DEPARTMENT OF DEFENSE

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SECRETARY OF DEFENSE

REPORT OF SECRETARY OF DEFENSE

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TO THE CONGRESS

ON THE

FY 1982 BUDGET, FY 1983 AUTHORIZATION REQUEST AND FY 1982-1986 DEFENSE PROGRAMS

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THIS REPORT REFLECTS THE FY 1982 DEFENSE BUDGET AS OF JANUARY 16, 1981.

FOREWORD

Looking back over my four years as Secretary of Defense reinforces my pride both in the basic principles and in the many major accomplishments of the Carter Administration in the field of national security. I also recognize how much remains to be done. As I leave the unique perspective of this office, I look to the future with confidence in the courses we have charted, the programs we have initiated, and those we have brought into being. Yet, I remain concerned about the serious threats and problems that will continue to confront us.

Most satisfying of all is that for these four years our nation remained at peace, despite the tensions and turmoil that challenged our interests--or threatened to--at different times and different places. America is a strong nation, and an important element of our overall strength is our disciplined restraint in the application of the vast power we possess. No one group can claim preponderant credit for this peace, but I note with satisfaction the important role of the Department of Defense.

While no American troops were committed to combat in the last four years, eight gallant men did lose their lives in what was the most intense and bitter disappointment of my tenure--the attempt to rescue our fellow Americans held hostage in Iran. Our sorrow that this mission was unsuccessful is matched only by our admiration for those eight and the others involved--all of whom served in the highest traditions of this country.

A second general achievement of great significance--and many have had a hand in it these past five years or so--is the forging of a historic and long-overdue consensus for increasing our nation's military strength. The Vietnam War and its aftermath were painful experiences for Americans, and not all of the lessons we learned were salutary. We have come a long way since those days when many Americans seemed to recoil from even the possession, let alone the use, of military power. The American people have come to recognize the nature and the dimensions of the threats we face--in particular the relentless 20-year growth in Soviet military power--and they are progressively willing to bear the cost of a necessary and proper response to those threats. The Fiscal Year 1982 Budget I am presenting this month represents the sixth real increase in U.S. defense spending in six years, and our long-term program calls for increases in each of the following four years as well.

At the same time, we have had to cope with the way in which inflation, triggered largely by escalating energy costs, has eroded the full effect of our significant defense increases. In fact, inflation in the defense procurement sector has run substantially higher--at Producer Price Index rates--than inflation in general. This impact has required us to request supplemental appropriations, and it has intensified competition between defense and other federal spending, which ought instead to complement each other in strengthening our country. The net effect has been to make coherent defense planning more difficult.

Given that our country faces severe economic difficulties, that there are pressing non-defense claims on the budget, and that even the substantial defense resources committed thus far and those projected for the future cannot procure everything we might want or need, the long-standing obligation to make the wisest

possible use of the public's money becomes ever more serious and difficult. If we are not successful in meeting this responsibility, the fragile consensus for increasing our military strength will dissipate. Thus, I would sound a note of caution about so-called "quick fixes" in defense, which more often than not turn out neither to be very quick nor to fix very much; they also risk diverting scarce funds away from medium-term and long-term needs, thus leading decision-makers (in the executive and the legislative branches) and the general public to believe that the real problems have been solved, when in fact they have not.

Examining the past four years and the decade of the 1980s, one can list any number of important national security issues. While I elaborate on most of these in some detail in the Defense Report, a few should be highlighted here and put into perspective. Oliver Wendell Holmes wrote: "I find the great thing in this world is, not so much where we stand, as in what direction we are moving." In the complex world of defense needs and defense programs, where weapon systems are often eight to ten years in development, rare is the major program that can be begun and completed in a four-year period. But the direction in which we move over four years can have important consequences for the future.

Strategic Forces. As one of our first orders of business after taking office, we surveyed the Soviet strategic threat, at that time undergoing full-scale modernization, and estimated where it was going. We then undertook a systematic program to strengthen deterrence and to promote nuclear stability by refining our strategic doctrine, modernizing the triad, and pursuing arms control.

For many years, our strategic doctrine had not been explicitly refined and codified to incorporate the effects of evolving elements of Soviet thinking or of the most modern Soviet strategic capabilities. Today, after several years of serious analysis and effort, we have a doctrine--our countervailing strategy--that is clear, flexible, and non-provocative, so as to provide deterrence across the full range of possible Soviet nuclear threats.

Survivability is the hallmark of our strategic modernization programs, for survivable retaliatory forces are the essence of deterrence. We recognized early the effect of what had long been predicted--that fixed ICBM silos, such as those for our Minuteman missiles, were becoming progressively vulnerable to increasingly accurate ICBM warheads. We intensified our efforts to develop a feasible, survivable, and (for arms control purposes) verifiable basing scheme for the proposed new MX ICBM. After considering a variety of MX basing schemes--as well as proposals using MINUTEMAN missiles, missiles in aircraft, and new types of submarine missiles--we adopted a solution whose implementation will provide a survivable and militarily effective U.S. ICBM force for the future. This course is more difficult than deploying more powerful yet still vulnerable ICBMs or than relying only on ballistic missile submarines and bombers. However, it is worth the effort, because it contributes greatly to strategic stability, and the deployment mode is in my view superior to all of the alternative MX basing ideas that have been discussed.

In 1977 we also faced a fundamental decision on how to modernize our strategic bomber force. One choice was to build a new penetrating bomber, the B-1; the other was to develop a new, technologically sophisticated weapon, the air-launched cruise missile (ALCM). Our assessment at the time, that the B-1 would be vulnerable to upgraded Soviet air defenses later in the decade, has in my judgment been borne out since by the relevant analysis and subsequent intelligence data. We chose instead

to proceed with the ALCM, 20 of which can be carried on a single B-52 that itself would not have to penetrate Soviet air defenses. In effect, the ALCM forces the Soviets to deal with a larger number of targets with small radar and other signatures as opposed to a few bombers that are much more detectable and much less survivable. The ALCM, which combines several of our most advanced technologies, is difficult to detect, to track, or to destroy--even by modern Soviet radars and missiles. This was one of our soundest and most cost-effective, though most argued, decisions. In less than four years, we have completed the competitive full-scale development of ALCM and have brought it into serial production. The first operational ALCM will go on alert in 1981, and a full squadron of B-52s will be equipped with ALCMs by 1982. We also continue to look at future penetrating bomber alternatives, both as a hedge to ALCM and as a possible replacement for the B-52's various uses.

As for what is now surely the most survivable element of the triad, our ballistic missile submarine force, we have made solid progress with two major programs to enhance its survivability even further. First, the longer-range Trident I missile, which has been backfitted on six of our Poseidon submarines and will be on six more, multiplies roughly tenfold the amount of ocean in which submarines carrying it can hide yet still strike their assigned targets. Second, the larger but quieter Trident submarine will give us a modern ballistic missile submarine force well into the 21st century.

Strategic communications, command, and control has been a key focus of recent efforts and needs to be strengthened in the future; it is the central nervous system of our nuclear deterrent.

The SALT II Treaty stands both as one of our most substantial contributions and, in the failure to complete the ratification process, as one of our most significant disappointments. From the standpoint of national security, the Treaty is solid--it limits the Soviet threat, makes it more predictable, ensures that any violation could be detected before our security is threatened, protects necessary U.S. programs, yet precludes the vast expenditures an unconstrained strategic competition would necessitate and which would divert scarce resources from other priorities. It is of major importance to our security interests that we retain the SALT II limits on Soviet strategic forces. But, whatever the outcome of the current impasse, one of the continuing and most critical national security challenges of the 1980s will be to find a way to sustain the process of strategic arms control--in our country where effective politics often aborts effective policy, and in a world where the actions of the Soviets often threaten the political viability of the entire arms control process.

NATO. Regarding our most historic and most successful alliance, we have sought--with a large measure of success--to mold an effective response to the continuing military challenge posed by the Warsaw Pact and--with somewhat less success--to encourage our allies to assume a larger share of the common defense effort. The record these past four years has been one of considerable progress. Successive NATO summits in 1977 and 1978 led to approval of a comprehensive Long-Term Defense Program covering 10 critical areas of conventional military needs and--in order to approach the necessary funding--a commitment to increasing national defense expenditures by three percent above inflation. In the area of theater nuclear weapons, the Alliance decided in December of 1979 to modernize long-range theater nuclear forces (LRTNF), while pursuing arms limitations on U.S. and Soviet LRTNF.

For our part, we are more than meeting the three percent commitment. Also, we have begun working with the Allies to increase the efficiency of our defense effort by the collaborative development and production of weapons. During the past year, we started joint development of three new weapon systems and joint production of four others. Moreover, an innovative Rapid Reinforcement program, based on prepositioning equipment for the troops who would be flown over to Europe, is strengthening our ability to cope with a Warsaw Pact blitz attack. With our program of prepositioning equipment and supplies in Europe, we can today support four U.S. divisions in Europe, and by the mid-1980s, we will be able to move six divisions to Europe within 10 days. Also, in return for U.S. rapid reinforcement, we are arranging for the Allies to provide much greater peacetime and wartime support for U.S. troops in Europe, thereby ultimately saving us billions in peacetime costs.

Yet, despite all this progress, I leave office concerned that we and our Allies are not yet fully facing up to a well-documented Warsaw Pact military build-up. Even at a time of new threats to Western Europe's (and our and Japan's) oil lifeline to the Middle East and the Persian Gulf, many of our allies appear either untroubled by the threats or unwilling to assume their share of the common defense burden. During the years in which Western Europe was being rebuilt (in no small measure with U.S. help) and during the era of unquestioned U.S. strategic superiority, the American people always willingly assumed the great bulk of the burden of European defense.

Today, when the common threats are larger, the aggregate economic strength of our NATO and Japanese allies--in spite of the severe common scourges of inflation and unemployment--has become immense (in terms of GNP, Western Europe exceeds the United States, and Japan alone equals about one-third of our GNP). And as the American people are asked to spend more on defense, they--and their elected representatives--will surely demand a more equitable division of labor with the Allies. They will not long tolerate a situation in which the security of our allies is assumed to be more important--and thus allowed to be more costly--to Americans than it is to our allies themselves, a situation in which U.S. defense budgets (already consuming a larger percentage of GNP than in the case of any other NATO ally and five times that of Japan) are growing faster than those of any other member of the NATO Alliance.

The United States cannot make all the decisions about the common defense alone any more than we can shoulder its burdens alone. We live in an era of interdependence. Therefore, the United States has pursued since World War II a collective security policy--and a coalition strategy--based on a proper division of labor between our allies and us. How to achieve this division of labor, and how to make our combined efforts more efficient, have been in the forefront of my concerns as Secretary of Defense. Our allies must increase their share of the total (and growing) burden. At the same time, it is disturbing to me that while NATO spends as much on defense as the Warsaw Pact, we are behind in so many important categories. Differential personnel costs are a significant factor, but even more so are the enormous inefficiencies and duplication of effort among allies. We have made a good start at coping with this problem, but mutual security dictates that much more be done.

As I look ahead into the 1980s, I am convinced that if we are to continue to be successful in winning the support of the American people for necessary increases in defense spending, we will have to be considerably more successful than we have

been so far in persuading the Europeans, the Japanese, and our other allies and friends as well, to shoulder their fair share. If the allies don't do their share, our mutual interests will be jeopardized. This, in my opinion, is one of the most important and the most difficult security problems facing the United States and our allies and friends in the years ahead.

Persian Gulf-Indian Ocean. My tour in office coincided with the emergence of a major new area of defense concern. The upheaval in Iran, the Soviet invasion of Afghanistan, and the Iran-Iraq war have focused attention on the Western need to deter, or cope with, not only indigenous instability, but also Soviet adventurism and expansionism in those areas, political or military. That task in itself demands more of the common defense. A new awareness of the dependence of industrialized democracies on Southwest Asian sources of oil and of the vulnerability of our oil lifeline to this region has led us to intensify our efforts to develop Rapid Deployment Forces (RDF), able to move quickly and effectively to meet threats to our vital interests anywhere in the world. We have made considerable progress, relatively quickly, in developing a military capability to defend this vital lifeline. However, we must do--and spend--a great deal more. And for many reasons, the United States among the allies will have to bear the brunt of this particular burden; no one else can.

That brings us back to a proper division of labor between the United States and its allies. The threat to Southwest Asia poses the issue anew: the United States is doing more to meet common threats there by prepositioning supplies, strengthening our naval presence, enhancing airlift and sealift, developing plans, and exercising tailored packages of military capabilities. As we do so, recognizing that only a few of our European and Asian allies can contribute in a major way directly to the defense of Southwest Asia itself, how much more have they done to meet common threats at home? The answer is, sadly, not enough. European and Japanese dependence on Persian Gulf-Southwest Asian oil dwarfs that of the United States, yet we have assumed the overwhelming bulk of the renewed effort to defend the flow of oil. And it is an expensive undertaking: we estimate a $17.4 billion price tag over Fiscal Years 1982-1986 for our RDF programs, most of which are directed towards Southwest Asia. Japan, with its almost total dependence on imported oil, with its vibrant economy and its proven technological performance, simply must do more to meet defense needs at home to help compensate for the intensive and expensive U.S. effort in Southwest Asia, on Japan's behalf as well as our own. I have long sought to make this clear to our Japanese allies. And the same logic applies to our European allies.

The problems of oil and security will not soon fade away, nor will the problem of implementing a fair division of labor to meet the threats to our access to oil.

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In addition to our strategic, NATO, and Rapid Deployment Forces, three other issues warrant highlighting in a retrospective and prospective review of America's security--readiness, manpower, and technology.

Readiness, along with sustainability, is a component of military capability that generally receives less attention than force structure and modernization, and thus usually ends up being underfunded. Part of the problem is that, to a large

extent, readiness consists of the less glamorous nuts and bolts (spare parts, maintenance, training). It therefore lacks a "constituency" for its needs (though there is no lack of complainants about its deficiencies)--in the Services, in the executive branch, in the Congress--everywhere except with the troops in the field and their immediate commanders. Less glamorous though it may be, readiness--our ability to go to war quickly if need be--is vital to our overall military capability.

As a nation, we were late in addressing readiness, in part because of the severe demands for force structure improvements and modernization in the immediate aftermath of the Vietnam War. By the mid-to-late 1970s, readiness could no longer remain a back-burner matter. We have made significant progress in improving it.

