — the capability to move one million tons of equipment in a single sailing; and
- For airlift — the ability to transport 66 million ton miles of cargo per day (MTM/D).

Airlift, in conjunction with prepositioning, would meet the initial movement requirements in a NATO reinforcement. By itself, airlift can move tactical air forces, light ground units, and a limited amount of high-priority unit equipment and munitions. When coupled with prepositioning of heavy materiel, it also provides the means for deploying heavy forces. Once the POMCUS program is complete, about 20 percent of the U.S. forces that would deploy to Europe in a major conflict would be supported by prepositioning and moved by airlift. Sealift would deliver more than 95 percent of the supplies and petroleum products needed to sustain these forces over time.

For deployments outside Europe, airlift would be used to move Air Force units, light ground units, and a limited number of heavier mechanized and armored units. Sealift would deploy and sustain larger forces. Such deployments would most likely occur in regions where port facilities are inadequate, necessitating the discharge of materiel under the "logistics over the shore" concept, which entails the use of crane ships, causeways, lighterage, and offshore petroleum discharge systems. In regions where the United States has security interests but does not maintain a large peacetime presence, a combination of afloat prepositioning and airlift would be used. Although storing equipment and supplies aboard ships is more expensive than using warehouses, it provides strategic flexibility that land-based prepositioning cannot. The three Marine Corps brigades that have equipment, munitions, and 30 days of supplies stored for them on maritime prepositioning ships (MPS) illustrate this point. If a contingency arose, the forces would be flown immediately to the conflict region, where they would link up with the ships carrying their combat equipment.

To enhance airlift capabilities, the United States is developing the new C-17 transport aircraft and maximizing the use of civilian cargo planes maintained in the Civil Reserve Air Fleet (CRAF). Today, as a result of improvements made over the past decade, the airlift fleet is capable of meeting about 75 percent of the wartime objective, delivering 48 million ton miles of cargo per day as against the 66 million goal. With the addition of the C-17, the fleet would be able to meet the full objective.

For sealift, among the possible single-theater scenarios, our objective is to provide enough capability to support a U.S. "go-it-alone" operation in the theater presenting the most demanding requirements. In a global war scenario, the objective is to meet with U.S. assets, sealift requirements in theaters where little or no allied assistance is available, and to draw as necessary on NATO shipping to satisfy European demands. The NATO Planning Board for Ocean Shipping (PBOS) maintains a Sealift Ships List comprising more than 400 dry cargo vessels that could quickly be made available for a European reinforcement. U.S. ships operated by the Military Sealift Command or attached to the Ready Reserve Force (RRF) would carry the initial large cargoes that would have to be transported to Europe by sea in a major deployment. The RRF, managed by the Maritime Administration, consists of ships maintained in reduced operating status that are militarily useful but no longer suited to profitable commercial trade. Because of the critical role these ships would play in a military deployment, funding to support the RRF's

growth and readiness determines, to a large extent, the United States' ability to deploy forces early in a conflict.

Materiel needed to sustain deployed forces would be moved by ships requisitioned from the U.S. merchant marine or from commercial fleets under effective U.S. control, by allied ships (in a NATO reinforcement), and by multiple voyages of U.S. government-owned ships. Sustainability requirements could be met today with a blend of these resources, but currently our sealift capacity is about 20 percent short of our goal of one million short tons in a single lift, and future trends are not encouraging. The decline in U.S. and allied merchant marine fleets, due to international economic conditions beyond DoD's control, may threaten the future ability of the United States to sustain major military forces in combat theaters. Cooperation of government agencies and the Congress in implementing the National Sealift Policy announced by the Administration last October is important to maintaining the current forward defense strategy, and will become even more so if the Conventional Armed Forces in Europe (CFE) negotiations produce an agreement that leads to a substantial reduction in forward-deployed forces.

Strategic mobility is a capability of growing importance that will be greatly affected by future changes in the international situation and in the disposition of U.S. forces. The United States must maintain a steady investment in strategic mobility to meet the challenges of the future.

SPECIAL OPERATIONS FORCES

Over the coming decade, potential changes in global strategic relationships, combined with the potential for Third World conflict and related, multinational threats such as insurgency, terrorism, chemical/biological weapons proliferation, and narcotics trafficking, will increase the complexity of U.S. defense challenges. Faced with broad new uncertainties, the U.S. military must be prepared with appropriate forces to meet a wide variety of threats. Special Operations Forces (SOF) provide flexible, innovative, and highly ready forces whose expertise is applicable to both conventional and unconventional warfighting environments. At the same time, SOF areas of specialization, such as civil affairs and psychological operations, as well as language skills and other region-specific capabilities, enable these forces to contribute to U.S. efforts to respond to and defeat low-intensity conflict.

The past decade has seen an intensive program to revitalize SOF capabilities. A continued focus on SOF readiness is essential to our ability to deter and defend against aggression in the years ahead.

Challenges of the 1990s

The existence of an effective nuclear deterrent and large and capable conventional forces has effectively prevented war between the superpowers for more than 40 years, but it has not deterred mid- and low-intensity conflict. Such conflict, largely the result of instability in the Third World, poses a real and immediate challenge to democracies, and threatens relationships and alliances that are vital to the coalition defense and open economies of the United States and its allies and friends.

Third World conflict is often centered on regional or ethnic problems that reflect the unique political, social, and economic conditions existing in Third World countries. These problems demand unconventional solutions and the application of different criteria for victory — notably, winning popular support rather than merely capturing and controlling territory.

The challenge in peacetime is to engage U.S. power effectively in response to the threat posed by low-intensity conflict. Deterring such activities is enhanced by maintaining credible specialized forces and demonstrating a willingness to use these

forces as appropriate in dealing with threats to U.S. interests.

Terrorism is a threat of particular concern that requires a strategy which must embrace the entire range of options open to the United States — including, as a last resort, military options. Indeed, political and economic actions are all the more effective when a terrorist state or group understands clearly that behind these measures stands effective military power, capable of an appropriate and timely response. While military retaliation alone will not stop terrorism, it can be a very effective instrument by making the costs to terrorists, and the states that support them, far outweigh any gains they might seek.

Meeting the Challenges Through Peacetime Engagement

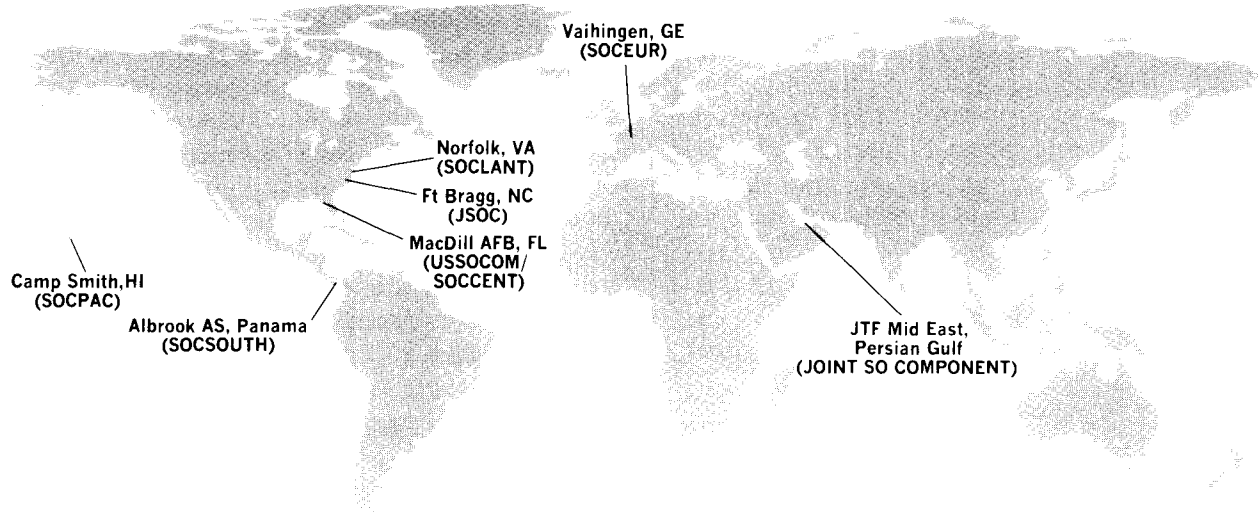
Peacetime engagement recognizes that low-intensity conflict typically seeks to undermine already weak governments and the peacetime conditions that are necessary for democratic institutions and processes to function and mature. An effective response to low-intensity conflict thus requires innovative counterstrategies that reinforce a climate for democracy by providing economic, humanitarian, and security assistance. At the same time, when low-intensity conflict threatens our basic security interests, peacetime engagement requires the use of national power, including military force when necessary, to defend these interests.

Special Operations Forces play a critical role in this regard. Characterized by flexible, small unit organizations with a wide range of specialized skills, they help strengthen emerging democracies by providing numerous forms of assistance: security, training, humanitarian, and military civic action; psychological action; civil affairs; and combined U.S., allied, and host-country operations. They are capable of assisting host countries in combating insurgencies, terrorism, and narcotics trafficking and related violence. Special Operations Forces also provide the capability to conduct complex and urgent contingency operations.

Special Operations Forces counteract violence primarily by providing training to the military forces of friendly Third World nations. In FY 1989, 21 SOF mobile training teams were

Joint Special Operations Commands

Chart 17



dispatched to 12 countries around the world. SOF have been involved in such security assistance activities in Latin America since 1961. An example of security assistance efforts was the special operations training provided in El Salvador to help strengthen the emergence of democracy in the 1980s. Special Operations Forces also help train Drug Enforcement Administration teams and military and law enforcement agencies in countries that are sources of the drug trade. These forces are then better prepared to counter violence by drug warlords and attack the drug-trafficking infrastructure.

Other SOF functions, such as psychological operations and civil affairs, play a key role in bolstering the will of friendly forces to fight and eroding the will of aggressors. In Grenada, Special Operations Forces not only had an important combat role; they helped rebuild the democratic society once the people of Grenada regained their liberty.

Special Operations Forces also executed missions crucial to the success of Operation Just Cause in Panama.

Conventional Deterrence

In conjunction with conventional forces, Special Operations Forces make a vital contribution to conventional deterrence as well. Should deterrence fail, these forces provide wartime economy-of-force capabilities to disrupt, delay, or divert enemy forces through direct action, strategic reconnaissance, or unconventional warfare. Special Operations Forces can conduct operations deep inside enemy territory to weaken and disrupt the enemy's rear area of operations. The close integration of SOF and conventional forces in both planning and employment remains an essential element of our deterrent capability.

Moving Toward the Future

As part of the overall U.S. force modernization program, the Department of Defense has three broad priorities for Special Operations Forces. First, personnel quality within SOF must be emphasized and maintained at a high level. SOF missions are complex, requiring extensive training and special expertise. SOF personnel must be dedicated to their career specialities, which entail long-term development through training and experience, including acquiring knowledge of the cultures, languages, and customs of foreign countries. Second, the usually urgent requirement for rapid projection of globally oriented Special Operations Forces, in both peacetime and war, demands that we stress mobility capabilities. In the case of SOF, moreover, the capability to infiltrate and exfiltrate forces successfully from hostile areas is critical. Third, we are emphasizing the organizational development of

SOF through the consolidation of the U.S. Special Operations Command.

The global uncertainties we face in the decade ahead make it essential to maintain and strengthen U.S. Special Operations Forces and the innovative strategies needed for their effective employment. Successful peacetime engagement and conventional deterrence will require forces that can be used, as appropriate, to support the global democratic interests on which the United States depends: in training friends and allies to meet threats to democracy; in counterterrorist operations; in countering illegal drug trafficking; in executing other missions required to defend U.S. lives, interests, and security; and in maintaining a credible, effective deterrent that is valid across the spectrum of conflict. To meet these requirements, the United States must continue to give high priority to Special Operations Forces.

drug pipelines from source countries to the United States, and (3) in distribution networks in the United States. U.S. military forces can assist in the attack on the supply of drugs in each of these phases.

The production of illegal drugs is a complex criminal enterprise. It requires illicit labor, capital, entrepreneurship, and a substantial infrastructure to grow the plants that are the raw materials and to refine and manufacture the drugs. Reducing the availability of these elements of production in the countries from which illegal drugs originate would reduce the flow of drugs to the United States.

The Department of Defense can make an effective attack on the supply of drugs within source countries by providing operational support to host-country forces and cooperating with those forces in preventing drug exports. Pursuant to the National Drug Control Strategy, near-term efforts will focus on the Andean nations from which most cocaine entering the United States originates. Key to the success of U.S. efforts directed at the supply of illegal drugs — and in particular, to the success of U.S. counternarcotics operations — will be the cooperation of the foreign countries involved.

A sustained multinational effort is essential to stemming the flow of illegal drugs from abroad. Drug-producing criminal organizations control what amounts to private armies that challenge the law enforcement and military forces of their home countries. Often such organizations are intertwined with insurgent forces that directly challenge the governments of those countries. Defense Department assistance reinforces the abilities of host-country governments to combat drug-producing organizations. Security assistance can help such governments protect themselves from criminal drug enterprises and drug-related insurgencies and enforce their laws against drug producers and traffickers. It will help to strengthen the economies of these nations and keep their labor, capital, and entrepreneurship channeled toward useful production and away from drug manufacturing. Success in other efforts to attack the supply of illegal drugs in drug-producing countries will depend over the long run on the establishment of healthy economies and the restoration of governmental authority. To assist in implementing this element of the national drug control strategy, DoD will execute security assistance programs in accordance with presidential instructions and applicable laws,

and in coordination with the Department of State and other federal agencies.

The Department also is prepared to provide counternarcotics operational support to the forces of cooperating countries. U.S. armed forces can provide foreign forces with substantial assistance in training, reconnaissance, command and control, planning, logistics, medical support, and civil action. Such military support would be designed to increase the effectiveness of foreign forces' efforts to destroy drug-processing laboratories, disrupt drug-producing enterprises, and control the land, river, and air routes by which illegal drugs exit their countries.

In addition to these forms of assistance, the United States can help law enforcement agencies in foreign countries combat the export of drugs. The Defense Department can contribute to that effort by providing improved intelligence collection capabilities, which will benefit not only source-country efforts but also U.S. actions in the second line of defense — the attack on drugs in transit to the United States.

The Department will assist in stopping the delivery of illegal drugs on their way to the United States and at U.S. borders and ports of entry. Deploying appropriate elements of the armed forces with the mission of helping to stem the flow of drugs should, over time, reduce the drug flow into our nation. At a minimum, these efforts will complicate the challenge of getting illegal drugs into the United States, thereby increasing the costs and risks of drug smuggling. As a high priority, U.S. military counternarcotics deployments will emphasize combating the flow of drugs across the Caribbean Sea and across the southern border of the United States.

A key element of the DoD counternarcotics effort is the development of effective detection and monitoring capabilities. The goal of the detection and monitoring mission is to identify aerial and maritime drug-smuggling and thereby help law enforcement personnel apprehend drug traffickers and their illicit cargo. This is a significant challenge, requiring the establishment of regional commands, intelligence apparatuses, and integrated command, control, and communications networks. The primary surveillance assets employed in aerial and maritime counternarcotics detection and monitoring include aerostats, coastal radars, airborne

early warning and reconnaissance aircraft, ground-based radars, naval combatants, and air defense fighter forces.

Intelligence collection assets are concentrating on the exploitation of targets such as international drug production, processing facilities, transshipment points, and associated air and maritime launching areas in support of detection and monitoring.

The success of counternarcotics interdiction and deterrence efforts will depend greatly upon the ability of the Department of Defense and law enforcement agencies to marshal effectively the myriad command, control, communications, and intelligence resources they possess into an integrated counternarcotics network. The Department of Defense is prepared, with the cooperation of U.S. law enforcement agencies, to undertake this task. The Department is prepared also to develop and employ the capability to coordinate tactical control of federal detection and monitoring assets actively dedicated to counternarcotics operations outside of and along the borders of the United States.

The third line of attack against the production, trafficking, and use of illegal drugs focuses on the United States itself. The role of U.S. armed forces in this regard includes actions to reduce both the supply of illegal drugs and the demand for those drugs.

Within our borders, the Department will assist federal, state, and local law enforcement agencies

and National Guard units with training, reconnaissance, command and control, planning, and logistics. In appropriate cases, armed forces personnel and equipment will be detailed directly to law enforcement agencies to assist in the fight against drugs. The Department of Defense will ensure that its administrative and command structures permit rapid and effective responses to requests for counternarcotics assistance from law enforcement agencies and the National Guard.

The Department also bears an important responsibility for reducing the use of illegal drugs by its military and civilian personnel. We have already met with substantial success in this regard, achieving since 1980 an 82 percent reduction in drug abuse in the military through aggressive education and drug-testing programs. The Department will step up its efforts to combat illegal drug use by its civilian work force and will make available to other large organizations its experience in reducing the demand for illegal drugs. The Department also will emphasize drug abuse awareness and prevention in the military school system, which educates over 190,000 of America's children.

The President's National Drug Control Strategy represents a multinational, multiagency approach to combating the drug problem. The Department of Defense plays a crucial role in defending the United States from the scourge of illegal drugs. It will employ the resources at its command to fight the production, trafficking, and use of illegal drugs as an important part of the national effort to secure a drug-free America.

RESEARCH AND DEVELOPMENT

Research and Development (R&D) programs are vitally important to our national defense. They provide the key to the modernization of U.S. forces, and they help ensure that the United States maintains a qualitative advantage over potential adversaries. At the same time, these systems produce economic benefits for the country and enable the United States to attain competitive advantages in weapon development and production costs.

The decade of the 1990s will pose ever-increasing challenges to U.S. R&D programs and products. The Soviets have greatly increased their technological capabilities through vast expenditures on research and development, and through purchasing or otherwise acquiring advanced technology from the West. The qualitative improvements this has brought to Soviet forces are evident in numerous weapon systems, from quieter submarines to high-performance fighters with all-weather and "look-down/shoot-down" capabilities.

These challenges have arisen at a time when the U.S. R&D base has been affected by a downward trend in the number of firms and organizations capable of maintaining technological leads in fields with important military applications. The United States also has increased its reliance on other countries for critical materials and products, increasing the risk that these resources may not be available when the United States needs them. To meet these challenges in the 1990s, the Department of Defense will continue to improve and streamline all aspects of the R&D process, while maintaining a strong, cooperative relationship with American industry.

The Science and Technology (S&T) Program

U.S. defense policy has traditionally called for maintaining qualitatively superior forces to offset the disadvantage of numerally superior opposing forces. This concept requires the maintenance of a technology lead over potential adversaries and the industrial capacity to translate evolving technologies into useful military applications. The S&T Program, consisting of basic research, exploratory development, and advanced technology development efforts, is providing the United States with technical options that can be used to develop effective military strategies and the equipment with which to implement them.

A strong research program accomplished by a government laboratory-industry-university team ensures that the United States will be adept at incorporating scientific advances into military systems and at countering any technological surprises that might occur. Accordingly, DoD research programs exploit new breakthroughs in the fields of mathematics, computer science, chemistry, physics, electronics, geophysics, meteorology, oceanography, biology, medicine, and related disciplines. These efforts are focused on the development of advanced technologies with potentially significant military applications.

Technological advantage is a perishable commodity, and it must be constantly nurtured and protected because of continuing advances by our competitors and illegal transfers. The United States can maintain its technological lead through investments in critical technologies such as microelectronics, software, directed energy, robotics, materials, and propulsion. These technologies form the core of future capabilities in antisubmarine, electronic, and strategic warfare; low-intensity conflict; special operations; and other military missions.

Electronics and electronics-related developments are a major part of the S&T program. Microelectronic devices of less than a micron in size are being developed. Radiation-hardened gallium arsenide integrated circuits will give increased levels of protection against nuclear effects at higher computer operating speeds.

The Defense Advanced Research Projects Agency (DARPA)

DARPA is the Department of Defense's central research organization chartered with investigating and developing new and imaginative technologies of potentially significant military utility. DARPA's programs focus on basic research, technology development, and both technology and system-concept demonstrations of revolutionary approaches.

Under the Strategic Computing Program, DARPA is developing supercomputer technologies aimed at meeting DoD's needs for high-performance processing for antisubmarine warfare, battle management, intelligence analysis, aerodynamic design, and "smart weapons" applications.

DARPA also is devoting considerable attention to the development of advanced software technologies, which are increasingly central to the design and operation of weapon systems. The Software Technology for Adaptable and Reliable Systems Program is an industry-based effort under which advanced tools are being developed for software specification and design; rapid prototyping, production, and refinement; testing and documentation; and maintenance. These information processing technologies will be applied to the development of advanced information systems for defense. Systems development will also be improved through a new generation of very low cost man-in-the-loop weapon system simulators connected to thousands of other such simulators at dozens of sites using a low cost communications network. This will provide high-payoff training to enhance readiness of active duty and reserve forces at low cost; and allow weapon systems concept evaluation for improved procurement.

The DARPA Advanced Space Technology Program is defining, developing, and demonstrating advanced high-payoff technologies that could improve space system support for military operations while helping to ensure the continued availability of space assets in wartime. The program is aimed at fulfilling three major goals: enhancing military access to space and reducing the cost of space systems; decreasing the vulnerabilities of space systems to natural phenomena and hostile action; and improving the utility of space systems, especially for tactical forces.

Test and Evaluation (T&E)

Testing remains a critical and essential element of the weapons acquisition process. The entire T&E community is dedicated to providing accurate and sufficient test data in support of acquisition decisions. As part of that effort, increased emphasis is being placed on acquiring needed improvements in test ranges, targets, and instrumentation. Meanwhile, the acquisition community is actively committed to T&E planning, including live-fire testing. Future efforts will seek to inject innovative methods and techniques into these processes as a means of minimizing testing time and costs, while increasing the objectivity and timeliness of the system evaluations that support the acquisition process.

The Defense Nuclear Agency (DNA)

DNA is chartered with conducting research and experiments to quantify the effectiveness of U.S. nuclear weapons and to ensure the survivability of U.S. military forces in a nuclear environment. The survivability of each remaining asset becomes more important with each reduction in the number of weapons in the U.S. arsenal. Not only must survivability be addressed, but system effectiveness against an increasingly hardened threat must receive attention on a priority basis.

DNA conducts the research necessary to develop and evaluate technologies, design concepts, and techniques that could reduce the vulnerability of U.S. forces and weapons to radiation, thermal, and blast damage. This applies to the full spectrum of mission-critical elements, from vulnerable human operators to relatively invulnerable force structure elements such as reentry vehicles and Army tanks. Conversely, DNA must conduct the research and testing necessary to ensure that U.S. strategic nuclear capabilities are maintained against a target base that is becoming increasingly harder and more sophisticated. Strategic nuclear weapon systems and critical theater/tactical weapons must be capable of surviving and operating in a nuclear environment if they are to provide meaningful military response options.

DNA fulfills a critical role in providing data crucial to the developers and potential users of major weapon systems. Its role in addressing the full spectrum of nuclear-related aspects of the defense mission is becoming increasingly important as agreements are reached that reduce the number of weapons required to maintain our strategic nuclear deterrent. DNA is responsible for the work necessary to ensure both that U.S. weapons and forces could survive in a nuclear environment and that they are effective in accomplishing their missions.

The Defense Department accomplished a great deal in the field of research and development during the past decade. The 1990s pose different challenges. The explosive growth in new technologies will make the threat even more complex and potentially more dangerous. We can overcome these challenges with deployment of effective weapon systems, provided that well-planned and energetic R&D programs lay the foundation now for progress in the coming decade and the 21st century.