For example, in 1976, the Navy had 68 ships awaiting overhaul; today there are fewer than 20. In FY 1982, we plan to spend two and one-half times as much on aircraft spare parts as we did in FY 1980. The standards for our readiness ratings have been raised. Army basic training has been lengthened by one week, the Army's National Training Center will open this year, the Air Force's "Red Flag" combat simulation training has increased, and the Navy has introduced a new and effective program for training at sea.

We are ready today, but much more needs to be done. One of the difficult challenges for defense leaders in the 1980s will be to develop--in the Services, in the civilian leadership in the executive branch, and in the Congress--an effective constituency for readiness. All too often in the past, we have started a budget cycle with readiness items high on the list, but as the budget evolved and the resource limitations took their toll, one by one readiness items were squeezed out by new weapon programs or other more glamorous proposals. We must find better ways to ensure that our resource allocations reflect the hard reality that spare parts for existing equipment are in many ways as important as--or even more important than--new, more advanced equipment.

Manpower. Our most severe readiness problem is shortage of personnel, in particular, of senior enlisted personnel--the sergeants and petty officers who provide the experience, the leadership, and the training to mold new recruits into an effective fighting force. Unfortunately, we are continuing to experience a major exodus of these invaluable soldiers, sailors, airmen, and marines. Replacing them will take years and sizable sums of money to train and to prepare others to succeed them. This loss is due in large measure to low pay and benefits, compared with the civilian economy. Since 1974, the gap between military and civilian compensation has been steadily widening. This year, it will narrow--thanks to the President's Fair Benefits Package, the Nunn-Warner Amendment, and the 11.7 percent pay raise. I predict we will see positive results, as far as retention is concerned, in the near future. But we must not allow the gap to widen again. Our men and women in uniform are competent, dedicated professionals who serve because they want to. They do not join the military to get rich, but they want--and deserve--a standard of living commensurate with that of the society they are sworn to serve and defend.

Nor, I might add, can we afford to reduce civilian manpower in the Department of Defense if this means that scarce military personnel must perform work that civilians can do as well and more cheaply. Indeed, we need to reverse that trend.

The difficult question of the All Volunteer Force versus conscription also deserves mention. Almost a decade ago, this country decided that its military would consist only of volunteers, not draftees. In my judgment, the All Volunteer Force--though, like the Selective Service military, not without its problems--has worked well. The large pool of eligible young men and women has enabled the Services to recruit enough competent and willing individuals to meet our manpower requirements. But as I look ahead and see the cohort of 18-year-old males shrinking, I foresee serious questions during the mid-1980s about continuing an all volunteer force. By that time we may well have to consider either a military draft or a broader national service system to augment the volunteer recruits.

Technology. Our prowess in technology has been and will continue to be one of our country's greatest assets, and its application to military capabilities is of critical importance to our national security. We pursue these military applications partly because we do it very well, but even more because, as Professor Morgenthau wrote in Politics Among Nations, "The fate of nations and of civilizations has often been determined by a differential in the technology of warfare for which the inferior side was unable to compensate in other ways."

Technology can make a difference. The ALCM, as I indicated earlier, poses a successful challenge to the best Soviet air defenses. Our quiet ballistic missile submarines confound the Soviets' limited anti-submarine warfare capabilities. Our F-15 is the world's finest air-to-air combat aircraft--nothing in the Soviet inventory can rival it. The low observable technologies we have been pursuing will add a unique dimension to our tactical forces and promise increased confidence in the strategic retaliatory capability of the United States.

All advanced technology development--civilian or military--is a long-term process, an investment in the future. The criterion is not whether that technology pays a dividend today. Let me elaborate on this point, using low observable technology as an example.

Since World War II, aircraft designers have experimented with ideas for low observable (stealth) aircraft that would defeat radars by making the aircraft practically invisible to them. While stealth aircraft have been pursued for decades, there have been significant technical problems through the years in designing an aircraft that would be sufficiently invisible under a variety of conditions. Nonetheless, enormous strides have been made in low observable technology. In the mid-1970s, we effectively applied such technology to the first generation of cruise missiles that then began their development and now are being deployed.

By 1977, it became clear that this technology could be made considerably more effective and could be applied to many types of vehicles. We concluded that it was possible to build aircraft so difficult to detect that they could not be successfully engaged by any existing air defense systems. Recognizing the great significance of this technology, we made roughly a ten-fold increase in our investment in it, and we initiated a number of very high priority programs to exploit it in military systems. Stealth technology may well be the most significant military development of this decade.

Another set of high technology applications that holds great promise is the application of large-scale integrated circuitry to precision-guided munitions. These will have increased importance in anti-tank and close support functions on the battlefield. They will also affect air-to-air combat, airfield interdiction, and the survivability of surface ships. We are pursuing both the fundamental technology that underlies these capabilities, as well as specific weapons applications.

Technology can be a force multiplier, a resource that can be used to help offset numerical advantages of an adversary. Superior technology is one very effective way to balance military capabilities other than by matching an adversary tank-for-tank or soldier-for-soldier. Other tools that combine with technology to this end include doctrine, tactics, and training. Even with the most sophisticated weapon systems, however, we cannot allow the numerical disparities between us and the Soviets to widen further. Thus, we continue to plan our forces on the basis of a "high-low" mix of high performance, high technology systems with less complicated, less expensive systems.

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As to each of these major geographical and/or functional areas--NATO and Northeast Asia, Rapid Deployment Forces, oil and security, a Southwest Asia security framework, readiness, manpower, and technology--we have, I am convinced, been moving in the right direction. To maintain this momentum, steady, sustained, and significant increases in defense spending are required. We must steer a careful course between two dangers. One is an alarmist reaction to the threats we face; that reaction would be politically and fiscally unsustainable. The other is a failure to respond to the unrelenting growth of Soviet power; such a failure would gravely jeopardize the security of our nation.

Perhaps equally dangerous would be the misguided belief that augmented U.S. military power will solve all of our international problems. No measure of military power can restore the world to an earlier time or avoid the tensions and rivalries that mark international politics in the latter decades of the twentieth century.

Military power, no matter how great, has important limitations in preserving U.S. interests in a complex world of intertwined political, military, and economic relationships. The other instruments of national policy--economic, political, and diplomatic--must also be skillfully used if we are to navigate the dangerous waters of the 1980's--as we have been doing, for example, in East Asia. But an equally important lesson is that, in the absence of adequate military capability on the part of the United States and joint military planning and programs with our allies, the confluence of several factors that have been developing for two decades--Soviet military power, the dependence of the industrialized nations on Southwest Asian oil, and the growing instability in the developing countries--will combine to make the world of the 1980's more dangerous than any we have yet known.

At the same time, balance is called for in our federal budgets: as the first man to hold this office wrote in the First Report of the Secretary of Defense in 1948, "One of the great problems from which the Military Establishment cannot

divorce itself is the complex one of securing proper balance between military necessities and national solvency." And on the next level, we must also maintain a proper balance within the defense budget among the competing claims of the various military Services and among the always incompletely fulfilled demands of force structure, modernization, readiness, and sustainability. Defense management is at bottom a matter of making hard choices and enforcing rigorous priorities among these competing demands for resources whose total is always less than we would wish to have.

These past four years have been both challenging and rewarding. Although much remains to be done, much has been achieved. Credit for this progress should be shared among the talented and dedicated men and women--civilian and military alike--of the Department of Defense, our colleagues in the other national security agencies, and the members of Congress and the American people who have supported us. I depart with confidence that our successors will build vigorously and effectively upon this foundation. The security of our nation--and of our allies and friends--demands no less.

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CHAPTER 1

INTRODUCTION

As in the past, I welcome the opportunity to present to the Congress my annual report--in this case, it is my final one--"on the foreign policy and military force structure of the United States for the next fiscal year, how such policy and force structure relate to each other, and the justification for each," as directed by Section 812 of the Department of Defense Appropriation Authorization Act of 1976. We have coordinated this report closely with the Department of State, and Secretary Muskie has indicated that he considers it to be responsive to these provisions.

In Section I of this Report, I will outline basic U.S. interests in the world and the challenges to them (Chapter 2); our national security policy and our regional policies (Chapter 3); our policies for: strategic nuclear forces (Chapter 4), forces for NATO (Chapter 5), and forces for non-NATO contingencies (Chapter 6); and our policies for the support of these forces, i.e., readiness and sustainability (Chapter 7). In Section II, I will present our defense programs in 15 areas, as well as our FY 1982 budget, which are designed to implement these policies. In this first Chapter, I will summarize our policies and our budget proposals.

I. DEFENSE POLICY

A. U.S. Interests and the Challenges We Face

The military forces of the United States serve to deter or, if necessary, to defend against any attack on our country or on our vital interests elsewhere. During the decade of the 1980s, our central interests include but go beyond military security:

-- to maintain our security and that of our allies and friends;

-- to manage East-West relations;

-- to meet the global challenges of economics and energy;

-- to resolve regional disputes by peaceful means;

-- to build positive bilateral relations;

-- to continue our commitment to human rights; and

-- to address other critical global issues such as over-population and world hunger.

The 1980s are marked by serious challenges to these central interests, both on a global scale and in specific regions of the world. The most visible and in many ways the most dangerous of these challenges is that posed by the continuing

and massive growth in the military power of the Soviet Union and by the demonstrated Soviet willingness to apply that power politically and militarily, both around the Soviet periphery and more recently at a distance. By any reasonable measure, the Soviet military effort is larger than ours (by 30-50 percent in terms of cost); it has been increasing steadily at four to five percent a year for 20 years; and it absorbs a share of their national resources more than twice as large as the U.S. military effort does of ours. It would be unwise, to say the least, to assume that this pattern of Soviet military growth will not continue throughout most or all of the coming decade. To date, this massive effort has brought the Soviets from inferiority to essential equivalence in strategic nuclear forces, has strengthened in a major way the theater nuclear and conventional capabilities of the Warsaw Pact both quantitatively and qualitatively, and has given new power and reach to their naval and other force projection capabilities.

Other serious challenges--sometimes exploited but not always caused by the Soviets--also confront us: our dependence on imported resources and the vulnerability of our access to them, indigenous instability in key regions of U.S. interest, and the prospect of proliferation of nuclear weapons to countries that do not now have them.

B. National Security Policy

In developing the security policies and the military forces to protect our interests from these and other challenges, we incorporate five general, underlying objectives and requirements:

-- build greater military strength -- we must continue the pattern, begun five years ago, of steady and sustained increases in defense spending as an index of increased efforts to build that strength;

-- revitalize collective security -- we must persuade our allies to assume their fair share of the total, common, and growing burden of defense;

-- employ flexibility -- we must be able to respond to threats both within the NATO theater and outside it, including particularly the Southwest Asia-Persian Gulf-Indian Ocean areas and the Northeast Asia area;

-- pursue arms control -- we should use such equitable and verifiable agreements as can be negotiated, to reduce the military threats arrayed against us and to enhance stability; and

-- exploit U.S. advantages -- we must take advantage of our geography, the inherent appeal and strength of our political and economic system, the contributions of our allies, and our technological process.

The three highest planning priorities in our national military strategy are to deter nuclear war; to deter or defeat any attack on us or on our European, Pacific, and other allies; and to deter or defeat any other attack on our vital interests.

In Europe, in order to maintain and strengthen deterrence, we must increase the conventional and theater nuclear military capabilities of NATO, improve efficiency within and among member states, and at the same time, pursue both conventional and theater nuclear arms control. In the Middle East-Persian

Gulf-Southwest Asia area, we seek to strengthen the regional security framework with the participation of local friendly nations, ourselves, and our other allies and friends who share our interests in that part of the world. In East Asia and the Pacific, we will work with our traditional allies to strengthen regional security by increasing allied military capabilities, especially in light of the challenges posed by the Soviets, the North Koreans, and others; simultaneously, we will pursue our emerging relationships with the People's Republic of China. In Latin America, we seek to enhance regional capabilities to deter further overt or covert Soviet/Cuban military activities and to protect our sea lines of communication. In Africa, our objectives are to protect our interests there, to promote stability in the continent and the independence of its nations, and to diminish Soviet and Cuban influence.

C. Policy for Strategic Nuclear Forces

Deterring nuclear war involves our strategic doctrine and plans, the forces themselves, and the process of strategic arms control.

During 1980, President Carter signed Presidential Directive No. 59, culminating two years of work by this Administration and codifying our evolving strategic doctrine, known as the countervailing strategy. This strategy makes clear to the Soviets that no course of aggression by them that led to the use of nuclear weapons--on any scale and at any stage in the conflict--could lead to their victory by any reasonable definition of victory. In addition to providing the ability to devastate the full target system of the Soviet Union, the countervailing strategy gives the President a wide range of options, including more selective, lesser retaliatory attacks that would exact a prohibitively high price from the things the Soviet leadership values most--the economic base needed particularly to sustain war, nuclear and conventional military forces, and the political and military controls that sustain the regime.

To meet the continuing challenge of Soviet strategic forces, we are modernizing all three legs of our strategic nuclear triad. Survivability is the hallmark of our modernization programs. The MX missile with its mobile basing mode is designed to--and will in the latter half of this decade--reduce ICBM vulnerability. The TRIDENT C-4 missile and TRIDENT submarine programs will render our ballistic missile submarine force both more powerful and even more survivable than it is today. Approximately one-half of our B-52 bomber force will be equipped with long-range, air-launched cruise missiles that will thwart the Soviet goal of upgrading their air defense system.

As for the overall strategic balance, it is my judgment that the United States and the Soviet Union remain essentially equivalent, but that our planned modernization programs are imperative if we are to preserve this rough balance for the remainder of the decade. One other factor contributing to the balance, or more precisely to our ability to maintain the balance, is strategic arms control. I remain convinced that the SALT II Treaty, as signed by President Carter in June 1979, serves our national security interests, and that the kinds of limitations it would place on Soviet strategic programs need to be retained, to make it easier and less expensive for us to maintain essential equivalence in the future.

D. Policy for NATO Forces

The military and political challenges confronting NATO demand a strong and coherent Alliance response. If deterrence is to be effective in the future, members of NATO simply must spend more on defense to balance the quantitative and qualitative improvements the Soviets have made in Warsaw Pact capabilities.