Part V
Statutory Reports

REPORT OF THE SECRETARY OF THE ARMY

The Army's accomplishments in operational and management areas were significant during the past year. We conducted a variety of planned and contingency operations around the world in support of U.S. national military strategy. We also made important strides in improving the efficiency and effectiveness of our use of the resources entrusted to us.

Operational Accomplishments

In addition to attaining record levels of combat readiness throughout the Total Army, in the United States as well as abroad, we participated in a wide variety of successful operations that spanned the range of our roles and missions. The most significant of these was our participation in Operation Just Cause in Panama. This was a very successful demonstration of the Army's rapid response capabilities. Just Cause was the most complex contingency deployment and employment of U.S. forces since World War II; yet soldiers were on the ground in Panama within 60 hours of the Presidential decision to deploy, with a total of over 12,000 introduced within the following 12 hours. The operation demonstrated the Army's ability to generate the appropriate combination of forces for any contingency. Troops came from a number of different units — both forward deployed and contingency forces — and consisted of a balanced mix of heavy, light, and special operations forces. The complexity of the operation — airborne, air assault, and day and night combat — was a real test of unit leadership and training, and its success was a tribute to the courage and sense of duty of our soldiers.

In numerous other planned and emergency deployment exercises, Army units trained to maintain this capability to respond to any contingency with a mix of forces. We also participated in other operations, including support to international peacekeeping efforts, operations to protect shipping in the Persian Gulf, disaster relief, and illicit drug traffic interdiction. Additionally, we played a major role in implementing the INF Treaty. We began the elimination of Pershing missiles at the three destruction sites run by the Army, and Army personnel participated in inspections of Soviet destruction activities.

The most important element contributing to our operational accomplishments was the quality of our soldiers and civilians. Over 60 percent of the soldiers entering the Army last year scored in the upper half of standardized tests, and over 90 percent were high school graduates. Moreover, the Army was successful at retaining quality soldiers in record numbers, surpassing reenlistment goals by over 10 percent. Our civilian work force was equally successful in attracting and retaining the highest quality men and women. Quality people give our organizations a level of effectiveness and versatility that is crucial to the success of our relatively small force in accomplishing its worldwide roles and mission.

In force structure, modernization, and training the Army also made important strides that directly enhanced our ability to meet U.S. defense requirements. To improve Army support throughout the Pacific theater, we completed plans to convert our Western Command in Hawaii to the U.S. Army Pacific Command. We activated five aviation attack group headquarters and four attack helicopter battalions in the Army National Guard, two attack helicopter battalions in the U.S. Army Reserve, and the remaining units of the 10th Mountain Division. To meet required reductions in Active force end strength while retaining necessary combat capabilities, we deactivated a brigade of the 4th Infantry Division (Mech) and designated an Army National Guard brigade to replace it in the division. The Army continued fielding the most modern systems to those units in the active and reserve components that need them first in combat, to include two additional Apache attack helicopter battalions in Europe. We also added modernization master plans for tactical wheeled vehicles and armor-antiarmor systems to the family of plans that guide our current modernization efforts and promulgated the Army Technology Base Master Plan to guide our R&D in shaping the Army of the future.

Army training — the cornerstone of readiness because it melds people, equipment, units, and leaders into effective combat teams in the most realistic possible field environments — achieved a significant level of success in preparing our soldiers, civilians, and leaders for their wartime and peacetime missions. We opened the Com-

bat Maneuver Training Center in Germany, expanded the National Training Center in California, continued to develop the Joint Readiness Training Center in Arkansas, and emphasized worldwide training exercises that integrated appropriate elements of our heavy, light, and special operations forces with sister services and allies. Through the Reserve Components Training Strategy, we have formalized our approach to training the reserve components. The Reserve Components Training Development Action Plan, designed to improve soldier, leader, and unit training, is in the process of being implemented. The quality of our people and the effectiveness of our training were evident in the victory of Army teams and individual aviators in the 1989 World Helicopter Championships. We have also been successful in training safely. Despite the increasing complexity of Army weapons and equipment, there has been an encouraging reduction in overall accident trends and fatalities. We are institutionalizing civilian training through the Army Civilian Training, Education, and Development System that sets training standards through progressive and sequential training plans for over 98,000 civilians in 24 career fields.

The effectiveness of the present-day Army, and its legacy for the future, are functions of the quality of its military and civilian leaders. Leader development in the Army — which includes formal education and training, progressive experiences in organizations, and self-development opportunities — made significant advances this past year. We completed in-depth studies and began implementation of a broad range of enhancements to our officer and NCO leader development systems. These improvements included establishing a Leader Development Support System to oversee and coordinate leader development activities throughout the Total Army and upgrading the coverage of Air-Land Battle doctrine in our precommand courses. Similarly, we continued the expansion of the Army Management Staff College, which is an essential component of the Army's Civilian Training, Education, and Development System.

Management Accomplishments

In all management areas the Army made concerted efforts in the past year to improve its operations. The actions we took resulted in better use of available resources, including people, time, facilities, materials, and funds.

The Army refined its three-tiered acquisition organization, learning from its second full year of streamlined operations under the new Army Acquisition Executive — Program Executive Officer (PEO) — Project Manager structure. This experience was invaluable in allowing us to define more precisely our PEO requirements and, as a result, we reduced the number of PEOs from 22 to 13.

Personnel management also advanced. We made full use of formal institutions including the senior service colleges, the Defense Systems Management College, the Army Logistics Management College, and the Army Management Staff College mentioned above to expand the professional and leadership competence of civilian and military managers. We have begun testing the integration of civilians into the Army Personnel Proponent System, which will allow us to manage their careers more effectively while progressively developing their knowledge and skills.

In the financial management area, our automation enhancements significantly improved pay services to soldiers and civilians. We also achieved very favorable results in a pilot program to improve efficiency by giving installation commanders control of their civilian personnel budgets and the authority for position classification and, consequently, will expand the program in the future.

The Army has taken several initiatives to expand access to our direct health care system while reducing reliance on CHAMPUS to control costs. One particularly notable program provides CHAMPUS funds to selected medical treatment facility commanders who exercise responsibility for all care in their geographical area whether in their facility or in the civilian community.

The Army streamlined some of its production and sustainment functions during the past year. Our commercial activities initiative produced savings in terms of cost avoidance and reduced civilian and military space requirements. We began the implementation of Total Quality Management principles that we expect to yield significant enhancements in quality while reducing resource requirements and management time.

The Army made significant progress in the installation management area. Base realignment and closure planning is under way to ensure prompt and efficient implementation of approved recom-

mendations on the more than 120 Army installations affected. With our Army Communities of Excellence program, we have helped installation commanders find low-cost, self-help projects which provide timely and worthwhile improvements in living and working conditions. Excellent communities play a vital role not only in mission accomplishment but also in retention of the quality soldiers and civilians that are the hallmark of today's Army. We remain committed to providing our soldiers and families a quality of life equal to that enjoyed by those they defend.

Emphasis on environmental improvement and conservation remains a major Army effort. We

completed contamination cleanup at 20 Army sites and made significant progress at an additional 350. Army leaders created aggressive compliance and environmental awareness at all levels of command, as evidenced by the Army's receipt of this year's Secretary of Defense Environmental Quality Award.

We realize that embedding excellence through efficiency and the execution of effective programs is a continuing process. In both operational and management areas we are proud of our accomplishments this past year. We will strive to improve on these accomplishments in the coming years.



Michael P. W. Stone
Secretary of the Army

REPORT OF THE SECRETARY OF THE NAVY

The Department of the Navy procures and maintains the forces needed to fulfill its missions of strategic deterrence, power projection, sea control, and strategic lift. In day-to-day operations, globally deployed units of the Navy and Marine Corps confer upon the United States a unique ability to affect world events in support of our national objectives of peace and freedom.

U.S. and Soviet navies last year hosted a meeting between President George Bush and General Secretary Mikhail Gorbachev in the Mediterranean Sea. Fostering improved East-West relations, the two navies also concluded an historic exchange of port visits. Three Soviet ships, including the Slava-class cruiser Marshal Ustinov, visited Norfolk, Virginia in July. In August, USS Thomas S. Gates (CG 51) and USS Kauffman (FFG 59) made a port call in Sevastopol. In another historic exchange, the Chinese training ship Zheng He visited Hawaii in April. During a reciprocal visit in May, even as events in Beijing unfolded, USS Blue Ridge (LCC 19), USS Sterett (CG 31), and USS Rodney M. Davis (FFG 60) were welcomed warmly in Shanghai, in the first visit to that city by U.S. Navy ships since 1946.

Fleet commanders last year expanded their drug interdiction efforts, with more than 2,200 ship steaming days and 9,000 aircraft flight hours dedicated to surveillance and tracking of drug traffic long before it can reach U.S. shores. In October, these efforts resulted in USS Blakely's (FF 1072) participation in the 110th combined Navy-Coast Guard drug seizure. Marines initiated anti-drug support for civilian law enforcement agencies in the southwest United States. On the opposite side of the globe, Navy ships of the Joint Task Force Middle East continue to monitor U.S. Flag vessels in the Persian Gulf shipping lanes, acting as a force for stability in that area, now the scene of an uncertain peace. Marine forces completed their Persian Gulf Mobile Seabase operations. Aircraft carrier battle groups and Marine Expeditionary Units responded to several other pressing contingencies in the past year, including the hostage crisis in Lebanon and events in Panama. U.S. ballistic missile submarines, the most cost-effective and survivable leg of the strategic triad, conducted more than 100 deterrent patrols.

Sailors and Marines aided in the recovery efforts following the San Francisco earthquake, and assisted the victims of Hurricane Hugo in Puerto Rico, the U.S. Virgin Islands, and South Carolina. Navy amphibious ships with embarked Marines and oil recovery craft assisted in cleanup operations in Alaskan waters following a tanker accident in Prince William Sound. Also in the past year, Navy ships rescued more than 250 refugees in the South China Sea.

Despite the constant tempo of operations worldwide, funding for Navy and Marine Corps programs remains below that for any fiscal year since 1984. Budget austerity has resulted in the termination of several programs, the transfer of several ships to the Naval Reserve Force, and in the early retirement of several older ships, such as USS Coral Sea (CV 43), to be decommissioned in April 1990. The Marine Corps likewise has cut three infantry battalions, and transferred several active support units to the reserves. Navy battle forces overall will continue to decline in number, from a strength of 567 ships in FY 1989 to a fleet of 556 in FY 1990.

In FY 1989, 21 ships were added to the fleet, 17 ships were retired, and 4 ships transferred to the Naval Reserve. New commissionings included USS Wasp (LHD 1), the first of a new class of amphibious assault ships, two Trident ballistic missile submarines, two Aegis guided missile cruisers, two Los Angeles-class attack submarines, a Whidbey Island-class LSD and two mine countermeasure ships. With funds appropriated for FY 1989 the Department of the Navy initiated procurement for 207 aircraft and 22 ships. Funding for FY 1990 will support a buy of 140 aircraft and 17 ships.

The Department of the Navy's major programs include development of the new Seawolf class of nuclear-powered attack submarines, the Trident D-5 submarine-launched ballistic missile, and the new class of Aegis-equipped destroyers. The lead ship of this class, Arleigh Burke (DDG-51), was launched in September 1989. The Department of the Navy is the lead agency for several key developmental programs with multi-service applications, including the new stealth A-12 attack aircraft, and the Long-Range Conventional Standoff Weapon. Marine Corps developmental programs

are sharpening the Corps' ability to sustain rapid, "over the horizon" expeditionary operations.

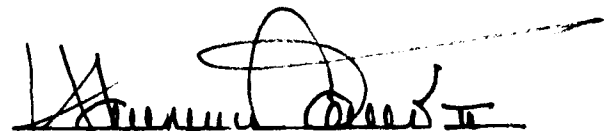
The Department of the Navy's highest budget priority is sustaining the high quality of our sailors and marines. Only through their efforts can our advanced technology, training, tactics, and strategy succeed. The many factors affecting their quality of life are at the center of our attention as we accommodate successive decrements in overall funding. Foremost, the Department of the Navy stands by its commitment to enhance the compensation of its personnel and to adhere to realistic limitations on the operating tempo of our deployed ships, squadrons, and Fleet Marine Forces. We have supported essential upgrades in government-provided family housing and child care, and endorse measures aimed at reducing the out-of-pocket expenses incurred by our members living in the private sector. Navy medical facilities were placed last year under the authority of base and station commanders in order to enhance their responsiveness to the fleet's health care needs.

Our ability to support U.S. national security objectives in the future rests on today's program of research and development. The Department of the Navy's R&D efforts focus on technologies with the greatest potential for improving combat capability in each warfare area. The Navy's top warfare priority is antisubmarine warfare, supported by several programs, including development of the new Seawolf-class attack submarine, the new P-7 antisubmarine patrol aircraft, shipboard sonar upgrades, and a concentrated program of research. Advances in airframe materials and electronics will provide opportunities in stealth, performance, and cost reduction of missiles and aircraft. We are

striving to bring new ideas for ship hull forms, propulsion, and integrated weapons systems out of the labs and into the fleet, and to manage that process in a cost-effective manner.

The Department of the Navy has adopted cost saving management techniques such as Total Quality Management and competition wherever practicable. FY 1989 marked the first year in recent history that all shipbuilding contracts were awarded competitively. For the seventh consecutive year, the Navy has increased the percentage of competitive awards both in terms of dollars and contract actions. About 59 percent of the dollars obligated and more than 93 percent of the Department's contract actions were awarded competitively.

The Department of the Navy has fulfilled requirements of the Defense Management Review by assigning sole responsibility for research, development, and acquisition functions to a newly established Assistant Secretary of the Navy, ASN(RD&A). Program Executive Officers and system commands will report directly to this new acquisition executive, providing for streamlined oversight of the acquisition process. We are establishing a dedicated corps of officer and civilian specialists in acquisition management. Matters pertaining to military requirements and to test and evaluation have been delegated to the Chief of Naval Operations and the Commandant of the Marine Corps. The importance of environmental issues is recognized in the establishment of a new Assistant Secretary of the Navy (Installations and Environment), and in the Department of the Navy's program to reduce hazardous waste generation by 50 percent by the end of 1992.



H. Lawrence Garrett, III
Secretary of the Navy

REPORT OF THE SECRETARY OF THE AIR FORCE

The Air Force stands on the threshold of the 1990s organized, trained, and equipped to support national security objectives while responding to the challenges of significant fiscal constraints and geopolitical shifts. The Air Force has pursued a balanced approach to underwriting national defense, emphasizing high-quality people and decentralized management, leveraging its investments through readiness, upgrades, and modernization. In doing so, the Air Force has prepared for the future while meeting its vital day-to-day objectives.

Recruiting, retaining, and motivating high-quality people, providing the needed training and professional skills, ensuring their adequate compensation, and protecting their health and safety has been our highest priority. Our recruiting and retention efforts met with significant success — for example, 99 percent of our recruits were high school graduates — and innovative programs were targeted at the retention of important specialties, such as pilots and physicians. More remains to be done. Our safety efforts in FY 89 resulted in the best ground safety record in history, and the third best flying safety record.

The Air Force participated fully in the review process leading to the Defense Management Report to the President (DMR) and is aggressively streamlining our management processes. Taking on the challenge of creating our own real growth, we are dedicated to eliminating non-value added activities Air Force-wide. Over 400 ideas have been generated by Air Force people, with over 40 selected for the first phase of DMR implementation — including a major effort to streamline Air Force Logistics Command, Air Force Systems Command, and Air Force Communications Command. Improving the system acquisition process has been a major focus of Air Force DMR implementation. Improving our Program Management Directives and developing the complementary Acquisition Program Baseline and Acquisition Information System represent a three-pillared management initiative to streamline authority and responsibility while preserving maximum flexibility for program execution.

The Air Force maintains its combat capability in the face of budget constraints by focusing on readiness, modifications to existing systems, and force

modernization. Air Force readiness has steadily improved over the last nine years and stabilized at FY 87-FY 88 levels — an all-time high. To maintain that vital readiness, we have accepted force reductions of 32 squadrons and more than 31,000 people over the last five years, deferred facility improvements, and reduced the modernization pace. Although decreases in sustainability investment are a reality, progress in reducing sustainment costs has allowed us to hold the line.

Strategic forces have been a high priority as nuclear deterrence remains the cornerstone of our national military strategy. The revolutionary B-2 has successfully completed initial test flights. The B-1 continues to mature and meet its strategic commitments, and the Peacekeeper achieved full operational capability in Minuteman silos after the most successful ICBM developmental test program in history. Research and development on the Advanced Cruise Missile, Small ICBM, and Rail Garrison basing for Peacekeeper are progressing well.

Modernizing tactical airpower is also a high priority. Investments in system modifications and upgrades will have long-term payoffs in improved combat power. The fielding of the LANTIRN on the F-15E and the Block 40 F-16s will provide significant night, adverse weather capability. The unveiling of the F-117A reflects technology development that will achieve orders of magnitude improvements in combat capability in the Advanced Tactical Fighter, now in research and development.

Our investments in power-projection forces enhance our flexibility and ability to support forward defense. The B-52 added another dimension, acquiring a precision standoff conventional capability. We accepted delivery of the last C-5B, completing that program ahead of schedule and under cost, and expanded the Civil Reserve Air Fleet. Delivery of the last KC-10 and continued re-engining of the KC-135 enhanced our global reach. And assembly began on the first of the next generation of airlifters, the C-17.

The Air Force has emphasized integrating space into every mission area, establishing an Assistant Secretary of the Air Force (Space) to manage space activities and integrate space with terrestrial forces. Our mixed-fleet launch strategy provided versatile,

robust, assured access to space with several expendable launch vehicle programs. We successfully launched the Titan IV and the Delta II, which carried the first operational Global Positioning System satellites into space.

Closer to earth, the Air Force also recognized the increasing importance of special operations, establishing two new special operations wings — one in Europe and one in the Pacific.

The Air Force launched new activities in support of the President's national strategy to combat the threat to our national security posed by narcotics. Air Force people, aircraft, radars, and equipment are working with law enforcement agencies and our allies to slow the flow of drugs.

While underwriting deterrence with increased capabilities, the Air Force responded to

contingencies and disasters around the world. We deployed forces to Panama to protect Americans there and lifted UN peacekeeping forces to Namibia. We also provided humanitarian airlift of approximately 7,500 tons of badly needed supplies and equipment following earthquakes and hurricanes — ranging from the Caribbean to Armenia. And while, tragically, the most publicized search and rescue mission of the year — that for Congressman Mickey Leland and his party — found them not alive, Air Force Rescue and aeromedical evacuation forces recorded hundreds of saves in FY 1989.

The 1990s will be challenging. International dynamics and budgetary constraints will continue to apply pressure. As they do, the Air Force will assume an even more important role in national defense owing to the inherent flexibility, global reach, and lethality of airpower.



Donald B. Rice
Secretary of the Air Force

REPORT OF THE CHAIRMAN OF THE RESERVE FORCES POLICY BOARD

It is an honor for me to serve as Chairman of the Reserve Forces Policy Board (Board) which, acting through the Assistant Secretary of Defense for Reserve Affairs, is by statute, the "principal policy adviser to the Secretary of Defense on matters relating to the reserve components" (10 USC 175(c)). In this position I follow my friend Will Hill Tankersley. He is a distinguished businessman, soldier and former Department of Defense official. Under his able leadership, the Board has made many significant contributions to our National Security.

The importance of our nation's reserve components cannot be over emphasized. My service as Secretary of the Army for over eight and one-half years, combined with my earlier service in the National Guard and Army Reserve, have convinced me that in today's world environment the importance of our reserve components will increase. This is especially true in view of the budget constraints with which we are faced.

The Total Force Policy was promulgated in 1973. As implemented, it has brought great change and success to the reserve components. The reserve components today are full partners with the active components. There are no major operational plans that could be executed without the reserve components. The challenges of low intensity conflict around the world will require additional focus on the capabilities of reserve component special operations units and personnel. The Selected Reserve makes up 35 percent of the Total Force. This ranges from a high of over 50 percent in the Army to 18 percent in the Marine Corps. Today's National Guard and Reserve units are composed of higher quality personnel, are being more effectively trained, and have more modern equipment. They are better prepared than ever to perform their vital missions. The support of the American people, the Administration, the Congress and the services has made this possible. Challenges still exist in the areas of personnel, training, equipment, and facilities which are essential to achieving required readiness and they will be detailed in the Board's upcoming report.

Recruiting and retention efforts of the reserve components have been successful in attracting and keeping high-quality individuals. The Montgomery GI Bill and various bonus programs have

contributed greatly to this effort. Recruiting is likely to become more difficult due to a shrinking pool of young men eligible for military service. The increasing number of women serving in the reserve components is helping to alleviate this problem. Since 1981, the number of women in the Selected Reserve has increased by 75 percent. Women now comprise about 12 percent of the Selected Reserve and 13 percent of the Individual Ready Reserve.

The most significant training detractor for reserve component personnel is time available to train. Sufficient full-time support personnel and automation should be provided to perform many of the peacetime administrative functions now being handled by drilling members of the National Guard and Reserve. This would allow them to devote more of their time to training.

In addition to paid drills, most reserve forces' leaders, commissioned and noncommissioned, spend a tremendous amount of time working at their units on administration, logistics, and training. In recent years, administration and readiness requirements have increased enormously. National Guard and Reserve leaders — who usually have demanding careers in civilian life and young families — are feeling considerable pressure from employers and families to get out of the reserve components. If they must choose between their civilian vocation and their families or their military avocation, the choice they will make is very certain.

We cannot afford to lose these National Guard and Reserve leaders who are essential if the Total Force is to be effective. Therefore, it is critical that unreasonable demands on their time be reduced. This can be achieved either by eliminating some of the requirements, which may be impossible if units are to be in a high state of readiness, or by providing sufficient full-time support personnel and automation to fulfill the requirements.

Policies pertaining to appointment, retention, promotion, and retirement of reserve component officers are addressed in the Reserve Officer Personnel Management Act. Passage of this legislation is important.

Overseas Deployment Training (ODT), and training with wartime gaining commands, provides

some of the most effective training available for the reserve components. Preparation for and execution of ODT closely parallels actual mobilization and deployment. Civic action and technical assistance to friendly nations, in conjunction with ODT, supports foreign policy and increases United States stature abroad. Morale and retention is increased and the ability of the United States to effectively execute its forward defense strategy is demonstrated. In FY 1989, 88,500 reserve component personnel trained in 96 foreign countries. The importance of ODT will increase if additional missions are transferred to the reserve components and United States forces are reduced overseas.

Department of Defense policy is to equip first those units that will deploy first. This policy, which was first recommended by the Board, has resulted in substantial amounts of modern equipment going to the reserve components. This has significantly increased readiness. Although excellent progress has been made in equipping National Guard and Reserve units, the shortfall of equipment on-hand versus wartime requirements was over \$14 billion at the end of FY 1989.

It is important to national security that our National Guardsmen and Reservists be ready and fit to fight on a complex and unforgiving modern battlefield. I am convinced that every member of the reserve components must be physically fit prior to mobilization. This requirement can only be satisfied by strong leadership, and individual effort. History has proven that a force that is fit and ready is less likely to have to fight.

I do have two concerns about reserve component force structure and budget issues:

First, the reserve components provide a cost-effective means for augmenting the active forces and maintaining a strong deterrence.