Together with our Allies, we are making progress on both aspects of the December 1979 NATO decision on long-range theater nuclear forces (LRTNF): modernization with the PERSHING II and the ground-launched cruise missile (GLCM), and U.S.-Soviet efforts to negotiate mutual limits on LRTNF. As we proceed on both aspects, we must make clear to the Soviets that the NATO commitment to LRTNF is solid, and that only concrete achievements in TNF arms control can affect the levels of deployment planned.

The implications of the Pact conventional build-up are clear and unavoidable: the Allies must achieve NATO's force goals, follow through on the Long-Term Defense Program, and meet the goal of three percent increases in defense spending. The changed strategic situation we face gives new urgency to these already-agreed Alliance commitments. Further, as the United States invests more heavily in capabilities to project military power to defend shared interests in Southwest Asia (while continuing to carry the predominant share of strategic deterrence and TNF), a reallocation of labor among NATO nations, in particular the European members' willingness to contribute more to shared security commitments in Europe, takes on new significance.

E. Policy for Non-NATO Forces

Two categories merit special attention: our Rapid Deployment Forces and our forces in East Asia and the Pacific.

Recent events have emphasized the need for the United States to be able to deploy and employ military forces quickly and effectively in parts of the world far distant from our shores, yet of vital interest to us, as well as to our allies and friends. This is the mission of our Rapid Deployment Forces. Any strategy to defend access to Persian Gulf oil must involve strengthening the ability of indigenous forces to resist outside aggression, enhancing U.S. capabilities to respond quickly and effectively, and persuading our European and Asian allies to do more for defense at home to compensate for our expensive commitment to Rapid Deployment Forces. For us, this involves, among other steps: strengthening our naval presence near Southwest Asia; prepositioning equipment and supplies there; augmenting our airlift and fast sealift capabilities; obtaining emergency access to airfield and port facilities in the region; and designing and exercising flexible forces to meet a wide variety of contingencies.

In East Asia and the Pacific, our policy is to continue and to enhance our cooperative security relationships with our traditional allies and friends, encouraging them, especially the Japanese, to make steady and significant increases in their own defense efforts. At the same time, we seek to widen and deepen our military contacts with the People's Republic of China, in the context of the overall normalization of U.S.-Chinese relations.

F. Policy for Readiness and Sustainability

The United States military must be adequately manned, highly trained, fully equipped, and properly maintained. Our forces must be ready for deployment to any potential combat theater and must possess the staying power necessary to defeat any adversary. We do not yet have all the capability we would like, and in some specific cases, not all that we might conceivably need. But, we have made significant advances and are applying major resources to correct problems in each of four critical elements of readiness and sustainability--manpower, materiel, mobility, and mobilization.

The men and women of our Armed Forces are the most essential of our national security assets. The compensation and benefits packages enacted by the Congress and signed by President Carter will assist greatly both in retaining experienced personnel in critical skills and in attracting high-quality men and women for the All Volunteer Force. We have also invested heavily in more and better training, both here and overseas, and have improved the management of our military and civilian work force.

The peacetime materiel readiness and wartime combat sustainability of our forces must be sufficient to implement our strategic objectives and plans. In pursuit of this goal, we are focusing our efforts on reducing current backlogs in depot repair of weapon systems and components and on increasing our supply of spare parts, munitions, equipment, and combat-essential consumables.

Mobility for our forces is essential, because we cannot hope to maintain adequate forces on-site everywhere in the world where our interests may be threatened. By prepositioning supplies and equipment overseas, and by increasing our airlift and fast sealift capabilities, we will enhance our ability to respond to simultaneous contingencies both in Europe and in non-European theaters.

Mobilization is the process by which the nation makes the transition from peace to war. Mobilization of the nation's resources is an enormous undertaking, involving thousands of concurrent activities within the Defense Department, other federal agencies, and the private sector. In particular, we must be able to call up, train, and deploy potentially large numbers of people on what may be very short notice. Although I am encouraged by our progress to date, much remains to be done. The results of a series of recently conducted mobilization exercises will guide us in this continuing effort.

* * *

The FY 1982 Budget and the FY 1982-1986 Five-Year Defense Program spell out the resources needed to implement these and our other defense policies.

II. THE DEFENSE BUDGET

The President has formally submitted the Defense Budget for FY 1982 and the budget estimates for the years 1983 through 1986. The overarching themes in this year's submissions are steady growth and balance. The budget clearly recognizes four major national security objectives: maintenance of essential strategic equivalence, the defense of NATO, the ability to cope with contingencies in remote areas of the world, and improving the readiness of our forces.

A. Summary of the FY 1982 Defense Budget

The Defense program for FY 1982 consists of a Total Obligational Authority (TOA) of $196.4 billion, a Budget Authority (BA) of $195.7 billion, and expected outlays of $180.0 billion. TOA for FY 1982 will be 5.3 percent higher and outlays will be 4.4 percent higher, in real terms, than for FY 1981. Detailed budget comparisons in both current and constant dollars are outlined in Section II, Chapter 16 of this Report.

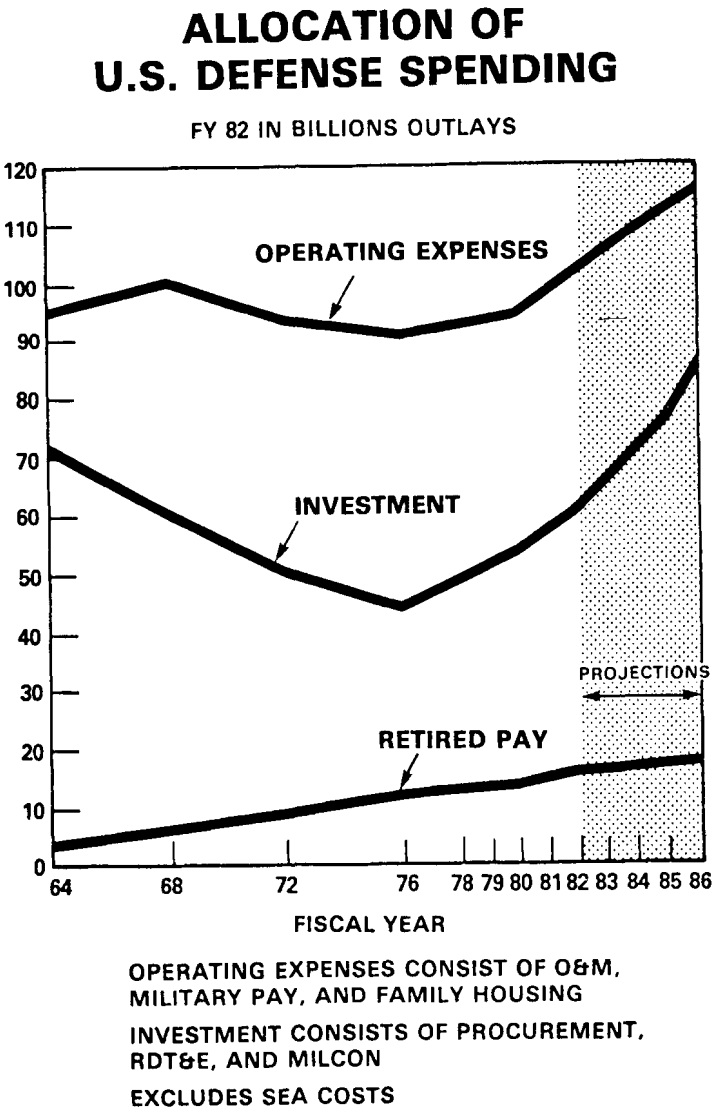
Of the total $196.4 billion in the FY 1982 budget, $83.2 billion or 42 percent of the defense budget, is allocated to the pay of people. The remaining $113.2 billion is then in principle available for programs to maintain and enhance the readiness, sustainability, and modernization of our military forces. Realistically, however, prior contracts, Congressional mandates, and other constraints preclude reallocation of a larger share of the budget. In essence, approximately 80 percent of the annual defense budget is already allocated.

Nonetheless, the FY 1982 budget request does reflect a significant increase in resources related to near-term readiness. These include funds to improve maintenance, stock levels of spare parts, quality of life for our people, and to correct other materiel and personnel deficiencies that jeopardize our ability to meet deployment schedules or planned wartime activity rates.

In one area, aircraft spares, we are requesting for all Services about $1.3 billion more in the FY 1982 request--for a total that is two and one-half times what we spent in FY 1980. We are also emphasizing funds to improve the quality of life of our people. As a result of the President's Fair Benefits Package and other initiatives in the FY 1981 and 1982 budgets, we can expect military pay to become more nearly comparable to civilian pay in the next year.

Approximately 62 percent of the FY 1982 Defense Budget--excluding retired pay, which is now nearly 8.7 percent of all defense costs--must be allocated to the operation of the current force structure. The remaining 38 percent constitutes our main investment in future capability, as well as the cost of keeping the current force structure up-to-date. The trends in allocation of our defense spending are shown in Chart 1-1.

CHART 1-1



In sum, the FY 1982 Defense Budget represents both sustained real growth and realistic emphasis on our most important needs.

B. The Long-Range Projection for Defense

The long-range projection for defense spending is shown in Table 1-1. In real terms, TOA will increase an average of 5.05 percent per year, and outlays an average 4.74 percent per year, from FY 1981 to FY 1986. The cumulative effect will be an increase of 28 percent in TOA and 26 percent in outlays, in real terms, between FY 1981 and FY 1986.

TABLE 1-1

Long-Range Projection for Defense
(Fiscal Years, Billions of Dollars)

	1981	1982	1983	1984	1985	1986
Total Obligational Authority						
Current Dollars	171.2	196.4	224.0	253.1	284.3	318.3
FY 1982 Prices	186.5	196.4	206.2	216.5	227.4	238.7
Outlays						
Current Dollars	157.6	180.0	205.3	232.3	261.8	293.3
FY 1982 Prices	172.5	180.0	188.2	197.1	207.0	217.5
Inflation Rate (%)						
TOA	11.7	8.9	8.6	7.6	7.0	6.6
Outlays	11.8	9.5	9.1	8.0	7.3	6.6

To improve our defense posture, we will be investing the increment of resources associated with real growth in several major areas.

-- We have programs underway to modernize the strategic nuclear triad.

-- We have proposed, and our allies have agreed to, a major deployment of long-range theater nuclear ballistic and cruise missiles in Europe.

-- We will continue to fund our share of the force improvements stipulated in the NATO Long-Term Defense Program (LTDP) and to expand our capability for the rapid and large-scale reinforcement of NATO ground and tactical air forces in Central Europe, and for deployment to the flanks of NATO.

-- We will increase substantially the readiness, strategic mobility, sustainability, and mobilization responsiveness of those units to be included in the Rapid Deployment Forces (RDF).

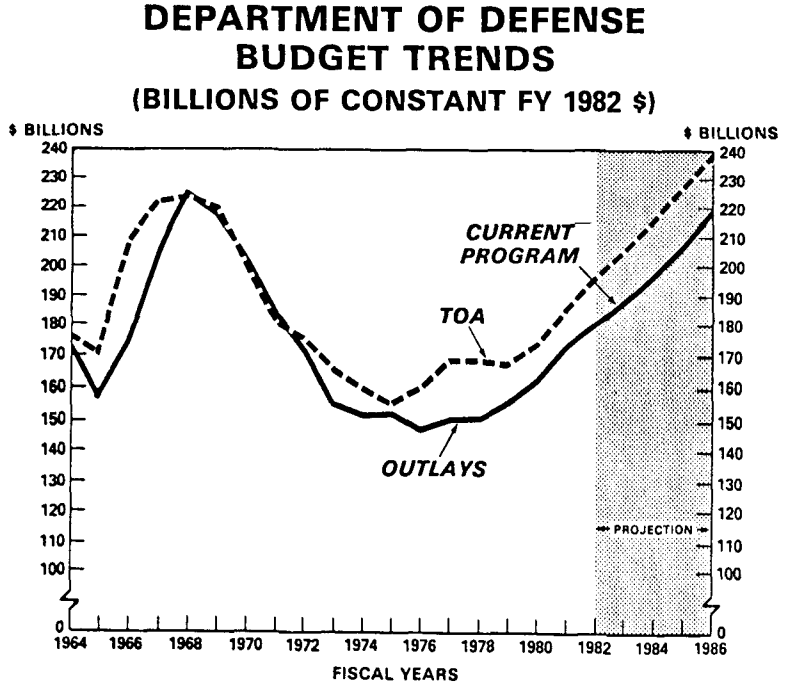
C. Balance Within the Federal Budget and Within the Defense Budget

We recognize the need to keep a balance among the demands of national security and those of domestic programs, as well as the requirement for economic growth and stability. A growth rate in the defense budget that rises so sharply it cannot be sustained or spent wisely would lead to inefficiency. What is needed is steady and sustained growth. Above some rate, defense spending increases could adversely affect the economy. However, defense expenditures are not more inflationary than other expenditures of the federal government--for example, the transfer payments that constitute the largest part of the federal budget. Our studies

suggest defense expenditures do have some longer term benefits for the civilian economy, because a large part of defense spending serves indirectly to promote domestic production in our most capital- and technology-intensive sectors. The proposed FY 1982-1985 program is, in my judgment, feasible without adverse economic effects, and the rate of expansion of real defense spending is sustainable past 1985, if that proves necessary in politico-military terms. The limiting factor is most likely to be trained manpower.

The FY 1982 budget and the long-range projection continue the steady increases in outlays begun in FY 1977. Trends in TOA and outlays are shown in Chart 1-2.

CHART 1-2



In addition to steady growth, we have made a concerted effort to establish realistic balance among the programs within the Defense Budget. Since we operate within resource limitations, we are forced to choose among competing programs. We have had to establish priorities among missions, regions, and functions--based on our national security objectives. We attempt to maintain balance and flexibility in our overall programs while giving priority to our most important needs. The programs we describe in Section II of this report will provide forces that are capable of meeting our near- and long-term objectives, while remaining within realistic resource limitations. Our program is comprehensive, it is balanced, and it is carefully designed to meet our real military needs.

CHAPTER 2

THE INTERNATIONAL ARENA: U.S. INTERESTS AND THE CHALLENGES WE FACE

I. U.S. FOREIGN POLICY AND U.S. INTERESTS

The military forces of the United States are designed and deployed to protect and to advance our basic national interests.