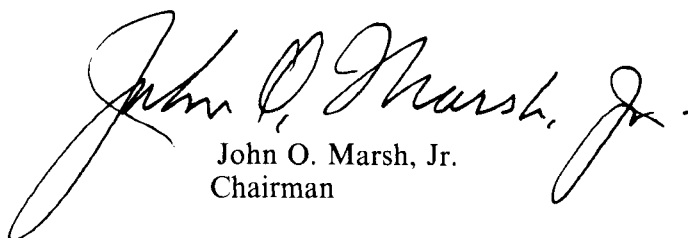
Recognizing this, budget makers are likely to try to save dollars, while maintaining capability, by transferring more missions from the active to the reserve components. The reserve components stand ready to accept additional responsibilities. However, the added missions and force structure must be adequately resourced, and they must be of the type that are supportable within the parameters of reserve component recruiting, retention, and training. It must be remembered that reserve component units are expected to maintain readiness in less than 20 percent of the time available to active component units. To demand more could adversely impact recruiting and retention. To allow less would hurt readiness.

My second concern is the tendency to think of "equal share" reductions when budget cuts are required. If budget reductions for the reserve components become necessary, they should not automatically be on an equal basis with the active component. "Equal share" budget reductions ignore fundamental differences between the active and reserve components, and are particularly inappropriate at a time when additional missions and force structure are being given to the reserve components.

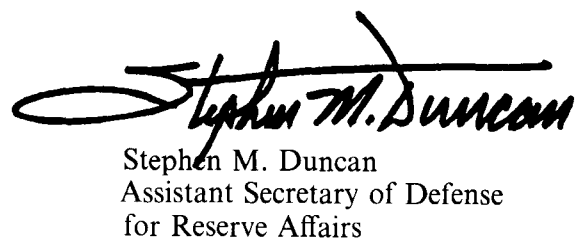
The Total Force Policy is indeed the nation's shield. It is a sound concept that has made it possible for the United States to have an adequate defense at a reasonable cost. Today's reserve components are of high quality, well-equipped, well-trained, and ready to deploy. The Reserve Forces Policy Board stands ready to assist in developing and reviewing policies which will maintain and enhance reserve component readiness.

The Board's Annual Report is scheduled for publication in March 1990 and will provide a comprehensive report on reserve component programs.

Forwarded to the
Secretary of Defense



John O. Marsh, Jr.
Chairman



Stephen M. Duncan
Assistant Secretary of Defense
for Reserve Affairs

Appendix A

Department of Defense — Budget Authority by Appropriation^a
(Dollars in Millions)

Table A-1

	FY 1984	FY 1985	FY 1986 ^b	FY 1987	FY 1988	FY 1989	FY 1990	FY 1991
Current Dollars								
Military Personnel	48,363	67,773	67,794	74,010	76,584	78,477	78,548	79,054
Retired Pay	16,503	*	*	*	*	*	*	*
Operations & Maintenance	70,950	77,803	74,888	79,607	81,629	86,221	86,761	90,092
Procurement	86,161	96,842	92,506	80,234	80,053	79,390	82,561	77,855
Research, Development, Test and Evaluation (RDT&E)	26,867	31,327	33,609	35,644	36,521	37,530	36,809	37,972
Military Construction	4,510	5,517	5,281	5,093	5,349	5,738	5,266	5,578
Family Housing	2,669	2,890	2,803	3,075	3,199	3,276	3,221	3,458
Special Foreign Currency Program	3	9	2	4				
Defense-wide Contingency Revolving & Management Funds	2,774	5,088	5,235	2,612	1,246	897	-769	-300
Trust & Receipts	-628	-426	-707	-781	-801	-668	-999	-776
Deduct, Intragovt Receipt	-22	-21	-22	-28	-26	-25	-28	-29
Total, Current \$	258,150	286,802	281,390	279,469	283,755	290,837	291,369	295,131
Constant FY 1991 Dollars								
Military Personnel	63,155	80,110	77,261	82,442	82,100	81,460	81,142	79,054
Retired Pay	20,872	*	*	*	*	*	*	*
Operations & Maintenance	88,314	94,934	90,434	93,034	92,451	93,680	90,885	90,092
Procurement	110,696	120,712	111,707	93,481	89,698	85,559	85,627	77,855
RDT&E	34,311	38,819	40,562	41,706	41,198	40,653	38,306	37,972
Military Construction	5,820	6,905	6,423	5,973	6,021	6,203	5,469	5,578
Family Housing	3,355	3,535	3,349	3,576	3,604	3,546	3,356	3,458
Special Foreign Currency Program	4	11	2	4				
Defense-wide Contingency Revolving & Management Funds	3,522	6,248	6,253	3,037	1,407	972	-801	-300
Trust & Receipts	-798	-523	-844	-908	-904	-723	-1,041	-776
Deduct, Intragovt Receipt	-28	-26	-26	-33	-30	-28	-30	-29
Total, Constant \$	329,224	350,724	335,123	322,311	315,546	311,324	302,915	295,131
% Real Growth								
Military Personnel	1.2	26.8	-3.6	6.7	-0.4	-0.8	-0.4	-2.6
Retired Pay	-1.2	-100.0	0.0	0.0	0.0	0.0	0.0	0.0
Operations & Maintenance	5.2	7.5	-4.7	2.9	-0.6	1.3	-3.0	-0.9
Procurement	3.8	9.0	-7.5	-16.3	-4.0	-4.6	0.1	-9.1
RDT&E	13.6	13.1	4.5	2.8	-1.2	-1.3	-5.8	-0.9
Military Construction	-3.2	18.6	-7.0	-7.0	0.8	3.0	-11.8	2.0
Family Housing	-4.4	5.4	-5.2	6.8	0.8	-1.6	-5.4	3.0
Total	4.6	6.5	-4.4	-3.8	-2.1	-1.3	-2.7	-2.6

^a Numbers may not add to totals due to rounding.

^b Lower Budget Authority in the Military Personnel Accounts in FY 1986 reflects the congressional direction to finance \$4.5 billion for the military pay raise and retirement accrual costs by transfers from prior year unobligated balances.

* Retired pay accrual included in Military Personnel appropriation.

Department of Defense — Budget Authority by Component^a
(Dollars in Millions)

Table A-2

	FY 1984	FY 1985	FY 1986 ^b	FY 1987	FY 1988	FY 1989	FY 1990	FY 1991
Current Dollars								
Army	62,181	74,270*	73,128*	73,984*	75,813*	78,079*	77,606*	75,798*
Navy	82,088	99,015*	96,113*	93,500*	100,281*	97,675*	99,609*	99,484*
Air Force	86,108	99,420*	94,870*	91,624*	88,324*	94,685*	92,944*	94,817*
Defense Agencies/OSD/JCS	10,746	13,126	15,520	19,195	17,021	18,154	17,855	21,175
Defense-wide	17,027	970	1,759	1,168	2,315	2,245	3,356	3,858
Total, Current \$	258,150	286,802	281,390	279,469	283,755	290,837	291,369	295,131
Constant FY 1991 Dollars								
Army	80,613	90,936*	86,997*	85,305*	83,959*	83,236*	80,557*	75,798*
Navy	104,583	121,238*	114,555*	107,752*	111,475*	104,511*	103,514*	99,484*
Air Force	108,512	120,836*	112,464*	105,289*	98,230*	101,442*	96,780*	94,817*
Defense Agencies/OSD/JCS	13,977	16,514	18,986	22,604	19,275	19,705	18,574	21,175
Defense-wide	21,540	1,200	2,120	1,362	2,608	2,429	3,490	3,858
Total, Constant \$	329,224	350,724	335,123	322,311	315,546	311,324	302,915	295,131
% Real Growth								
Army	4.2	12.8	-4.3	-1.9	-1.6	-0.9	-3.2	-5.9
Navy	-2.8	15.9	-5.5	-5.9	3.5	-6.2	-1.0	-3.9
Air Force	13.6	11.4	-6.9	-6.4	-6.7	3.3	-4.6	-2.0
Defense Agencies/OSD/JCS	11.8	18.2	15.0	19.1	-14.7	2.2	-5.7	14.0
Defense-wide	-1.8	-94.4	76.6	-35.8	91.5	-6.9	43.7	10.5
Total	4.6	6.5	-4.4	-3.8	-2.1	-1.3	-2.7	-2.6

^a Numbers may not add to totals due to rounding.^b Lower Budget Authority in the Military Personnel Accounts in FY 1986 reflects the congressional direction to finance \$4.5 billion for the military pay raise and retirement accrual costs by transfers from prior year unobligated balances.

* Includes Retired Pay accrual.

**Federal Budget Trends
(Dollars In Millions)**

Table A-3

Fiscal Year	Federal Outlays as a % of GNP	DoD Outlays as a % of Federal Outlays	DoD Outlays as a % of GNP	Non-DoD Outlays as a % of Federal Outlays	Non-DoD Outlays as a % of GNP	DoD Outlays as a % of Net Public Spending ^a
1950	16.0	27.5	4.4	72.5	11.6	17.9
1955	17.6	51.5	9.1	48.5	8.6	34.5
1960	18.2	45.0	8.2	55.0	10.0	28.8
1965	17.5	38.8	6.8	61.2	10.7	23.8
1970	19.8	39.4	7.8	60.6	12.0	23.6
1971	19.9	35.4	7.0	64.6	12.8	20.6
1972	20.0	32.6	6.5	67.4	13.5	18.8
1973	19.1	29.8	5.7	70.2	13.4	17.1
1974	19.0	28.8	5.5	71.2	13.5	16.6
1975	21.8	25.5	5.6	74.5	16.2	15.1
1976	21.9	23.6	5.2	76.4	16.7	14.0
1977	21.1	23.4	4.9	76.6	16.2	14.0
1978	21.1	22.5	4.7	77.5	16.4	13.6
1979	20.5	22.8	4.7	77.2	15.8	13.8
1980	22.2	22.5	5.0	77.5	17.2	13.8
1981	22.7	23.0	5.2	77.0	17.5	14.4
1982	23.7	24.5	5.8	75.5	17.9	15.5
1983	24.3	25.4	6.2	74.6	18.2	16.1
1984	23.1	25.9	6.0	74.1	17.1	16.3
1985	24.0	25.9	6.2	74.1	17.8	16.4
1986	23.6	26.8	6.3	73.2	17.3	16.6
1987	22.6	27.3	6.2	72.7	16.4	16.5
1988	22.3	26.5	5.9	73.5	16.3	16.0
1989	22.2	25.6	5.7	74.4	16.5	15.4
1990	21.8	24.0	5.2	76.0	16.6	14.3
1991	21.0	23.7	5.0	76.3	16.0	13.9

^a Federal, state, and local net spending excluding government enterprises (such as the postal service and public utilities) except for any support these activities receive from tax funds.

Defense Shares of Economic Aggregates

Table A-4

Fiscal Year	DoD as a Percentage of Public Employment		DoD as a Percentage of National Labor Force		National Income Accounts Percentage of Total Purchases		
	Federal	Federal State & Local	Direct Hire (DoD)	Including Industry	National Defense ^a	Total Federal	State & Local
1965	71.3	29.3	5.0	7.8	7.3	9.8	9.8
1966	73.0	30.6	5.6	9.0	7.5	10.0	10.0
1967	74.1	31.5	6.0	10.0	8.7	11.0	10.4
1968	74.0	31.3	6.1	10.0	9.0	11.4	10.8
1969	73.2	30.1	5.9	9.4	8.5	10.8	11.0
1970	72.3	27.7	5.3	8.1	7.9	10.1	11.4
1971	68.3	24.3	4.6	7.0	7.1	9.3	12.0
1972	66.0	21.5	4.0	6.2	6.6	9.0	12.0
1973	65.0	20.4	3.7	5.8	6.0	8.2	11.8
1974	63.8	19.4	3.5	5.5	5.6	7.7	12.0
1975	62.9	18.6	3.4	5.3	5.7	8.1	12.8
1976	62.5	18.1	3.3	5.0	5.4	7.8	12.7
1977	62.5	17.5	3.2	5.0	5.1	7.6	11.9
1978	61.9	17.0	3.1	4.8	4.9	7.3	11.8
1979	61.1	16.5	2.9	4.7	4.8	7.1	11.5
1980	61.3	16.5	2.8	4.7	5.1	7.5	11.8
1981	62.4	17.1	2.8	4.7	5.4	7.8	11.4
1982	63.2	17.4	2.8	4.9	6.0	8.4	11.5
1983	63.5	17.6	2.9	5.1	6.3	8.7	11.6
1984	63.5	17.6	2.8	5.3	6.2	8.1	11.2
1985	63.3	17.5	2.9	5.5	6.4	8.7	11.5
1986	63.2	17.2	2.8	5.6	6.6	8.8	11.8
1987	62.9	17.1	2.8	5.6	6.6	8.5	12.1
1988	61.8	16.5	2.7	5.4	6.2	7.8	12.0
1989	61.5	16.0	2.6	5.3	5.9	7.8	12.1

^a Includes Department of Defense — military, atomic energy defense activities, and other defense-related activities, such as emergency management and maintenance of strategic stockpiles and the Selective Service System.