Military power alone, no matter how great, cannot solve all of our international problems; nor can it make the world over according to our chosen design. Military strength is a necessary, though by itself not a sufficient, condition for an effective foreign policy. Political and diplomatic effectiveness, along with economic strength and cooperation, are also required. But especially for a nation with global interests and global responsibilities, adequate military strength is essential. Without it, even the most creative application of our vast economic, political, and moral resources would have little chance of successfully protecting our basic security and physical integrity--let alone of sustaining the position and influence that the American people and those of other nations have come to expect, indeed in many instances to demand, of this country. Without adequate military strength, the other tools of foreign policy would be--and, as importantly, would be seen by others to be--at best fragile or hollow, and more probably ineffective.

Obviously, we do not plan our military forces from scratch each year. But the starting point, intellectually if not bureaucratically, is with America's basic national interests. For the coming years, the central interests of the United States are several:

- To maintain the security of our nation, as well as that of our allies and friends around the world. We seek to deter any aggression that could threaten that security, and, should deterrence fail, to repel or defeat any military attack.

- To manage East-West relations, in conjunction with our allies, so as to preserve our interests and the peace. It is incumbent on the United States, as the leader of the Atlantic Alliance and the center of other collective security frameworks, to cultivate the cooperative aspects of East-West relations, while simultaneously leading renewed efforts on the competitive aspects, channeling them into less dangerous routes wherever possible.

- To respond to the twin challenges of global economics and energy. Interdependence has long been a truism, but the extent of our resource dependence, the vulnerability of our supply lines, and the need to do more than merely acknowledge these realities, are now issues of considerable significance to us and to our allies and friends.

- To resolve peacefully disputes in troubled regions of the world. Such regional conflicts may involve allies or friends of the United States, may threaten

U.S. interests (such as access to oil or other natural resources, or to lines of communication), and almost always carry the risk of escalation to a wider conflict.

- To build positive bilateral relations with every nation with whom there is a basis of shared concerns. There are over 150 nations in the world today--no one of them is our equal in total wealth or power, but each is sovereign, and most if not all of them touch our interests directly or indirectly.

- To make a renewed assertion of fundamental American values--human rights. This nation was predicated on certain principles--freedom and the right of peoples to choose their own form of government. In our human rights policy we uphold these and other basic principles, including the right to at least some minimum living standard.

- To direct our attention to critical global problems, which, whether or not they now afflict us directly, will, if they remain unsolved, surely affect our lives in the future. Among these are over-population, world hunger, the depletion of natural resources, the worldwide flood of refugees, the international narcotics traffic, nuclear proliferation, and terrorism.

II. THE CHALLENGES WE FACE

These central interests constitute the basis of American foreign policy. Some of the challenges to these interests are global in scale and threaten several, or even all, of our basic interests. Others are more specific, in focus or geography. Some are old and familiar; others, relatively new. The nature and the extent of these threats directly affect our national military strategy and our defense policies and programs.

A. The Soviet Union

The most obvious and most significant of these threats is the global challenge posed by the only nation that rivals us in military power--the Soviet Union. Only a handful of people in the Soviet Politburo can claim with any confidence to know the Soviet Union's real motives and plans, what constitutes their "grand design," or indeed even whether they have a "grand design." To rely on what they say about these matters would be--to put it mildly--unwise. The rest of us must instead make use of what we can actually observe in that closed society, and then of what we can reasonably infer from what we observe. Largely because of important technological advances in intelligence-gathering capabilities, the former provides a good basis for analysis and planning; the latter is far less certain, but nonetheless valuable, as long as its inherent limitations are borne in mind.

As I have said before, the single most important military fact of life for the United States today, and into the decade of the 1980s, is the massive and continuing growth in Soviet military capabilities. It is useful, at this point in the current exposition, to describe the troubling dimensions of this growth in terms of its cost, or more precisely, our best estimate of its cost.

Estimates of defense expenditures do not provide a direct measurement of military capabilities. Ultimately, of course, the latter are what count on the battlefield. Cost estimates can, however, serve as an indirect shorthand for comparing defense efforts in a number of countries, and they are particularly useful in providing some insights into the scale and trends of these efforts. I will describe Soviet military capabilities themselves in some detail in succeeding chapters. That they are consistent with what one would expect from these cost estimates and trends should not be surprising, for to a substantial degree the costs are deduced from the forces.

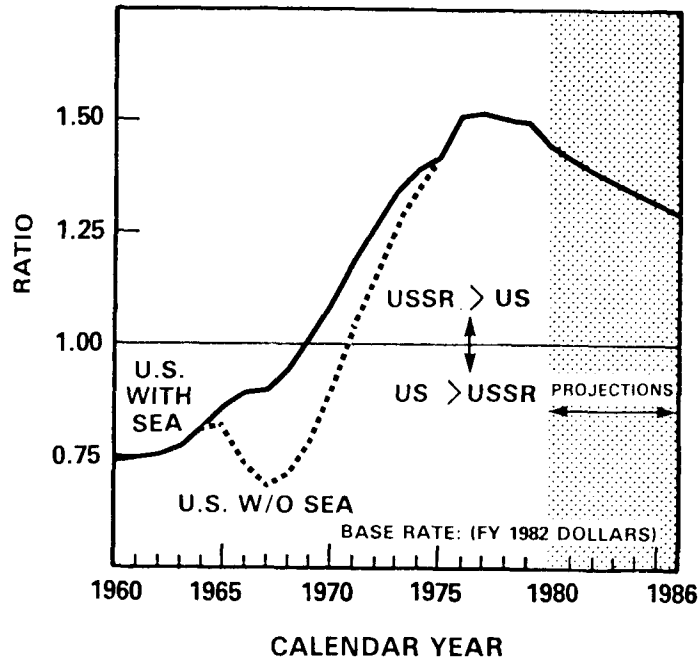
A number of methodologies are commonly used to estimate the cost of the Soviet forces; each sheds its own particular light, and each has its own limitations. Comparing defense expenditures for two countries requires a common metric. The most widely used comparative measures of U.S. and Soviet military expenditures are U.S. dollar costs and Soviet ruble costs. The former method compares the U.S. military budget with our estimate of what it would cost us (paying U.S. prices in dollars) to produce, man, and operate a military force of the same size and with the same weapons inventory as the Soviet force. The latter method compares our estimate of what it costs the Soviets (paying Soviet prices in rubles) to produce, man, and operate their military force, with what it would cost them to reproduce ours.

Both estimates suffer from several limitations. First, the reliability of these cost estimates depends on the accuracy of the estimates of Soviet activities--some of which are less easily observable than others by national technical means and other sensitive intelligence sources. Second, the index number problem inherent in all international economic evaluations may, in the case of defense expenditures, lead to overestimates of Soviet activity in the dollar estimate and of American activity in the ruble estimate. Third, the Soviets--and, in some cases, we ourselves--must spend additional resources in part to offset economic inefficiencies. Finally, the armed forces of the two nations differ significantly in doctrine, missions, composition, training, operations, technological sophistication, and the threats they face. Thus, a dollar estimate of what it would cost us to replicate the Soviet force is somewhat misleading, if for no other reason than that we would not want--or need--a force like theirs. This same factor also skews direct force comparisons, as will become clear in the discussions of the balances in later chapters.

These limitations notwithstanding, such estimation techniques can be used to make informed judgments about the magnitude and the trends of the Soviet effort. Three critical conclusions emerge: Soviet expenditures for defense are larger than ours; they have increased steadily over time; and they absorb a larger share of total national resources than do ours. The comparative estimates show that the Soviet Union spent about 50 percent more than the United States in 1980 using estimated dollar costs (see Chart 2-1). Even using the inherently much more conservative estimated ruble costs, the Soviets outspent us by 30 percent in 1979.

CHART 2-1

RATIO OF ESTIMATED DOLLAR COST OF SOVIET DEFENSE PROGRAMS TO U.S. DEFENSE OUTLAYS



NOTES:

1. U.S. outlays exclude retirement pay, include Department of Energy and Coast Guard defense outlays.
2. Estimated Soviet costs are based on what it would cost the U.S. to produce and man the Soviet military force and operate it as they do.
3. Projections are based upon three percent annual real growth for USSR. For U.S. real growth in outlays is projected at about five percent.
4. SEA: Southeast Asia (i.e., Vietnam costs).

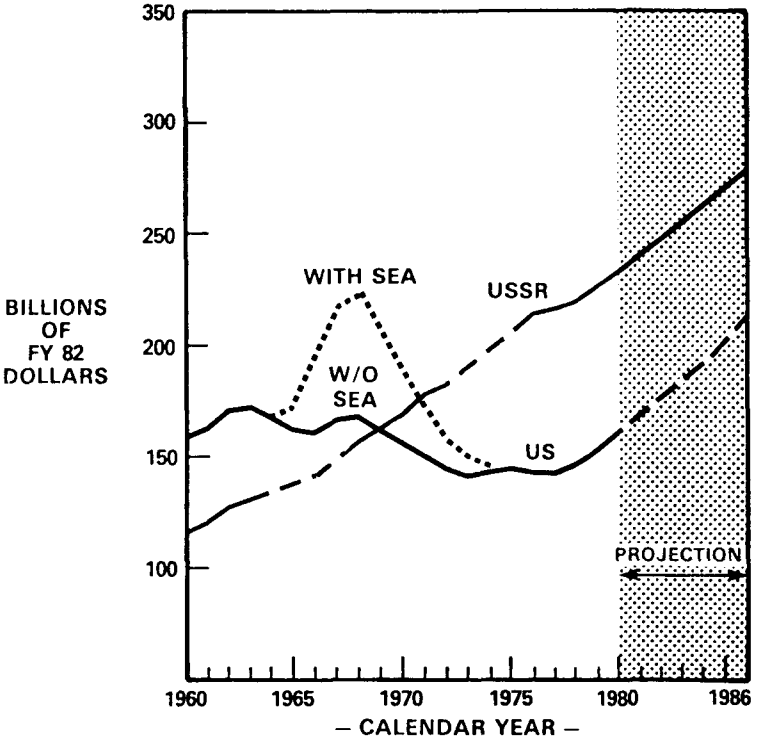
Two defense spending trends are especially significant: the investment effort (research and development, procurement, and military construction) and the pattern of increases.

The former trend is important because it represents an investment in future capabilities--the quantity and the quality of military forces. In 1970, the Soviet investment effort began exceeding ours; today, their investment rate is 80 percent greater than ours. (See Appendix C, Chart 13.) That investment has accumulated over time, and the full effects of a decade or more of Soviet investment advantage may not yet have been felt. Over the past decade, U.S. investment has fallen 20 percent, while Soviet investment has risen 50 percent. Cumulative Soviet investment from 1968 through 1979 has been about $270 billion more than ours. The important point is that the effects of today's investment balance will be seen in the military balance in future years.

Also important, and much less susceptible to the methodological problems of comparing absolute levels of U.S. and Soviet spending in a given year, is the pattern of annual changes in defense spending in the two countries. The trends, depicted in Chart 2-2, are clear and dramatic. Soviet defense spending has increased steadily and significantly by an average of four to five percent a year (measured in ruble costs), for each of the past 20 years, while U.S. defense spending (even excluding the Southeast Asia increment) rose and fell several times over the same period. This Soviet trend has continued, even as the rate of growth in Soviet GNP has declined.

CHART 2-2

COMPARISON OF U.S. DEFENSE OUTLAYS AND ESTIMATED DOLLAR COST OF SOVIET DEFENSE PROGRAMS



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3. Projections are based upon three percent annual real growth for USSR. For U.S. real growth in outlays is projected at about five percent.
4. SEA: Southeast Asia (i.e., Vietnam costs).

Of course, a strict comparison of U.S. and Soviet defense outlays does not show a complete picture. The two sides are much closer when we compare total NATO outlays to total Warsaw Pact outlays (see Appendix C, Chart 12).

The demonstrated willingness of the Soviet leadership to accept a very heavy defense burden within their total economy is also a significant fact. According to CIA estimates, about 12-14 percent of the Soviet Gross National Product is allocated to defense. In the United States, the figure is about five percent. That the Soviet GNP ranges only 50-75 percent of ours makes this Soviet commitment to military strength even more notable. In any event, the defense burden on the total economy is clearly significantly greater there than here, at least in terms of the share of the nation's resources it receives.

One must be careful not to draw the wrong conclusions from these estimates, however. For example, if the percentage of Soviet GNP going to defense were to rise in the future, it may well be not because the level of defense effort will rise more rapidly than in the past, but rather because military spending will continue to grow at traditional rates while overall economic growth slows significantly. Nor can one necessarily conclude, on the basis of these figures, that the average Soviet feels more burdened by defense spending than the average American, for too many other unmeasurable factors are involved--perceptions of the threat and the corresponding defense requirements, and the difference in what each has heard over the past 15 years about the burden of military expenditures on the national standard of living.

Particularly relevant, of course, is the role of the citizenry in making or affecting basic decisions about the allocation of society's resources. In the United States, the percentage of GNP devoted to defense is determined by a series of governmental actions in the executive branch and in the Congress that ultimately reflect the collective views of the citizenry. In the Soviet Union, it is determined by the leadership. Our experience in World War II shows that the American people are able and willing to devote very large shares of GNP to defense--upwards of 35 percent--when they believe the nation's survival is at stake. The Soviets, too, are capable of increasing the share of national resources devoted to defense to protect their vital interests. In both countries, the needs of defense must be balanced with other, competing demands, but in the United States, this balancing is a complex process with many actors and no central, authoritative control.

While Soviet economic growth probably will average about two percent in the early to mid-1980s, there is no evidence to support the contention, which has appeared from time to time in recent years, that the Soviet system or the Soviet economy or the Soviet people will not tolerate or cannot bear the additional increment in defense spending that a renewed, intensified arms competition would necessitate. On the contrary, the evidence, over at least the last two decades, demonstrates that the Soviet system bears what from a U.S. perspective would be an intolerable peacetime defense burden.

This Soviet commitment of massive resources to defense has produced significant gains in military capabilities across the board. Their strategic nuclear arsenal now includes both ICBMs that are sufficient in numbers and accuracy to pose a serious threat to our land-based missile silos, and a ballistic missile

submarine fleet that is much larger and more capable than in the past. Their long-range theater nuclear forces, of special concern in Europe, have been greatly augmented by the MIRVed SS-20 missile and the BACKFIRE bomber. Their navy is no longer merely a coastal patrol force, but now possesses considerable and growing sea control and power projection capabilities. Their ground forces can deliver more firepower, with greater mobility than ever before, and their capability to conduct chemical warfare (CW) continues to grow at an alarming rate.