Appendix B

Military and Civilian Personnel Strength^a
(End Fiscal Year — In Thousands)

Table B-1

	Actual										Programmed	
	FY 1980	FY 1981	FY 1982	FY 1983	FY 1984	FY 1985	FY 1986	FY 1987	FY 1988	FY 1989	FY 1990	FY 1991
Active Component Military												
Army	777	781	780	780	780	781	781	781	772	770	744	728
Navy	527	540	553	557	565	571	581	587	593	593	591	585
Marine Corps	189	191	192	194	196	198	199	199	197	197	197	197
Air Force	562	575	588	597	597	601	608	607	576	571	545	530
Total	2,055	2,087	2,113	2,128	2,138	2,151	2,169	2,174	2,138	2,131	2,077	2,040
Reserve Component Military (Selected Reserve)												
ARNG	366.6	389.0	407.6	417.2	434.3	440.0	446.2	451.9	455.2	457.0	447.3	447.3
Army Reserve	213.2	232.0	256.7	266.2	275.1	292.1	309.7	313.6	312.8	319.2	309.2	309.2
Naval Reserve	97.1	98.3	104.8	109.1	120.6	129.8	141.5	148.1	149.5	151.2	153.4	149.7
MC Reserve	35.7	37.3	40.5	42.7	40.6	41.6	41.6	42.3	43.6	43.6	44.0	43.9
ANG	96.3	98.3	100.6	102.2	105.0	27.3	112.6	114.6	115.2	116.1	116.2	116.3
Air Force Reserve	59.8	62.3	64.4	67.2	70.3	75.2	78.5	80.4	82.1	83.2	84.9	85.2
Total	868.7	917.2	974.6	1004.6	1045.9	1006.0	1130.1	1150.9	1158.4	1170.6	1155.0	1151.6
Direct Hire Civilian												
Army ^b	312	318	321	332	343	359	353	358	337	347	334	334
Navy	298	310	309	328	332	343	332	343	337	343	337	330
Air Force ^b	231	233	235	238	240	250	250	252	241	249	249	246
Defense Agencies	75	79	80	82	85	91	92	96	95	98	98	103
Total	916	940	945	980	1000	1043	1027	1049	1010	1037	1018	1013

^a Numbers may not add to totals due to rounding.

^b These totals include Army and Air National Guard technicians, who were converted from state to federal employees in FY 1979.

U.S. Military Personnel in Foreign Areas^a
(End Fiscal Year — In Thousands)

Table B-2

	FY 1979	FY 1980	FY 1981	FY 1982	FY 1983	FY 1984	FY 1985	FY 1986	FY 1987	FY 1988	FY 1989 ^b
Germany	239	244	248	256	254	254	247	250	251	249	249
Other Europe	61	65	64	67	70	73	75	75	73	74	71
Europe, Afloat	25	22	25	33	18	25	36	33	31	33	21
South Korea	39	39	38	39	39	41	42	43	45	46	44
Japan	46	46	46	51	49	46	47	48	50	50	50
Other Pacific	15	15	16	15	15	16	16	17	18	17	16
Pacific Afloat (Including Southeast Asia)	22	16	25	33	34	18	20	20	17	28	25
Latin America/Caribbean	12	11	12	11	14	13	12	13	13	15	21
Miscellaneous Foreign	9	31	27	23	27	25	20	26	27	29	13
Total	468	489	502	528	520	511	515	525	524	541	510

^a Numbers may not add to totals due to rounding.^b As of September 30, 1989.

Appendix C

Department of Defense Strategic Forces Highlights

Table C-1

	FY 1980	FY 1984	FY 1986	FY 1988	FY 1989	FY 1990	FY 1991
Strategic Offense							
Land-Based ICBMs^a							
Titan	52	32	7	—	—	—	—
Minuteman	1,000	1,000	998	954	950	950	950
Peacekeeper	—	—	2	46	50	50	50
Strategic Bombers (PAA)^b							
B-52D	75	—	—	—	—	—	—
B-52G/H	241	241	241	234	173	154	154
B-1B	—	—	18	90	90	90	90
Fleet Ballistic Missile Launchers (SLBMs)^a							
Poseidon A-3	80	—	—	—	—	—	—
Poseidon (C-3 and C-4)	336	384	320	336	384	368	368
Trident	—	72	144	192	192	240	288
Strategic Defense Interceptors (PAA/Squadrons)^b							
Active	127/7	90/5	76/4	36/2	36/2	18/1	18/1
Air National Guard	165/10	162/10	198/1	216/12	216/12	216/12	216/12

^a Number on-line.

^b Primary aircraft authorized.

**Department of Defense
General Purpose Forces Highlights**

Table C-2

	FY 1980	FY 1984	FY 1986	FY 1988	FY 1989	FY 1990	FY 1991
Land Forces							
Army Divisions							
Active	16	16	18	18	18	18	16
Reserve	8	8	10	10	10	10	10
Marine Corps Divisions							
Active	3	3	3	3	3	3	3
Reserve	1	1	1	1	1	1	1
Army Separate Brigades^a							
Active	8	8	7	8	8	8	8
Reserve	26	23	20	20	20	19	19
Army Special Forces Groups							
Active	2	4	4	4	4	5	5
Reserve	4	4	4	4	4	4	4
Army Ranger Regiment	0	0	1	1	1	1	1
Tactical Air Forces (PAA/Squadrons)^b							
Air Force Attack and Fighter Aircraft							
Active	1,608/74	1,734/77	1,764/78	1,868/79	1,769/79	1,743/75	1,746/75
Reserve	758/36	852/43	876/43	909/43	897/42	867/42	849/42
Conventional Bombers							
B-52G	0	0	0	0	61	33	33
Navy Attack and Fighter Aircraft							
Active	696/60	616/63	758/65	758/67	730/65	698/66	684/66
Reserve	120/10	75/9	107/10	121/10	118/10	61/10	116/10
Marine Corps Attack and Fighter Aircraft							
Active	329/25	256/24	333/25	346/25	335/25	348/26	383/27
Reserve	84/7	90/8	94/8	96/8	90/8	102/8	102/8
Naval Forces							
Strategic Forces Ships	48	41	45	43	42	40	41
Battle Forces Ships	384	425	437	437	434	412	397
Support Forces Ships	41	46	55	60	64	66	68
Reserve Forces Ships	6	12	18	25	26	33	40
Total Deployable Battle Forces	479	524	555	565	566	551	546
Other Reserve Forces Ships	44	24	21	21	21	21	17
Other Auxiliaries	8	9	7	5	3	3	3
Total Other Forces	52	33	28	26	24	24	20

^a Does not include roundout brigades; does include the eskimo scout group and the armored cavalry regiments.

^b PAA — Primary aircraft authorized.

**Department of Defense
Airlift and Sealift Forces Highlights**

Table C-3

	FY 1980	FY 1984	FY 1986	FY 1988	FY 1989	FY 1990	FY 1991
Intertheater Airlift (PAA)^a							
C-5	70	70	71	98	110	110	110
C-141	234	234	234	234	234	234	234
KC-10	—	25	48	57	57	57	57
C-17	—	—	—	—	—	—	—
Intratheater Airlift (PAA)^a							
C-130	482	520	504	521	492	450	444
C-123	64	—	—	—	—	—	—
C-7A	48	—	—	—	—	—	—
Sealift Ships, Active^b							
Tankers	21	21	24	20	29	28	27
Cargo	23	30	40	41	40	40	39
Sealift Ships, Reserve^b							
RRF ^c	24	51	77	91	93	100	105
NDRF ^d	—	—	—	129	128	120	118

^a Primary aircraft authorized.

^b Includes fast sealift ships, afloat prepositioned force ships, and common user (charter) ships.

^c Ready Reserve Force (assigned to 5-, 10-, or 20-day reactivation readiness groups).

^d National Defense Reserve Fleet (beginning in FY88 specific NDRF ships were designated militarily useful ships).

Appendix D

Selection of Officers for Award of the Joint Specialty (FY1989)

Table D-1

Service	I	II	III	IV	V	Total
Army	33	27	1315	820	15	2210
Navy	8	7	628	202	0	845
USMC	12	1	255	160	3	431
USAF	30	39	1537	241	10	1857
DOD	83	74	3735	1423	28	5343

NOTES: TYPE I includes officers who have completed both a joint professional military education (JPME) course and a subsequent joint duty assignment (JDA). TYPE II includes officers who have completed both the joint education and assignment prerequisites, but required a waiver for the sequence of the prerequisites. TYPE III includes officers who have completed a JDA, but required a waiver for the joint education course. TYPE IV includes officers who completed a joint education course, but received a waiver for completing a JDA. TYPE V includes officers who qualified for the joint specialty under the critical occupational specialty (COS) provision of the law.

Critical Occupational Specialties

Table D-2

The following military specialties, listed by service, are designated as critical occupational specialties. In every case, the specialties so designated are each service's "combat arms" specialties.

Army	Navy	USAF	USMC
Infantry	Surface	Pilot	Infantry
Armor	Submariner ^a	Navigator	Tanks/AAV
Artillery	Aviation	Air Weapons Director ^a	Artillery
Air Defense Artillery	SEALs ^a	Missile Operations ^a	Air Control/Air Support/AntiAir
Aviation	Special Operations	Space Operations ^a	Aviation
Special Operations		Operations Mgt	Engineers
Combat Engineers			

^a Combat arms military occupational specialties which have a severe shortage of officers.

Critical Occupational Specialty Officers

Table D-3

Category	Army	Navy	USAF	USMC	Total
JSO Nominee	139	173	1099	97	1508
JSO Nominee in a JDA	139	160	986	90	1375
JSO Nominee in a JDA, no JPME	41	43	967	89	1140
Completed a JDA and at JPME	2	11	7	0	20
Completed JPME in FY 89	326	185	266	160	937
Selected for JSO	1148	546	961	272	2927

Critical Occupational Specialty Officers

Table D-4

	2nd JDA						Critical JDA					
	FG			G/FO			FG			G/FO		
	Have Srvd	Are Srvg	Ttl	Have Srvd	Are Srvg	Ttl	Have Srvd	Are Srvg	Ttl	Have Srvd	Are Srvg	Ttl
Army	10	123	133	0	26	26	1	34	35	0	1	1
Navy	0	13	13	0	3	3	0	3	3	0	1	1
USAF	0	25	25	2	1	3	0	7	7	3	1	4
USMC	0	2	2	0	2	2	0	1	1	0	1	1
Total	10	163	173	2	32	34	1	45	46	3	4	7

Officers Nominated for the Joint Specialty

Table D-5

	Nominated (COS)	Total Nominated
Army	139	158
Navy	43	173
USAF	1099	1174
USMC	97	97
Total	1378	1602

JOINT DUTY ASSIGNMENT OBJECTIVES

Annual Report on FY 1989 Promotion Rates

Promotion rates required by the DoD Reorganization Act of 1986, with the intent to measure the quality of officers assigned to joint duty, are attached in the following pages. Brief explanations for the "in zone" categories where the required promotion objectives were not met are consolidated in Table D-6. As reported in September 1989, the Joint Staff and joint commanders have seen a noticeable improvement in the quality of officers assigned. Since that report was submitted, a joint study group has begun looking at the current methods of measuring the quality of officers to determine if the Department is capturing the best data available. Preliminary results of that group's effort show that promotion rates appear to be the best objective measure of quality; however, this methodology does have some shortcomings.