This robust growth in military power yields potential benefits for the Soviets in at least two ways: in any number of scenarios, it could alter the outcome of a war, and as important, although more difficult to ascertain (by us, by the Soviets, or by others), this augmented military power, if not offset by our collective efforts, could translate into enhanced political power for the Soviets in situations short of war.

In addition to expanding and improving their forces in recent years, the Soviets have demonstrated a willingness to exercise military power indirectly through both the application of military assistance and the use of Cuban and other surrogates in parts of Latin America and Africa, and even directly in the December 1979 invasion and continuing occupation of Afghanistan, the first offensive combat use of Soviet military forces outside the borders of the Warsaw Pact since World War II. Whatever their exact motives in any of these specific instances, the Soviets obviously calculated that the costs of these adventures would not outweigh the gains. In retrospect, they may conclude that in some cases their initial cost-benefit calculations were incorrect, but what is important is that their perception at the time was that they stood to gain more than they would lose.

In the aftermath of the invasion of Afghanistan, the collective response that we inspired and led was designed not only to exact a price from the Soviets for that specific act of aggression, but also to force them to reassess in advance what would be the likely liabilities of any future acts of aggression. Although the response may fairly be described as ragged, it was probably a good deal stronger than the Soviets expected, and whatever the subsequent course of events may be, our response may well have given weight to our November and December 1980 warnings to the Soviets not to invade Poland.

The outlook for the 1980s is that the Soviets will continue to rely on their growing military might to enhance their international political leverage. In Europe, they confront the West with both the carrot of the tangible rewards of detente (cross-border visits and expanded trade, including sale of Soviet oil and gas, for example) and the stick of a powerful, modern Warsaw Pact fighting force configured and deployed for a possible attack across the NATO-Pact borders. In Africa and in Latin America, they continue to use their various surrogates to exploit local tensions and to challenge the stability of nations and regions that are of interest to us. In Southwest Asia and the Persian Gulf region, Soviet military power looms larger and nearer than ever before. In the Far East, North Korea remains a regional power and threat, and Vietnam has already become an extended arm for Soviet naval power.

At the same time, it is well to remember that the Soviets are not without their weaknesses. Some of their problems stem from structural and managerial weaknesses, but problems are also emerging in many of the basic factors that have

produced economic growth in the past. The rate of capital growth is declining, and the size of the labor force is increasing very slowly. In particular, net additions to the labor force in the coming decade will be about one-quarter of those in the previous decade.

Moreover, these demographic trends directly affect Soviet military forces in very specific ways. The number of 18-year-old males available for conscription will be significantly reduced during the first half of the 1980s, and will grow only slowly thereafter. The ethnic composition of this population will also change: the proportion of the 18-year-old cohort coming from the Muslim-Turkic ethnic groups will rise from about 23 percent in 1980 to almost 29 percent in 1990. There is some evidence that the Soviets are hesitant to use these and other non-Russian/non-Slavic ethnic groups in combat roles or in some branches of the military establishment, so they may be very pinched for personnel of Russian and other Slavic ethnic origins to fill critical positions in their armed forces.

The Soviets also have considerable problems within their own alliances. Recent developments in Poland amply illustrate the seriousness of the economic difficulties and the resistance of the Eastern Europeans to the governments and economic system that have been imposed on them by the Soviet Union since World War II. Also, there has been a general decline in the power of Soviet ideology, even in the Third World. As a result, the Soviets no longer can count upon the appeal that they may once have had as the center of a political ideology that, for many years and to many people, appeared to represent the future development of history. Instead, the Soviet Union is emerging much more as a traditional great (indeed imperialist) power than as an ideological leader. Moreover, their economic difficulties have weakened the appeal they had as a model for economic development.

Their history and the nature of their society incline the Soviets towards a top-down, centralized military command and control system at all levels in their forces. This leads to inherent vulnerabilities if the command and control systems can be disrupted, for it limits the flexibility and the initiative of unit commanders at the lower tactical levels. There are also specific areas where the Soviets lack the organization and operational competence to make maximum advantage of their forces. A prime example is naval operations: the Soviets are now building a blue water navy to conduct operations outside the range of land-based aircraft, but it is likely to take some years for them to acquire the institutional and organizational know-how to operate all elements of their blue water navy as effectively as our own forces at such distances.

B. Other Challenges

Not all of the challenges confronting us are of Soviet origin. While the Soviets no doubt will continue to exploit situations when and where they can, were we to view all challenges and all problems through a Soviet prism, we would seriously handicap our ability to come to grips with many of them. At least three other challenges deserve some mention here, because they touch our interests in a number of places around the world.

Resource dependence and vulnerability of access. The most obvious and most important example is oil, to which I alluded earlier in outlining the central U.S. interests. Our dependence, and the even greater dependence of our

allies and friends in both the industrialized and the developing worlds, threatens our standard of living, our economy, and our security. We now import close to half of the oil we consume, while the French, the West Germans, and the Japanese all import close to 100 percent of their needs. Further, 40 percent of total world oil imports currently flow on unarmed tankers through vulnerable choke points such as the Bab el-Mondeb, the Suez Canal, and the Straits of Hormuz.

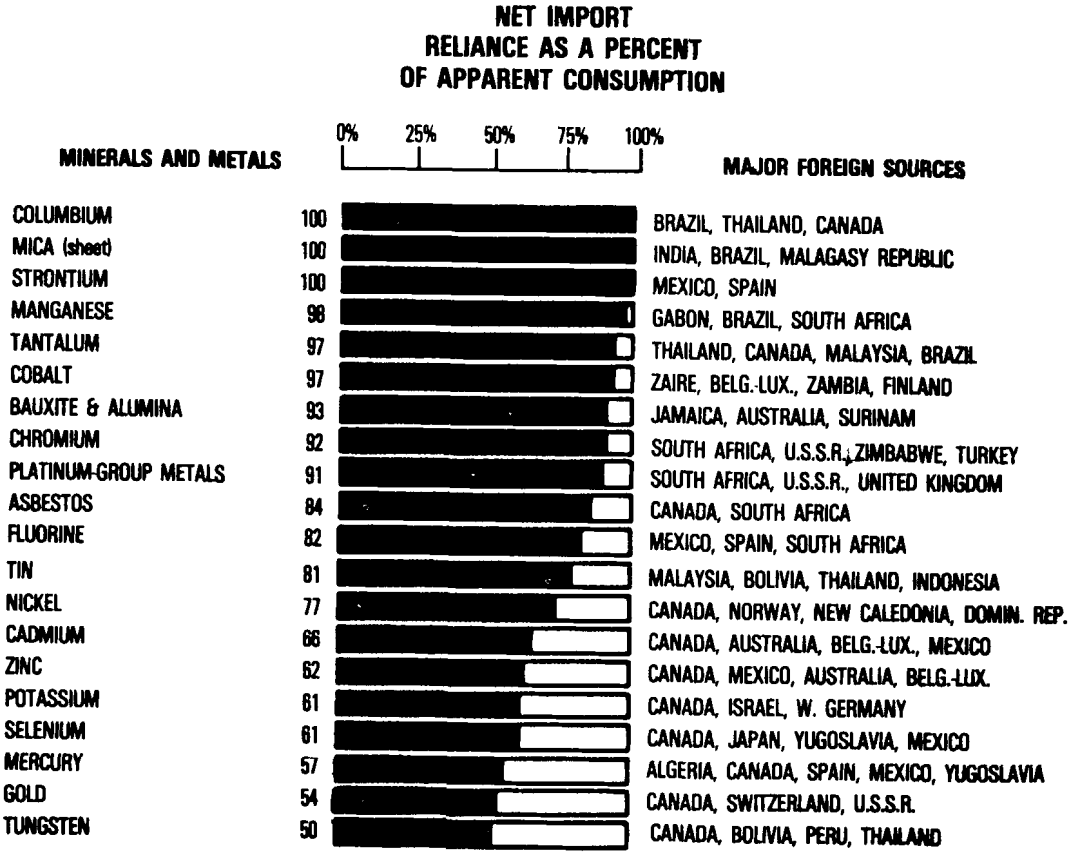
This dependence and vulnerability afflict not only the industrialized democracies. Many Third World nations are energy-poor importers of oil and victims of the rampant inflation and crushing debt it brings in today's world. Despite their new-found wealth and influence, many oil-exporting nations are militarily weak and highly vulnerable. They are thus potentially tempting targets for aggressive powers who may be driven by their own energy needs or by a desire to control the energy that others need. The potential of external aggression that would cut off access to oil, especially in the Persian Gulf, is a severe and by now well-recognized challenge.

Even short of such a drastic move, our security interests are challenged by the economics of oil. Military forces--even in peacetime--require enormous quantities of oil. The continuing and galloping inflation in oil prices extracts a high toll on defense budgets; the Department of Defense's oil bill in FY 1980 was approximately 195 percent of the FY 1979 bill and almost four times that of FY 1973. For us and for our allies and friends, the more we must spend on fuel for our military forces, the less we have available to spend on modernization, mobility, maintenance, or manpower. The economic impact is especially severe on certain less-developed countries, such as Turkey, Pakistan, Thailand, and South Korea, who play pivotal roles in our collective security; it creates a demand and a need for increased Western economic assistance just to help pay rising oil bills.

For all of us, the net effect of continuing oil price increases is a serious and progressive erosion in the real value of our defense budgets and in the health of our economies, which provide the ultimate resource base for security. And to complete the circle, it is the military capabilities of the United States and of our allies that constitute the only real defense that the oil-exporting nations--particularly those in the Persian Gulf--would have against Soviet aggression. Escalating oil prices thus threaten to undermine our ability to defend them, as well as to defend ourselves.

Often overlooked in the attention given to oil is our growing dependence on other scarce resources that are vital to American industry in general, and in many cases to defense requirements in particular. As Chart 2-3 indicates, we already import over half of our supplies of more than 20 strategically important materials, and the situation is expected to become worse over the next two decades. It is more feasible with these materials to find substitutes or to exploit lower grade deposits at higher cost, but even that would take considerable time. As with oil, at issue is not only our own dependence, but that of some of our closest allies and friends. The principal sources of these critical materials are widely dispersed around the world, in some cases remote from our shores, often in areas of continuing political unrest or even open warfare.

CHART 2-3



Indigenous instability. Tension and turmoil, often spilling over into open warfare within and between nations, characterize several regions of the world and will continue to do so well into the 1980s. Rooted in a variety of historical, political, religious, economic, ethnic, and social factors, this turbulence will threaten our interests in different ways, times, and places. From the resurgence of Islam in the Middle East-Persian Gulf-Southwest Asian region, to the struggle for black majority rule in southern Africa, to the continuing battles over the style and pace of economic development throughout the Third World, indigenous instability, in some cases fomented and fanned by outsiders, poses serious political and military challenges for us.

Nuclear weapon proliferation. As both symptom and cause of regional tensions in several parts of the world, the possible acquisition of a nuclear explosive capability by additional states is and will be a dangerous problem for U.S. security interests and those of our allies and friends. In every troubled

region, there are nations that either now have the technological and financial resources to develop nuclear weapons or have the potential to do so in the not too distant future. In no instance would development of additional nuclear capabilities reduce indigenous tensions and conflicts; rather, it could only intensify them, while drastically raising both the stakes and the risks. Neither local security interests nor those of other countries, including the United States, would be served by such proliferation.

* * *

As I stated at the outset, our national interests are global and varied, and so are the political, economic, and military challenges to them. Defending our vital interests is the mission of the Department of Defense. In Chapter 3, I will elaborate our national military strategy and policies for meeting the challenges we face.

CHAPTER 3

NATIONAL SECURITY POLICY

I. OVERALL OBJECTIVES AND REQUIREMENTS

In designing a national military strategy to meet the challenges to U.S. interests, we incorporate five general, underlying objectives and requirements: building greater strength, revitalizing collective security, employing flexibility, pursuing arms control, and exploiting U.S. advantages.

A. Greater Strength

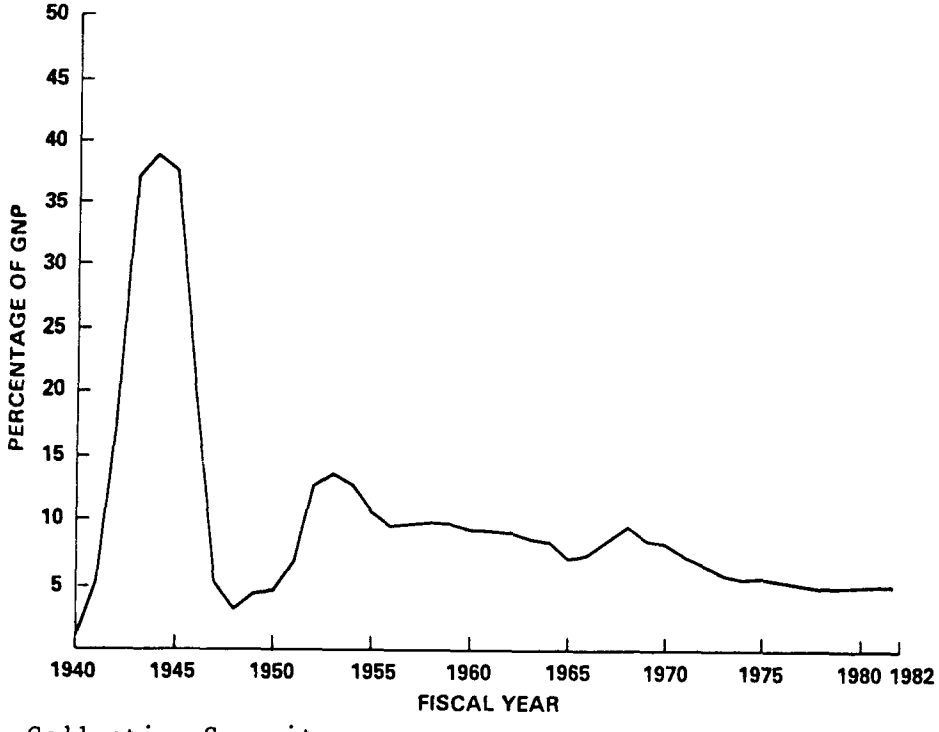
The growth in Soviet military capability that I described in Chapter 2 must be balanced by the United States and our allies and friends. In contrast with the steady, sustained, and significant increases the Soviets have made over the past two decades in defense spending, our record is one of stops and starts, peaks and troughs. This on-again/off-again approach to defense spending is not conducive to careful, long-range planning for balanced, effective military forces. Moreover, it has adverse effects on defense industry, by failing to provide the climate necessary to support capital investment. More recently, we have made considerable progress, with real increases in defense spending in each of the past five years, and our FY 1982-1986 Five Year Defense Program calls for five more consecutive increases.