For example, many cases where promotion objectives were not achieved were a result of small populations, many where only one officer with joint experience was eligible, and cases where one additional selectee would have meant meeting or exceeding the promotion objective. Also, FY 1989 boards contained some officers who were still in joint duty assignments based on pre-Act assignment practices — the net result being lower joint promotion rates. It will be another year before the joint promotion statistics fully reflect the post-Goldwater-Nichols assignment practices.

Other areas of concern include the above/below zone statistics and the exclusion of some officers from the statistics. Above and below zone statistics are difficult to compare and analyze because of the extremely low promotion opportunity in these zones. Additionally, the different promotion philosophies for above/below zone promotions of the Services complicates the analysis. Furthermore, the requirement to exclude joint specialty officers serving in the "other joint duty" category does not appear to be a reasonable measure of the quality in this category. Lastly, many quality officers assigned to joint duty will not be reflected in the statistics for many years. For example, on the FY 1989 Army Colonel Selection Board, due to assignment timing, 147 of the 540 officers selected in-zone were senior service college students. When these officers are included in the statistics based on their subsequent assignments (2 months after the board), the joint promotion rates are considerably higher (see Note #5 in Table D-6).

The joint study group is looking closely at these areas of concern to determine better ways to monitor the Department's progress toward this important objective of assigning quality officers to joint duty.

NOTE: In the tables that follow, a dash (-) indicates there were no eligible officers in that category and a "N/A" means that no such category exists for that rank.

Promotion Rates

Table D-6

Rank	Joint Categories	Are Serving In (In Percent)			Have Served In (In Percent)			Remarks
		In Zone	Below Zone	Above Zone	In Zone	Below Zone	Above Zone	
Air Force Promotion Rates (Line)								
0-8	Joint Staff	25	N/A	N/A	50	N/A	N/A	See note 2
	Joint Specialty	38	N/A	N/A	38	N/A	N/A	
	Service HQS	37	N/A	N/A	14	N/A	N/A	
	Other Joint	0	N/A	N/A	0	N/A	N/A	See note 1
	Service Average	36	N/A	N/A	36	N/A	N/A	
0-7	Joint Staff	4	N/A	N/A	0	N/A	N/A	See note 2
	Joint Specialty	3	N/A	N/A	3	N/A	N/A	See note 3
	Service HQS	4	N/A	N/A	2	N/A	N/A	
	Other Joint	0	N/A	N/A	0	N/A	N/A	See notes 2 & 3
	Service Average	2	N/A	N/A	2	N/A	N/A	
0-6	Joint Staff	58	2	40	67	0	—	See note 2
	Joint Specialty	68	5	14	68	5	14	
	Service HQS	59	4	11	58	23	7	
	Other Joint	42	1	6	27	1	3	See notes 3 & 4
	Service Average	44	3	3	44	3	3	
0-5	Joint Staff	91	8	60	100	0	0	See note 2
	Joint Specialty	93	6	67	93	6	33	See note 2
	Service HQS	92	8	19	100	14	0	
	Other Joint	70	2	10	69	3	9	
	Service Average	64	3	7	64	3	7	
0-4	Joint Staff							
	Joint Specialty							
	Service HQs							(No Board in FY 89)
	Other Joint							
	Service Average							
Army Promotion Rates (Army Competitive Category)								
0-8	Joint Staff	33	—	N/A	33	—	N/A	See note 2
	Joint Specialty	47	—	N/A	47	—	N/A	See note 2
	Service HQS	40	—	N/A	50	—	N/A	
	Other Joint	46	—	N/A	36	—	N/A	
	Service Average	36	—	N/A	36	—	N/A	
0-7	Joint Staff	8	—	N/A	2	—	N/A	See note 2
	Joint Specialty	3	—	N/A	3	—	N/A	See note 3
	Service HQS	2	—	N/A	7	—	N/A	
	Other Joint	7	—	N/A	6	—	N/A	
	Service Average	2	—	N/A	2	—	N/A	

Promotion Rates (Continued)

Table D-6

Rank	Joint Categories	Are Serving In (In Percent)			Have Served In (In Percent)			Remarks
		In Zone	Below Zone	Above Zone	In Zone	Below Zone	Above Zone	
0-6	Joint Staff	53	0	6	17	5	—	See note 3
	Joint Specialty	47	2	2	47	2	—	
	Service HQS	40	0	0	35	4	—	
	Other Joint	28	0	1	12	0	—	
	Service Average	41	2	1	41	2	—	
0-5	Joint Staff	100	17	0	100	0	—	See note 4
	Joint Specialty	79	7	16	79	6	23	
	Service HQS	80	7	12	75	18	25	
	Other Joint	68	5	2	49	2	2	
	Service Average	61	6	5	61	6	5	
0-4	Joint Staff	100	—	—	100	100	—	
	Joint Specialty	—	—	—	—	—	—	
	Service HQS	86	11	—	88	11	—	
	Other Joint	86	—	—	86	—	—	
	Service Average	69	3	19	69	3	19	

Marine Corps Promotion Rates (Unrestricted)

0-8	Joint Staff	—	—	N/A	—	—	N/A	See note 6
	Joint Specialty	44	—	N/A	44	—	N/A	
	Service HQS	75	—	N/A	20	—	N/A	
	Other Joint	—	—	N/A	50	—	N/A	
	Service Average	42	—	N/A	42	—	N/A	
0-7	Joint Staff	25	—	N/A	0	—	N/A	See note 1
	Joint Specialty	4	—	N/A	—	—	N/A	
	Service HQS	4	—	N/A	2	—	N/A	
	Other Joint	40	—	N/A	0	—	N/A	
	Service Average	3	—	N/A	3	—	N/A	
0-6	Joint Staff	100	0	10	—	0	—	See note 2
	Joint Specialty	60	0	0	60	—	0	
	Service HQS	63	0	11	62	0	8	
	Other Joint	39	0	13	33	0	0	
	Service Average	45	0	6	45	0	6	
0-5	Joint Staff	78	0	—	100	0	—	See note 2
	Joint Specialty	78	0	0	78	0	0	
	Service HQS	78	0	4	67	0	11	
	Other Joint	75	0	0	40	0	29	
	Service Average	60	0	6	60	0	6	
0-4	Joint Staff	—	—	—	—	—	—	See note 3
	Joint Specialty	—	—	—	—	—	—	
	Service HQS	67	0	25	67	0	0	
	Other Joint	33	0	0	50	—	0	
	Service Average	67	0	17	67	—	17	

Promotion Rates (Continued)

Table D-6

Rank	Joint Categories	Are Serving In (In Percent)			Have Served In (In Percent)			Remarks
		In Zone	Below Zone	Above Zone	In Zone	Below Zone	Above Zone	
Navy Promotion Rates								
0-8 Unrestricted Line	Joint Staff	—	—	N/A	—	—	N/A	
	Joint Specialty	50	14	N/A	—	—	N/A	
	Service HQS	50	40	N/A	—	—	N/A	
	Other Joint	33	0	N/A	—	—	N/A	See note 2
	Service Average	54	17	N/A	—	—	N/A	
Cryptology	Joint Staff	100	—	N/A	—	—	N/A	
	Joint Specialty	—	—	N/A	—	—	N/A	
	Service HQS	—	—	N/A	—	—	N/A	
	Other Joint	—	—	N/A	—	—	N/A	
	Service Average	100	—	N/A	—	—	N/A	
Supply	Joint Staff	—	—	N/A	—	—	N/A	
	Joint Specialty	100	0	N/A	—	—	N/A	
	Service HQS	—	—	N/A	—	—	N/A	
	Other Joint	—	—	N/A	—	—	N/A	
	Service Average	67	17	N/A	—	—	N/A	
0-7 Unrestricted Line	Joint Staff	0	6	—	—	—	N/A	See note 2
	Joint Specialty	2	3	—	—	10	N/A	See note 2
	Service HQS	3	8	—	—	—	N/A	
	Other Joint	0	1	—	—	—	N/A	See note 2
	Service Average	1	3	—	—	3	N/A	
Civil Engineer	Joint Staff	—	—	N/A	—	—	N/A	
	Joint Specialty	0	0	N/A	—	—	N/A	
	Service HQS	0	0	N/A	—	—	N/A	
	Other Joint	0	0	N/A	—	—	N/A	
	Service Average	0	0	N/A	—	—	N/A	
Engineering Duty	Joint Staff	—	—	N/A	—	—	N/A	
	Joint Specialty	0	0	N/A	—	—	N/A	
	Service HQS	0	0	N/A	—	—	N/A	
	Other Joint	—	0	N/A	—	—	N/A	See note 1
	Service Average	0	2	N/A	—	—	N/A	
Public Affairs	Joint Staff	0	—	N/A	—	—	N/A	See note 1
	Joint Specialty	20	0	N/A	20	—	N/A	See note 6
	Service HQS	50	—	N/A	—	—	N/A	
	Other Joint	0	0	N/A	—	—	N/A	See note 2
	Service Average	11	0	N/A	11	—	N/A	
Supply	Joint Staff	0	0	N/A	—	—	N/A	
	Joint Specialty	0	3	N/A	—	—	N/A	
	Service HQS	0	0	N/A	—	—	N/A	
	Other Joint	0	0	N/A	—	—	N/A	
	Service Average	0	3	N/A	—	—	N/A	

Promotion Rates (Continued)

Table D-6

Rank	Joint Categories	Are Serving In (In Percent)			Have Served In (In Percent)			Remarks
		In Zone	Below Zone	Above Zone	In Zone	Below Zone	Above Zone	
O-6 Unrestricted Line	Joint Staff	67	0	25	—	0	—	
	Joint Specialty	70	0	0	—	—	—	
	Service HQS	38	2	0	100	0	—	
	Other Joint	28	0	0	0	0	0	See note 7
	Service Average	49	2	2	49	2	—	
Civil Engineer	Joint Staff	—	—	—	—	—	—	
	Joint Specialty	0	0	—	—	—	—	See note 2
	Service HQS	50	0	—	—	—	—	
	Other Joint	0	0	0	—	—	—	See note 1
	Service Average	46	0	11	—	—	—	
Aeronautical Engineer	Joint Staff	—	—	—	—	—	—	
	Joint Specialty	0	0	—	—	—	—	See note 1
	Service HQS	100	0	—	—	—	—	
	Other Joint	—	0	0	—	—	—	
	Service Average	45	0	7	—	—	—	
Cryptology	Joint Staff	—	—	—	—	—	—	
	Joint Specialty	0	0	100	—	—	—	
	Service HQS	0	0	—	—	—	—	
	Other Joint	0	0	13	—	—	—	See note 1
	Service Average	33	4	8	—	—	—	
Engineering Duty	Joint Staff	—	—	—	—	—	—	
	Joint Specialty	—	—	—	—	—	—	
	Service HQS	—	33	—	—	—	—	
	Other Joint	0	0	—	—	—	—	See note 1
	Service Average	50	2	—	—	—	—	
Intelligence	Joint Staff	—	—	—	—	—	—	
	Joint Specialty	0	0	0	—	—	—	
	Service HQS	0	0	0	—	—	—	
	Other Joint	0	0	8	—	—	—	See note 2
	Service Average	44	6	4	—	—	—	
Oceanography	Joint Staff	0	—	—	—	—	—	
	Joint Specialty	0	0	—	—	—	—	
	Service HQS	0	0	—	—	—	—	
	Other Joint	—	0	—	—	—	—	
	Service Average	55	3	—	—	—	—	
Public Affairs	Joint Staff	—	—	—	—	—	—	
	Joint Specialty	67	0	—	—	—	—	See note 2
	Service HQS	100	0	—	—	—	—	
	Other Joint	67	0	0	—	—	—	
	Service Average	44	7	0	—	—	—	
Supply	Joint Staff	—	0	—	—	—	—	
	Joint Specialty	0	0	—	—	—	—	
	Service HQS	—	0	—	—	—	—	
	Other Joint	14	0	0	—	—	—	See note 2
	Service Average	44	2	3	—	—	—	