One of the most significant recent developments in the area of national security has been the building of a strong public consensus for increased defense spending. This is a healthy sign, one that both provides the opportunity to make long-overdue improvements in American military capabilities and renders it even more important that we spend this money wisely. If we are not successful in meeting this challenge, the consensus will surely erode. As inflation, rising fuel prices, and increased personnel costs continue to absorb larger and larger amounts of the taxpayers' money, the careful allocation of resources within the defense budget--always a serious obligation--becomes even more difficult and more important.

The burden of even these higher levels of defense spending is not excessive, whether viewed in terms of the threats we face or in terms of the share of our GNP that will be required. In the past, as Chart 3-1 demonstrates, peacetime allocations for defense have been considerably higher than--indeed, twice as high as--the five percent average of recent years.

CHART 3-1

PERCENT OF GNP FOR DEFENSE



B. Collective Security

For more than 30 years, the basic U.S. approach to security has been a collective, coalition approach. Some of our formal alliances--with Western Europe, Japan, South Korea, Australia, and New Zealand, as well as in Latin America--have proven durable; others--CENTO, SEATO--though valuable in their time, have not. Over much of the post-World War II period, for us, collective security has been the preferred course; for many of our partners, it has been a strategic necessity, because only the United States had the resources, the reach, and the perceived responsibility to assume so large a part of the burden for others.

However, a coalition approach has now taken on new significance for us. Of course, the United States must always be able to defend its own immediate interests by itself, if necessary. But, as the nature and geographic distribution of the threats has evolved, as our potential adversaries have become more powerful and more mobile, and as we have had to shift resources to meet new contingencies, burden-sharing has become imperative for us. Moreover, some of our vital interests lie in the geographical areas that comprise our alliances, and there is no way to defend those areas without major efforts by our allies. If we are to meet the challenges of the 1980s, we must persuade our allies and friends to assume their fair share of the total, common burden.

Our case rests on solid military, political, and economic grounds. Militarily, we need the capabilities they can add. Politically, we must demonstrate to the American people and to their elected representatives a genuine collective security effort based on greater participation by those whose security we help underwrite. Economically, the wealth and resources of our allies should affect the distribution of the burden.

Collective security in the 1980s also will involve more creative and well-targeted use of security assistance and the encouragement of new and renewed regional security arrangements as a means of countering commonly perceived threats. It will require sensitivity to the perceptions and concerns of our partners, more consultation, and more willingness to share in a two-way street of development, procurement, and operation of forces.

C. Flexibility

Because the challenges we face have become more diverse and more widespread, we must employ an even greater degree of flexibility in our military planning than has traditionally been the case. Not only must we be able to respond to predictable threats both within and outside the NATO theater, but we must also be capable of a wide variety of alternate responses, and of appropriate sequential execution of pre-planned responses according to circumstances at the time. While we do not assume that a NATO-Warsaw Pact war would automatically escalate into a worldwide war, we must be prepared for such a likelihood.

D. Arms Control

Equitable and verifiable international agreements that limit the size and capabilities of military arsenals can enhance our security by reducing the military threat arrayed against us, thus helping to reduce the chances of war. They can contribute to improved East-West relations by stabilizing the most dangerous aspects of that competition. And multilateral arms control agreements, such as the Non-Proliferation Treaty, can help avoid regional developments that could threaten U.S. interests.

Discussion of arms control in the context of national security policy has often focused on strawmen--for example, that arms control is an acceptable substitute for military power, or that any arms control agreement is better than no agreement, or that arms control hasn't really accomplished anything. But in fact, while no arms control agreement can prevent, or defend against, the offensive use of weapons, arms control can complement a strong military effort. An arms control agreement that is either faulty in its terms or inadequately verifiable would be insidious, for it would produce only the illusion of greater security, but not greater security itself; a sound and verifiable agreement, on the other hand, can enhance security.

Furthermore, previous arms control agreements have advanced our national security interests--for example, by halting atmospheric nuclear testing with the Limited Test Ban Treaty in 1963; by restraining the spread of nuclear weapon capabilities with the Non-Proliferation Treaty of 1968; by creating nuclear-free zones in the Antarctic, outer space, and the seabeds; by prohibiting a competition in the deployment of destabilizing anti-ballistic missile systems with the 1972 ABM Treaty; and by freezing the number of strategic offensive missile launchers in the 1972 SALT I Interim Agreement.

We strive to preserve this solid progress. We have sought to build upon it with the SALT II Treaty and our other arms control efforts--conventional and nuclear, bilateral and multi-lateral; in particular, we have begun implementing NATO's decisions on modernization of long-range theater nuclear forces (LRTNF) and on LRTNF arms control.

Arms control complements our own defense programs by limiting the threats our military forces must deter or defeat. Two examples will help illustrate the general point. First, it would be both more difficult and more expensive for us to plan, develop, and deploy our strategic nuclear forces if the Soviets were not subject to SALT constraints, for in that case, Soviet forces, in virtually every measurable dimension, could be larger, more powerful, and less susceptible to monitoring than they would be under the terms of the SALT II Treaty. Second, our task of security planning to protect our interests in Southwest Asia, the Middle East, or the Far East, for example, would be considerably greater were additional countries, beyond those who now have nuclear weapons, to develop and deploy them.

Arms control proposals are not ends in themselves; they should be evaluated in terms of their contribution to our security goals, their foreign policy implications, and their arms control rationale. If agreements meet these standards, the United States should be willing to reduce or limit U.S. capabilities where those of the Soviets or other potential adversaries are appropriately limited. But we must always be able to meet our security objectives even if we reach no such agreements, or in case an agreement might be abrogated. To preserve the viability of existing arms control agreements, we must maintain: adequate intelligence to monitor compliance, appropriate hedges to permit us effective responses to detection of violations (should they occur), and strict U.S. observance of applicable limits, which, among other things, facilitates vigorous protest of possible violations.

E. U.S. Advantages

We should exploit fully such advantages as geography, the strengths of our allies, and an advanced technology that can both contribute significantly to our military capabilities and impose additional costs on our adversaries. Some of these advantages are the opposite side of the coin of the Soviet weaknesses I discussed in Chapter 2, but two deserve highlighting here.

One significant U.S. advantage is the voluntary nature of our Alliance. Our allies have freely chosen to associate with us in a coalition, whereas the loyalty of the non-Soviet Pact nations is subject to question. Our allies, unlike those of the Soviets, make significant contributions to combined military capabilities. For example, our European allies would contribute 60 percent of NATO's tactical aircraft, 60 percent of its tanks, and 80 percent of its manpower--after mobilization. Japan has three times as many destroyers as the U.S. Seventh Fleet, more combat aircraft than the U.S. Fifth Air Force, and a larger ground force than the United States maintains in the entire Far East. And in any reasonably likely European or Japanese war scenario, our allies would be fighting to defend their homelands and their own freedom, an intangible factor, but one that could make a decisive difference in the outcome of a war.

U.S. technological advantages in certain key fields are significant and widely recognized. It is essential that we maintain these technological leads, in part because it is neither realistic nor necessary for the United States to match the Soviets quantitatively--gun-for-gun, tank-for-tank, or missile-for-missile--because of the enormous commitment in terms of military manpower and operational costs that would be required, and because our objectives, strategies, and tactics are quite different from theirs.

Let me illustrate this general point with the case of ground forces. The Soviets have a substantial advantage in numbers of troops and of armored assault vehicles. Therefore, we need to develop greatly improved anti-armor weapons for our ground forces and to maintain air superiority in order to deny the Soviets air cover for an armored attack.

We are developing, as fast as we can, a third generation of precision guided munitions--anti-tank missiles. These new weapons, which will be direct-hit, all-weather, fire-and-forget systems, will have a revolutionary impact when they are built and deployed in about the mid-1980s. In the meantime, we are pushing hard on the production of new second generation laser-guided systems such as COPPERHEAD and HELLFIRE, and we are improving the anti-armor weapons already deployed, particularly the TOW anti-tank guided missile. Both of these changes should be incorporated in field equipment in a year or two.

It is also crucial that we maintain air superiority. We judge that we have it today because our airplanes and pilots are superior to those of the Soviets, although their numbers are somewhat greater. But the Soviets are introducing new airplanes that are sophisticated and very capable. We still expect to have some advantage in airplane performance in the mid-1980s, but it will be a narrower edge and may not by itself be sufficient to compensate for the quantitative advantage the Soviets will have by then.

Another classic example of the application of high technology to weapons development and military capability is the long-range, air-launched cruise missile (ALCM), a remarkable weapon system whose future contributions to U.S. strategic capability are clearly depicted in the strategic balance charts in Section I, Chapter 4. The ALCM's ability to penetrate even the most modern Soviet air defenses derives from the combination of five underlying technologies: guidance, warhead, propulsion, low observables, and micro-electronics. The net result is a weapon system that is small enough that a B-52 can carry 20 of them and accurate enough to destroy very hard targets using only a small warhead. Thus we can rely on many small ALCMs rather than fewer, larger B-52s as the means to penetrate Soviet defenses. Moreover, the ALCM is very difficult to detect and track. Once deployed, the ALCM could render the multi-billion dollar, massive Soviet air defense system obsolete.

II. NATIONAL MILITARY STRATEGY

Our basic strategy is deterrence, across the entire spectrum of conflict. Deterrence is a function of three factors: military capabilities, the will to use them, and a potential aggressor's perception of the first two. Thus, implicit in deterrence is the demonstrated ability and determination, should deterrence fail, to deny an aggressor its objectives or to retaliate so as to prevent it from gaining more than it would lose at any level of conflict--from a strategic nuclear exchange, through a major European war, down to small scale aggression that would threaten major U.S. interests in other parts of the world. The third factor, the perceptions of those we seek to deter, must not be overlooked or discounted. That is why, as I have warned on earlier occasions, inaccurate, disparaging, and misleading charges about either our national will or our military capabilities damage our security in fact by compromising deterrence.

A. Planning Priorities

Our three highest planning priorities are as follows:

1. Nuclear Deterrence

While in my judgment nuclear war remains much less likely than other forms of conflict, the unimaginable destruction it would bring makes nuclear deterrence our overriding priority. We must continue to make every effort to reduce this unlikely prospect even further, by demonstrating--especially to the Soviet Union--that we are capable of responding to any level of nuclear attack in such a way as to deny the attacker any net advantage and to guarantee that it would suffer unacceptable losses from our retaliation.

2. Defense of the United States and Our Allies

We must deter or repel any attack against the territory or deployed forces of the United States and our allies. The most essential and most demanding mission for our general purpose forces would be defending against the Soviet Union and its Warsaw Pact allies in a worldwide war.

3. Defense of Other Vital U.S. Interests

We must deter or prevail in any other attack threatening our vital interests, whether or not it involves Soviet forces, Soviet proxies, or a high likelihood of Soviet intervention. Because such contingencies could arise in any number of locations around the world, flexibility and speed must be the hallmarks of our response capabilities. The contributions of local and regional powers are, as I said earlier, a pivotal factor in these scenarios. We must be prepared to contain conflict at the lowest level, especially in those instances that involve Soviet forces or that could escalate to include Soviet involvement and/or lead to a wider war.

B. Regional Strategies and Policies

As we refine the national military strategy into regional strategies tailored to U.S. interests and to the threats in different parts of the world, we incorporate the objectives and requirements I discussed at the beginning of this chapter.

Also, security assistance is properly assuming greater importance in our regional strategies. The creative and tailored use of security assistance is, in many instances, necessary for local forces to be a preferable and effective alternative to direct commitment of U.S. forces to defend shared interests in some parts of the world. Security assistance grafts American experience, productivity, technology, skill, and funding (generally in the form of credits for equipment and grants for training) onto local forces and local interests, bolstering the capabilities and the determination to improve self-defense. These programs have a multiplier effect on the efforts of participating states, thus enhancing their contributions to our common strategy.

If we are to realize the full potential of security assistance, we must arrest and reverse the continuing decline in funding for the program, must streamline our procedures for considering security assistance needs and implementing approved requests, and must enhance Presidential flexibility to use security assistance effectively in a volatile and changing world.

Measured in constant dollars, appropriations for funding security assistance programs today are but a fraction of what they were 20 years ago. Our FY 1981 program is less than one percent of the total defense budget. As we are now perceiving greater opportunities for selective use of security assistance as one tool in our coalition approach to regional security, we must increase the funding available.

Equally important is the problem of long procurement lead-times for military equipment. Too often in the past, we have been unable to respond effectively--that is, promptly--to real security assistance needs of important friendly nations. While in extreme emergencies we could, as we have done, withdraw equipment from U.S. units to meet security assistance requirements, that course should be the exception, not the rule. In most cases, several years elapse between the time we approve a request and the time the assistance is actually delivered--several years during which the need that triggered the request goes unmet, at least by the United States. On the other hand, the Soviets usually can respond in a matter of months, in no small measure because of their substantial inventories. While the Soviets hardly have an unbroken string of successes in building long-term political and military relationships based on military assistance, the clients they have lost--Egypt, Sudan, Indonesia, and Somalia come to mind--did not abandon the relationship because of the time required for Soviet deliveries.

Time can be very important to those in need of military assistance, and, while the deliberate pace of our process is acceptable, even desirable, in many cases, in others it leads to an uncomfortable choice between painful and occasionally dangerous delays for our clients and removal of equipment from our own forces. To address this critical problem, we should create a special fund to procure the kinds of equipment that are most often and most urgently requested, to be available as the need arises; these items would either be used by our forces for training or included in war reserve stocks until they are needed for security assistance emergencies.

Let me turn now to our strategies for individual key regions of the world.

1. Western Europe and NATO

The underlying premise of our strategy and policy in Europe is deterrence. This requires that, together with our allies, we maintain a credible balance with the Warsaw Pact.

For deterrence to be effective, our conventional and nuclear capabilities must include an adequate forward defense against a Warsaw Pact conventional attack, as well as credible, flexible options to escalate the conflict as necessary. We continue to place great emphasis on our ability to respond to a

short warning attack and to fight effectively in the early stages of a conflict; rapid reinforcement is an especially critical ingredient. As we work to bolster our early combat capability, enhancing sustainability must be given a somewhat lesser, but still high, priority.

In order to use combined NATO capabilities most efficiently, we are stressing rationalization, standardization, and interoperability (RSI) both among our own uniformed Services and with our allies. We are proposing legislation that will enhance RSI through reciprocal training. In research and development, we are making special efforts to stress cooperative development and procurement. Our highest interoperability priorities should be in those areas directly related to warfighting: C^3I systems, aircraft cross-servicing, ammunition, battlefield surveillance and target detection and acquisition systems, and spare parts.

Security assistance is crucial for shoring up NATO's southern flank. Portugal, Greece, and Turkey--three of the connecting links along the Mediterranean--are able to contribute more effectively to common NATO security because of the assistance we and our other allies provide them. Because of its strategic location connecting Europe and the Middle East, Turkey is an especially important example of the use of military assistance (and economic assistance as well) to advance our own vital interests, while contributing to the development and the security of other nations.

In carrying out this European strategy, we rely heavily on a policy of division of labor--with each member contributing to the security of all. I shall discuss this very important division of labor more fully in Section I, Chapter 5.

2. Middle East, Persian Gulf, and Indian Ocean

Three factors have combined to give this vast region--from northern Africa through the Middle East and the Persian Gulf, over to the Indian Ocean and South Asia--a new and greater significance in U.S. national security policy: our dependence, and our allies' even greater dependence, on the region's (particularly Persian Gulf) oil resources; endemic, cross-cutting regional rivalries and inherent political instabilities; and the increasingly activist role of the Soviet Union in that part of the world. Our long-standing and continuing special commitment to the security of the state of Israel, as well as its military strengths and political interactions, are also important factors in this region.

Our fundamental policy for this area is to construct a regional security framework emcompassing all of our varied political, economic, and security interests there. Building this framework requires the participation of local states, the United States, and other outside nations, especially in Western Europe and Asia, whose own vital interests are also at stake.

We seek first to help local states to perceive the nature and source of the real external threat to the region, and then to improve their military capabilities to meet legitimate security requirements. American security assistance is integral to this effort. Israel, Egypt, Saudi Arabia, Jordan, and more recently Oman, Somalia, and Kenya are important participants in our various security assistance programs.

Cooperation with Israel and Egypt represents one evolution in our approach to security assistance and illustrates how confidence in the United States can contribute to building peace. The United States remains committed to the Middle East peace process catalyzed by Camp David. We have consciously used security assistance, especially our newer and expanding programs with Egypt, to facilitate progress towards the Egyptian-Israeli Peace Treaty. In part, these programs served to give both states a greater measure of confidence in their own security and in the credibility of the United States, thus enabling and encouraging them to continue negotiations to resolve the remaining issues.

In addition to helping regional powers enhance their defensive military capabilities, we must also strengthen our own ability to assist them in deterring or defending against threats to our shared interests there. We seek no permanent bases in the region for naval units, ground troops, or air forces. Rather, our emphasis is on maintaining a strong naval presence in the region and on being able to move American military forces there quickly in an emergency, with such access to foreign facilities as that requires. Such movement involves developing capabilities tailored in terms of size, strength, and composition to meet a variety of contingencies. It also requires us to enhance our airlift and fast sealift capabilities, to negotiate access to regional airfield and port facilities, and to preposition equipment and supplies in that part of the world.

On a third level, we must seek the assistance of our European and Asian allies whose dependence on Middle East oil is far greater than ours. In some cases, their contributions can be direct--continuing naval presence, airlift and sealift assets, mobile forces. In others, it can be indirect--providing access and transit rights, or increasing their share of the defense burden in their own areas to compensate for our greater effort in securing access to Persian Gulf oil.

The sum total of these efforts by local states, the United States, and our allies will be a more effective deterrent to further Soviet intervention in the region. At the same time, we must also do our utmost to avert nuclear weapon proliferation in the region, which could undermine U.S. efforts to establish a regional security framework.

3. East Asia and the Pacific

Our coalition strategy in this region of historic American interests involves continued cooperation with traditional allies and friends, as well as careful pursuit of our new, evolving relationships with the People's Republic of China. Maintaining a strong U.S. presence in Japan, Korea, and the Philippines is an important sign of our commitment to stability, not only for the six nations with whom we have security commitments, but for the region as a whole.

With traditional allies, such as Australia, New Zealand, Japan, and South Korea, we will strengthen cooperative security through close consultations on defense matters, joint exercises and training, enhanced interoperability, and in selected cases by seeking increased access to local facilities and greater host nation support for U.S. forces. Specifically, we will encourage the Japanese, with their impressive and growing economy and advanced technology, to make steady and significant improvements in their defense capabilities. Other East Asian states, especially the members of ASEAN, should also improve their self-defense forces, and we will seek to assist them on a bilateral basis as appropriate.

Once again, U.S. security assistance will be a key element in advancing U.S. interests and in promoting regional security, especially for South Korea, the Philippines, Thailand, Indonesia, Singapore, Australia, New Zealand, and Malaysia. The benefits of these programs, in terms of greater military capabilities, are shared by all those who have vital interests in the region, including the United States.

Our strategic relationship with China, dating from the 1972 Shanghai Communique, is a new and major facet of our East Asian strategy. The overall improvement of U.S.-Chinese relations ended the "era of confrontation" with China, and accompanied by a dialogue on strategic issues, it contributes to deterrence of Soviet aggression. It paves the way for the United States and China to pursue parallel policies where our interests converge. Following the establishment of diplomatic relations, normalization progressed well in the political, economic, and cultural arenas and was expanded this year into defense. We have established a "China differential" in licensing U.S. dual-use technology exports to the PRC and have set in motion a gradual expansion of military-to-military contacts. We have also offered to sell non-weapon system military equipment to the PRC on a case-by-case basis. Our defense relations with the PRC are a natural outgrowth of normalization of relations and reflect the desire of both the United States and China for a long-term strategic relationship.

4. Latin America

The challenges to our security in our backyard are growing. They are not primarily military in nature, but rather take the form of exploitation of political instability generated by serious economic and social problems.

In light of increased instability in Latin America, greater hostility toward the United States in the Caribbean basin (exacerbated by Cuban arms transfers and support of insurgent groups), and the vulnerability of the South Atlantic sea lines of communication (SLOCs), U.S. defense policies should supplement broader political and economic strategies by:

-- identifying clearly our strategic interests and their relative priorities;

-- maintaining the newly increased U.S. military presence in the Caribbean in order to deter overt or covert Cuban/Soviet military involvement in the hemisphere and to challenge directly Cuban adventurism within and outside the hemisphere;

-- strengthening collective efforts to protect Caribbean and South Atlantic SLOCs; and

-- ensuring that we have the necessary base access, operating, and transit rights, while denying such access to the Soviets.

The Treaty of Tlatelolco, which establishes a nuclear-free zone in Latin America, also significantly enhances our national security by preventing the development of nuclear weapons or their deployment in Latin America. We have ratified Protocol II, applicable to nuclear weapon states, and have signed and

submitted Protocol I to the Senate for its advice and consent to ratification. Protocol I would forbid the deployment of nuclear weapons in those areas for which the United States is responsible (i.e., Puerto Rico, the Virgin Islands, and Guantanamo Naval Base); its ratification would promote our defense interests in the region.

5. Africa

Our long-term interests in Africa include preserving the stability and security of the region, ensuring access to the critical natural resources of the continent, and securing the cooperation of nations along the eastern shore. To protect these interests and to diminish Soviet and Cuban influence in that region are the two principal objectives of our strategy.

Successful pursuit of these objectives will necessitate security assistance and other support to selected countries to help meet their legitimate defense needs and to enhance U.S. influence. We need appropriate access and transit rights, both to support peacetime deployment and to enhance our ability to move forces rapidly to respond to such contingencies as protection and evacuation of U.S. and other personnel, defense of U.S. facilities, and limited peace-keeping missions. As we pursue these objectives, we must tailor our approaches to individual countries in light of their specific requirements and concerns.

III. CONCLUSION

Our national military strategy and our individual regional strategies call for diverse, powerful, and modern military forces. It is to our policies for these forces that I now turn in Chapters 4, 5, and 6.

CHAPTER 4

POLICY FOR FORCES I: STRATEGIC NUCLEAR

The backbone of American military power is our strategic nuclear arsenal--the missiles, submarines, and bombers that can deliver nuclear warheads and bombs to the farthest corners of the world. The unimaginable destructive potential of these weapons gives them a special place in the hierarchy of military power and confers extraordinary responsibilities on those who exercise control over them. It is useful, therefore, to begin our discussion of strategic nuclear forces with a quick review and reminder of the likely effects of a nuclear war, for the prevention of such a war is the primary mission of these weapons.

An all-out nuclear war between the United States and the Soviet Union would involve the use of most of the approximately 16,000 strategic nuclear warheads and bombs the two countries possess. Because the damage done by such an exchange would be unprecedented in scale, indeed indescribable, it is perhaps easier to begin to appreciate the destructive potential of nuclear weapons by looking first at the effects of the use of one typical nuclear weapon--a one megaton warhead, the equivalent of 1,000,000 tons of TNT. As a recent study by the Congressional Office of Technology Assessment points out, if a single such warhead were detonated on a major American city, the effects would include the following:

-- all reinforced concrete structures within a radius of .8 miles would be completely destroyed, as would all small woodframe and brick residences within 3 miles, and all lightly constructed commercial buildings and typical residences within 4.4 miles;

-- virtually everyone within a radius of 1.7 miles would be killed instantaneously, as would more than half of those within 2.7 miles--totalling about a quarter of a million immediate fatalities;

-- anywhere up to 200,000 additional people would eventually die from severe burns; and

-- several hundred thousand others would be injured, including tens of thousands of serious burn victims.

When we move from this highly unlikely one warhead-one city scenario to even so-called "limited" nuclear strikes (and it remains my belief that a "limited" exchange is unlikely to remain limited), the deadly statistics rise correspondingly. Depending on specific conditions (wind, weather, height of burst, number and type of weapons used), a Soviet attack on our ICBM silos alone could produce anywhere from 2 million to 22 million fatalities within 30 days.

For massive nuclear exchanges involving military and economic targets in the United States and the Soviet Union, fatality estimates range from a low of 20-55 million up to a high of 155-165 million in the United States, and from a low of 23-34 million up to a high of 64-100 million in the Soviet Union. Beyond this,

secondary and indirect disruptions of the societies attacked, and longer-term fallout and other consequences to areas outside those attacked, would amplify the damage.

Deterring nuclear war--making that unlikely possibility even more remote--is therefore our highest national security priority. Pursuing this objective requires us to give the most serious and careful attention to our strategic doctrine and plans, the forces themselves, and the process of strategic arms control. Let me discuss each in turn.

I. THE COUNTERVAILING STRATEGY

A significant achievement in 1980 was the codification of our evolving strategic doctrine, in the form of Presidential Directive No. 59. In my Report last year, I discussed the objectives and the principal elements of this countervailing strategy, and in August 1980, after P.D. 59 had been signed by President Carter, I elaborated it in some detail in a major policy address. Because of its importance, however, the countervailing strategy warrants special attention in this Report as well.

Two basic points should underlie any discussion of the countervailing strategy. The first is that, because it is a strategy of deterrence, the countervailing strategy is designed with the Soviets in mind. Not only must we have the forces, doctrine, and will to retaliate if attacked, we must convince the Soviets, in advance, that we do. Because it is designed to deter the Soviets, our strategic doctrine must take account of what we know about Soviet perspectives on these issues, for, by definition, deterrence requires shaping Soviet assessments about the risks of war--assessments they will make using their models, not ours. We must confront these views and take them into account in our planning. We may, and we do, think our models are more accurate, but theirs are the reality deterrence drives us to consider.

Several Soviet perspectives are relevant to the formulation of our deterrent strategy. First, Soviet military doctrine appears to contemplate the possibility of a relatively prolonged nuclear war. Second, there is evidence that they regard military forces as the obvious first targets in a nuclear exchange, not general industrial and economic capacity. Third, the Soviet leadership clearly places a high value on preservation of the regime and on the survival and continued effectiveness of the instruments of state power and control--a value at least as high as that they place on any losses to the general population, short of those involved in a general nuclear war. Fourth, in some contexts, certain elements of Soviet leadership seem to consider Soviet victory in a nuclear war to be at least a theoretical possibility.

All this does not mean that the Soviets are unaware of the destruction a nuclear war would bring to the Soviet Union; in fact, they are explicit on that point. Nor does this mean that we cannot deter, for clearly we can and we do.

The second basic point is that, because the world is constantly changing, our strategy evolves slowly, almost continually, over time to adapt to changes in U.S. technology and military capabilities, as well as Soviet technology, military

capabilities, and strategic doctrine. A strategic doctrine that served well when the United States had only a few dozen nuclear weapons and the Soviets none would hardly serve as well unchanged in a world in which we have about 9,000 strategic warheads and they have about 7,000. As the strategic balance has shifted from overwhelming U.S. superiority to essential equivalence, and as ICBM accuracies have steadily improved to the point that hard target kill probabilities are quite high, our doctrine must adapt itself to these new realities.

This does not mean that the objective of our doctrine changes; on the contrary, deterrence remains, as it always has been, our basic goal. Our countervailing strategy today is a natural evolution of the conceptual foundations built over a generation by men like Robert McNamara and James Schlesinger.

The United States has never--at least since nuclear weapons were available in significant numbers--had a strategic doctrine based simply and solely on reflexive, massive attacks on Soviet cities and populations. Previous administrations, going back almost 20 years, recognized the inadequacy as a deterrent of a targeting doctrine that would give us too narrow a range of options. Although for programming purposes, strategic forces were sometimes measured in terms of ability to strike a set of industrial targets, we have always planned both more selectively (for options limiting urban-industrial damage) and more comprehensively (for a wide range of civilian and military targets). The unquestioned Soviet attainment of strategic parity has put the final nail in the coffin of what we long knew was dead--the notion that we could adequately deter the Soviets solely by threatening massive retaliation against their cities.