Promotion Rates (Continued)

Table D-6

Rank	Joint Categories	Are Serving In (In Percent)			Have Served In (In Percent)			Remarks
		In Zone	Below Zone	Above Zone	In Zone	Below Zone	Above Zone	
(O-5) Line	Joint Staff	—	—	—	—	—	—	
	Joint Specialty	64	3	50	100	0	—	See note 2
	Service HQS	93	3	9	50	0	33	
	Other Joint	45	3	1	—	—	0	See note 2
	Service Average	61	2	2	61	2	2	
Civil Engineer	Joint Staff	—	0	—	—	—	—	
	Joint Specialty	—	—	0	—	0	0	
	Service HQS	100	0	0	—	—	0	
	Other Joint	—	—	0	—	0	0	
	Service Average	63	0	4	—	0	4	
Aeronautical Engineer	Joint Staff	—	—	—	—	—	—	
	Joint Specialty	0	—	—	—	—	—	
	Service HQS	—	—	—	—	—	—	
	Other Joint	0	0	0	—	—	—	See note 2
	Service Average	57	0	17	—	—	—	
Cryptology	—	—	0	—	—	—	—	
	Joint Specialty	—	0	0	—	—	—	
	Service HQS	—	—	0	—	—	—	
	Other Joint	0	0	0	—	—	—	See note 2
	Service Average	64	3	0	—	—	—	
Engineering Duty	Joint Staff	—	—	—	—	—	—	
	Joint Specialty	100	0	—	—	—	—	
	Service HQS	—	—	—	—	—	—	
	Other Joint	100	0	0	—	—	0	
	Service Average	63	3	4	—	—	3	
Intelligence	Joint Staff	—	—	—	—	—	—	
	Joint Specialty	83	0	0	—	—	—	
	Service HQS	—	—	—	—	—	—	
	Other Joint	70	0	0	—	—	—	See note 2
	Service Average	74	0	0	—	—	—	
Public Affairs	Joint Staff	—	—	—	—	—	—	
	Joint Specialty	0	—	—	—	—	100	
	Service HQS	—	—	—	—	—	100	
	Other Joint	0	0	—	—	—	—	See note 2
	Service Average	33	14	—	—	—	14	
Supply	Joint Staff	100	—	—	—	—	—	
	Joint Specialty	80	0	—	—	—	—	See note 2
	Service HQS	100	0	—	—	—	—	
	Other Joint	67	0	0	—	—	—	
	Service Average	66	0	2	—	—	—	

Promotion Rates (Continued)

Table D-6

Rank	Joint Categories	Are Serving In (In Percent)			Have Served In (In Percent)			Remarks	
		In Zone	Below Zone	Above Zone	In Zone	Below Zone	Above Zone		
O-4 Unrestricted Line	Joint Staff	67	0	0	—	0	0	See note 2	
	Joint Specialty	—	—	—	—	—	—		
	Service HQS	75	4	0	100	0	0		
	Other Joint	55	1	0	50	0	—	See note 3	
	Service Average	73	2	15	73	2	15		
Cryptology	Joint Staff	—	—	—	—	—	—		
	Joint Specialty	—	—	—	—	—	—		
	Service HQS	—	50	—	—	—	—		
	Other Joint	0	0	0	—	—	—		See note 2
	Service Average	69	3	10	—	—	—		
Engineering Duty	Joint Staff	—	—	—	—	—	—		
	Joint Specialty	—	—	—	—	—	—		
	Service HQS	—	—	—	—	—	—		
	Other Joint	50	0	—	—	—	—		See note 2
	Service Average	78	1	—	—	—	—		
Intelligence	Joint Staff	—	—	—	—	—	—		
	Joint Specialty	—	—	—	—	—	—		
	Service HQS	—	—	—	—	—	0		
	Other Joint	67	0	0	—	—	0		See note 2
	Service Average	80	2	0	—	—	2		
Oceanography	Joint Staff	—	—	—	—	—	—		
	Joint Specialty	—	—	—	—	—	—		
	Service HQS	—	—	—	—	—	—		
	Other Joint	67	0	—	—	—	—		See note 2
	Service Average	74	0	—	—	—	—		
Supply	Joint Staff	—	—	—	—	—	—		
	Joint Specialty	—	—	—	—	—	—		
	Service HQS	0	—	—	—	—	—		
	Other Joint	57	0	0	—	0	—		See note 2.
	Service Average	64	2	26	—	2	—		

Notes:

1. Small numbers involved — only one officer with joint experience eligible for promotion in this competitive category.
2. Small numbers involved — one additional selection in this promotion category needed to meet promotion objective.
3. Small numbers involved — less than 3 1/2% of eligible population; comparison and analysis is inconclusive.
4. Within 2% of meeting promotion objective.
5. If the Senior Service College students who were selected for promotion were included with their post-PME organization, the promotion rate for "other joint duty" would have been 47% — exceeding the service average by 6%.
6. Small numbers involved — if one more joint specialist officer and one less Service Headquarters General Officer were selected, the promotion objective would have been met.
7. Several non-selectees were assigned to joint positions under pre-DoD Reorganization Act assignment policies. Now quality officers are being assigned to their positions, i.e., O-6 promotion rates for those assigned in 1989 were 73% compared to 49% service average.

**Analysis of the Assignment of Officers
Following Selection for the Joint Specialty**

Table D-7

Category	Army	Navy	USAF	USMC	Total
Command	246	174	179	59	658
Service HQ	130	89	54	46	319
Joint Staff					
Critical	6	3	6	2	17
Other JDA	37	9	14	3	63
Total	43	12	20	5	80
Other Joint					
Critical	98	30	50	11	189
Other JDA	283	70	123	33	509
Total	381	100	173	44	698
PME	192	93	70	16	371
Other Oper	337	65	97	139 ^a	638
Other Staff	608	57 ^b	306	63 ^a	1034
Other Shore	—	357	—	14	371

The information in this chart identifies the first reassignment of an officer following selection for the joint specialty.

^a For the Marine Corps, Other Oper = Fleet Marine Force and Other Staff = non-Fleet Marine Corps.

^b For Navy, Other Staff includes other shore assignments.

**Average Length of Tours of Duty in Joint Duty Assignments (FY 1989)
(In Months)**

Table D-8

	General/Flag Officers		
	Joint Staff	Other Joint	Joint Total
Army	26	26	26
Navy	28	25	26
USMC	35	27	28
USAF	21 ^a	29	28
DOD	26	27	27
	Other Officers		
Army	35	40	40
Navy	37	40	39
USMC	38	37	37
USAF	40	41	41
DOD	37	40	40

^a One of the five assignments in this category was unusually short, indirectly due to the change of administrations in early 1989.

Tour Length Exclusions

Table D-9

Category	Army	Navy	USAF	USMC	Total
Retirement	49	74	107	15	245
Separation	0	10	2	0	12
Suspension From Duty	5	1	4	0	10
Compassionate/Medical	15	5	2	1	23
Other Joint After Promotion	2	0	1	0	3
Deactivation of Unit	5	3	2	0	10
Joint Overseas	191	47	358	16	612
Joint Accumulation	33	0	0	0	33
COS Reassignment	68	29	19	7	123
Total	368	169	495	39	1071

Officer Distribution by Service (FY 1989)

Table D-10

	Joint Staff	Other Joint Duty	Total Joint Duty ^a	Total DOD (Percent)
Army	305	2814	3119 (36.2%)	35.3
Navy	237	1627	1864 (21.6%)	23.8
USMC	50	408	458 (5.3%)	6.6
USAF	339	2834	3173 (37.7%)	34.3
DOD	931	7721	8623	

^a From Joint Duty Assignment List

Waiver Authority Use

Table D-11

Category	Army		Navy		USAF		USMC		Total		Total
	FG	GO	FG	FO	FG	GO	FG	GO	FG	GO	
A1	27	1	7	0	15	0	8	0	57	1	58
A2	42	0	3	0	23	7	13	4	81	11	92
B1	0	0	0	0	2	0	0	0	2	0	2
B2	42	0	3	0	23	7	13	4	81	11	92
C1	3	NA	0	NA	1	NA	11	NA	15	NA	15
C2	24	NA	13	NA	37	NA	13	NA	87	NA	87
D1	44	7	26	4	16	5	4	0	90	16	106
D2	792	39	358	17	748	32	122	9	2020	97	2117
E1	NA	2	NA	13	NA	17	NA	0	NA	32	32
E2	NA	42	NA	22	NA	32	NA	11	NA	107	107
F1	NA	2	NA	6	NA	1	NA	1	NA	10	10
F2	NA	30	NA	15	NA	17	NA	8	NA	70	153
G1	NA	18	NA	19	NA	33	NA	3	NA	73	73
G2	NA	30	NA	15	NA	17	NA	8	NA	70	70
H1	2098	69	842	65	1805	24	418	0	5163	158	5321
H2	42	0	3	0	23	7	13	14	81	11	92

1 = Waiver was exercised

2 = No waiver was exercised

Waivers include: (A) JSO sequence waiver, (B) JSO two-tour waiver, (C) waiver of post-JPME JDA assignment for JSO, (D) JDA tour length waiver, (E) CAPSTONE course waiver, (F) waiver for promotion to O-7, (good of the service), (G) waiver for promotion to O-7, (sci/tech, professional, joint equivalence, navy nuclear), and (H) temporary waiver provisions for award of JSO.

Critical Positions Summary

Table D-12

Category	Army	Navy	USAF	USMC	TOTAL
Total Positions	381	201	382	60	1024
Vacant	21 (6%)	15 (7%)	43 (11%)	0 (0%)	79 (8%)
JSO Filled	276 (72%)	140 (70%)	289 (76%)	45 (75%)	750 (73%)
Non-JSO Filled	83 (22%)	46 (23%)	50 (13%)	15 (25%)	194 (19%)
Percent JSO Filled Since 1 Jan 89	82	85	84	82	84

Reasons Above Positions Were Not Filled By Joint Specialty Officers

Position filled by incumbent prior to being a joint position	68
Position being converted to a non-critical position or being deleted	8
Joint Specialist Officers not available	15
Best Qualified Officers not a Joint Specialist	18
Position filled by incumbent prior to being a critical position	47
Other	38
Total	194

JDA Positions Not Filled by Joint Specialists

Table D-13

The following joint organizations have joint duty billets not filled by joint specialists:

Organizations	JDA Positions Not Filled By JSOs
Office of Secretary of Defense (OSD)	8
Defense Nuclear Agency (DNA)	2
Defense Mapping Agency (DMA)	5
Defense Logistics Agency (DLA)	6
Defense Communications Agency (DCA)	12
Defense Intelligence Agency (DIA)	15
Defense Attaches	2
National Security Agency (NSA)	5
Defense Mobilization Systems Planning Activity	1
US Atlantic Command (USLANTCOM)	5
US Central Command (USCENTCOM)	11
US European Command (USEUCOM)	14
US Pacific Command (USPACOM)	21
US Southern Command (USSOUTHCOM)	9
US Special Operations Command (USSOCOM)	2
Joint Special Operations Command (JSOC)	1
US Transportation Command (USTRANSCOM)	2
NATO Military Committee	1
Allied Command Europe (ACE)	20
Allied Command Atlantic (ACLANT)	8
HQ North American Aerospace Command	6
Combined Field Army (CFA)	3
Joint Staff	22
National Defense University (NDU)	4
Joint Strategic Target Planning Staff (JSTPS)	4
Joint Warfare Center (JWC)	1
Joint Doctrine Center (JDC)	1
Military Entrance Processing Command (MEPCOM)	1
Total	194