This Administration's systematic contributions to the evolution of strategic doctrine began in the summer of 1977, when President Carter ordered a comprehensive review of U.S. strategic policy to ensure its continued viability and deterrent effect in an era of strategic nuclear parity. Over the next 18 months, civilian and military experts conducted an extensive review, covering a wide range of issues, including U.S. and Soviet capabilities, vulnerabilities, and doctrine. As soon as the report was ready, implementation began. The broad set of principles this review yielded constitute the essence of the countervailing strategy. I outlined these in my FY 1981 Defense Report and reviewed them at the NATO Nuclear Planning Group meeting in Norway in June 1980. Three years after he ordered the initial review, President Carter signed the implementing directive--P.D. 59--formally codifying the countervailing strategy and giving guidance for the continuing evolution of U.S. planning, targeting, and systems acquisition. In September 1980, Secretary of State Muskie and I testified on the countervailing strategy and P.D. 59 before the Senate Foreign Relations Committee. Again, in November of 1980, I engaged in extensive and intensive discussions of the countervailing strategy with our NATO Allies, this time at the fall Nuclear Planning Group meeting.

Our countervailing strategy--designed to provide effective deterrence--tells the world that no potential adversary of the United States could ever conclude that the fruits of his aggression would be worth his own costs. This is true whatever the level of conflict contemplated. To the Soviet Union, our strategy makes clear that no course of aggression by them that led to use of nuclear weapons, on any scale of attack and at any stage of conflict, could lead to victory, however they

may define victory. Besides our power to devastate the full target system of the USSR, the United States would have the option for more selective, lesser retaliatory attacks that would exact a prohibitively high price from the things the Soviet leadership prizes most--political and military control, nuclear and conventional military force, and the economic base needed to sustain a war.

Thus, the countervailing strategy is designed to be fully consistent with NATO's strategy of flexible response by providing options for appropriate response to aggression at whatever level it might occur. The essence of the countervailing strategy is to convince the Soviets that they will be successfully opposed at any level of aggression they choose, and that no plausible outcome at any level of conflict could represent "success" for them by any reasonable definition of success.

Five basic elements of our force employment policy serve to achieve the objectives of the countervailing strategy.

A. Flexibility

Our planning must provide a continuum of options, ranging from use of small numbers of strategic and/or theater nuclear weapons aimed at narrowly defined targets, to employment of large portions of our nuclear forces against a broad spectrum of targets. In addition to pre-planned targeting options, we are developing an ability to design other employment plans--in particular, smaller scale plans--on short notice in response to changing circumstances.

In theory, such flexibility also enhances the possibility of being able to control escalation of what begins as a limited nuclear exchange. I want to emphasize once again two points I have made repeatedly and publicly. First, I remain highly skeptical that escalation of a limited nuclear exchange can be controlled, or that it can be stopped short of an all-out, massive exchange. Second, even given that belief, I am convinced that we must do everything we can to make such escalation control possible, that opting out of this effort and consciously resigning ourselves to the inevitability of such escalation is a serious abdication of the awesome responsibilities nuclear weapons, and the unbelievable damage their uncontrolled use would create, thrust upon us. Having said that, let me proceed to the second element, which is escalation control.

B. Escalation Control

Plans for the controlled use of nuclear weapons, along with other appropriate military and political actions, should enable us to provide leverage for a negotiated termination of the fighting. At an early stage in the conflict, we must convince the enemy that further escalation will not result in achievement of his objectives, that it will not mean "success," but rather additional costs. To do this, we must leave the enemy with sufficient highly valued military, economic, and political resources still surviving but still clearly at risk, so that he has a strong incentive to seek an end to the conflict.

C. Survivability and Endurance

The key to escalation control is the survivability and endurance of our nuclear forces and the supporting communications, command and control, and intelligence (C^3I) capabilities. The supporting C^3I is critical to effective

deterrence, and we have begun to pay considerably more attention to these issues than in the past. We must ensure that the United States is not placed in a "use or lose" situation, one that might lead to unwarranted escalation of the conflict. That is a central reason why, while the Soviets cannot ignore our capability to launch our retaliatory forces before an attack reaches its targets, we cannot afford to rely on "launch on warning" as the long-term solution to ICBM vulnerability. That is why the new MX missile should be deployed in a survivable basing mode, not in highly vulnerable fixed silos, and that is why we spend considerable sums of money to ensure the continued survivability of our ballistic missile submarine fleet. Survivability and endurance are essential prerequisites to an ability to adapt the employment of nuclear forces to the entire range of potentially rapidly changing and perhaps unanticipated situations and to tailor them for the appropriate responses in those situations. And, without adequate survivability and endurance, it would be impossible for us to keep substantial forces in reserve.

D. Targeting Objectives

In order to meet our requirements for flexibility and escalation control, we must have the ability to destroy elements of four general categories of Soviet targets.

1. Strategic Nuclear Forces

The Soviet Union should entertain no illusion that by attacking our strategic nuclear forces, it could significantly reduce the damage it would suffer. Nonetheless, the state of the strategic balance after an initial exchange--measured both in absolute terms and in relation to the balance prior to the exchange--could be an important factor in the decision by one side to initiate a nuclear exchange. Thus, it is important--for the sake of deterrence--to be able to deny to the potential aggressor a fundamental and favorable shift in the strategic balance as a result of a nuclear exchange.

2. Other Military Forces

"Counterforce" covers much more than central strategic systems. We have for many years planned options to destroy the full range of Soviet (and, as appropriate, non-Soviet Warsaw Pact) military power, conventional as well as nuclear. Because the Soviets may define victory in part in terms of the overall post-war military balance, we will give special attention, in implementing the countervailing strategy, to more effective and more flexible targeting of the full range of military capabilities, so as to strengthen deterrence.

3. Leadership and Control

We must, and we do, include options to target organs of Soviet political and military leadership and control. As I indicated earlier, the regime constituted by these centers is valued highly by the Soviet leadership. A clear U.S. ability to destroy them poses a marked challenge to the essence of the Soviet system and thus contributes to deterrence. At the same time, of course, we recognize the role that a surviving supreme command could and would play in the termination of hostilities, and can envisage many scenarios in which destruction of them

would be inadvisable and contrary to our own best interests. Perhaps the obvious is worth emphasizing: possession of a capability is not tantamount to exercising it.

4. Industrial and Economic Base

The countervailing strategy by no means implies that we do not--or no longer--recognize the ultimate deterrent effect of being able to threaten the full Soviet target structure, including the industrial and economic base. These targets are highly valued by the Soviets, and we must ensure that the potential loss of them is an ever-present factor in the Soviet calculus regarding nuclear war. Let me also emphasize that while, as a matter of policy, we do not target civilian population per se, heavy civilian fatalities and other casualties would inevitably occur in attacking the Soviet industrial and economic base, which is collocated with the Soviet urban population. I should add that Soviet civilian casualties would also be large in more focused attacks (not unlike the U.S. civilian casualty estimates cited earlier for Soviet attacks on our ICBM silos); indeed, they could be described as limited only in the sense that they would be significantly less than those resulting from an all-out attack.

E. Reserve Forces

Our planning must provide for the designation and employment of adequate, survivable, and enduring reserve forces and the supporting C^3I systems both during and after a protracted conflict. At a minimum, we will preserve such a dedicated force of strategic weapon systems.

* * *

Because there has been considerable misunderstanding and misinterpretation of the countervailing strategy and of P.D. 59, it is worth restating what the countervailing strategy is not.

-- It is not a new strategic doctrine; it is not a radical departure from U.S. strategic policy over the past decade or so. It is a refinement, a re-codification of previous statements of our strategic policy. It is the same essential strategic doctrine, restated more clearly and related more directly to current and prospective conditions and capabilities--U.S. and Soviet.

-- It does not assume, or assert, that we can "win" a limited nuclear war, nor does it pretend or intend to enable us to do so. It does seek to convince the Soviets that they could not win such a war, and thus to deter them from starting one.

-- It does not even assume, or assert, that a nuclear war could remain limited. I have made clear my view that such a prospect is highly unlikely. It does, however, prepare us to respond to a limited Soviet nuclear attack in ways other than automatic, immediate, massive retaliation.

-- It does not assume that a nuclear war will in fact be protracted over many weeks or even months. It does, however, take into account evidence of Soviet thinking along those lines, in order to convince them that such a course, whatever its probability, could not lead to Soviet victory.

-- It does not call for substituting primarily military for primarily civilian targets. It does recognize the importance of military and civilian targets. It does provide for increasing the number and variety of options available to the President, covering the full range of military and civilian targets, so that he can respond appropriately and effectively to any kind of an attack, at any level.

-- It is not inconsistent with future progress in arms control. In fact, it does emphasize many features--survivability, crisis stability, deterrence--that are among the core objectives of arms control. It does not require larger strategic arsenals; it does demand more flexibility and better control over strategic nuclear forces, whatever their size.

-- Lastly, it is not a first strike strategy. Nothing in the policy contemplates that nuclear war can be a deliberate instrument for achieving our national security goals, because it cannot be. The premise, the objective, the core of our strategic doctrine remains unchanged--deterrence. The countervailing strategy, by specifying what we would do in response to any level of Soviet attack, serves to deter any such attack in the first place.

II. CONTRIBUTING OBJECTIVES

In order for the deterrent our countervailing strategy provides to remain credible in the face of changing conditions, we must also ensure that the overall capability of our strategic nuclear forces is never allowed to become inferior--in appearance or in fact--to that of our Soviet adversary. Maintenance of a strategic balance characterized by essentially equivalent forces strengthens deterrence by dispelling any illusion on either side that the outcome of a nuclear war could be advantageous. To this extent, equivalent forces contribute to stability by reducing any temptation to use nuclear weapons for pre-emptive or coercive aggression. For these reasons, we pursue essential equivalence and stability as objectives in their own right, inasmuch as both conditions reduce the likelihood of nuclear war.

A. Essential Equivalence

It is inevitable that comparisons will be made of the strategic forces of the United States and of the Soviet Union--made by the two nuclear giants themselves and by others. In view of the vast and many differences in geography, technological advancement, bureaucratic organization, historical experience, and military doctrine that have influenced the development of the two strategic arsenals, such comparisons do not lend themselves to mathematical precision. There are no simple formulas for the analyst to use to determine precisely, for example, how much aggregate ICBM throwweight for one side is "equivalent to" a given level of accuracy in cruise missiles for the other side. Nonetheless, a variety of measures are used in attempts to evaluate the overall balance between the two forces, and I will discuss a number of those shortly.

Aggregate comparisons have been made over the years. Today, such comparisons lead me to the conclusion that while the era of U.S. superiority is long past, parity--not U.S. inferiority--has replaced it, and the United States and the Soviet Union are roughly equal in strategic nuclear power. In the past, I have defined this "essential equivalence" as the maintenance of four conditions:

1. Soviet strategic nuclear forces do not become usable instruments of political leverage, diplomatic coercion, or military advantage;

2. nuclear stability, especially in a crisis, is maintained;

3. any advantages in strategic force characteristics enjoyed by the Soviets are offset by U.S. advantages in other characteristics; and

4. the U.S. strategic posture is not in fact, and is not seen as, inferior in performance to that of the Soviet Union.

These four conditions still constitute a valid description of essential equivalence, and, using those four conditions, I conclude that the strategic nuclear forces of our two countries remain essentially equivalent.

The last condition highlights what theorists of international politics have long held: that perceptions can be as important as realities in the international arena. That is why the overall strategic balance is important both militarily and politically. Indeed, in some sense, the political advantages of being seen as the superior strategic power are more real and more usable than the military advantages of in fact being superior in one measure or another. Thus, those who emphasize one specific index of strategic power, out of the many that can legitimately be used, often do a disservice, in helping to create a misperception of the actual state of the overall balance--a misperception that can have serious political consequences.

In fact, essential equivalence is relatively insensitive to minor changes in specific indices of strategic power, because the two nuclear arsenals are so vast that minor variations have even smaller consequences, both militarily and politically. This is not to say that the major, long-term, overall trends are insignificant, or that we could afford to be sanguine were they all moving in the direction of the Soviets. On the contrary, because many trends have been and are moving in the Soviets' favor, we have committed ourselves to a substantial, long-term, but carefully planned modernization, tailored to American strengths and Soviet weaknesses, of all three legs of our strategic triad--in order to maintain essential equivalence.

B. Stability

One of the conditions of essential equivalence, stability is itself one of the factors contributing to deterrence. Indeed, several times in my discussion of the countervailing strategy I referred to stability in that context--as helping to strengthen deterrence.

We are committed to strengthening stability in several major ways--by increasing the survivability and endurance of our strategic forces, by improving both our strategic intelligence capabilities (for warning of Soviet attack or even Soviet preparations for attack) and our strategic C^3 capabilities (for safe and secure operation of our nuclear forces), and by negotiating equitable and verifiable arms control agreements. It is also important to ensure that the Soviets do not hold any perception that our national leadership might be vulnerable

to a decapitating pre-emptive attack. P.D. 58 addresses improvements in the continuity of government and is thus closely linked to P.D. 59. Over the long term, we must hedge against any Soviet "break-throughs" that could suddenly and substantially alter the strategic balance. Our effort to do so is two-pronged: improving our intelligence capabilities regarding Soviet developments and maintaining our own technological advantages in those areas most important to us.

Thus, both in times of crisis and over the long haul, we seek to reduce the incentives and the opportunities for Soviet advances that could shatter deterrence. Overall, our strategic nuclear forces are at least as capable of surviving an attack and of retaliating as Soviet forces, so conditions of both essential equivalence and stability presently exist. Our strategic programs are designed to maintain essential equivalence and stability in the future.

III. STRATEGIC NUCLEAR FORCES

A. The Soviet Threat

1. Strategic Offensive Forces

The momentum of Soviet strategic growth continues, although because of SALT limits, there has been very little change over the past year in terms of numbers of strategic launchers. But the Soviets' major modernization programs portend enhanced capabilities over the next decade in all three components of their strategic forces--ICBMs, SLBMs, and bombers.

The Soviet ICBM force currently consists of over 500 SS-11s, 50 SS-13s, about 150 SS-17s, over 300 SS-18s, and about 300 SS-19s; the last three types are mostly equipped with multiple, independently-targetable reentry vehicles (MIRVs). The Soviets are expected to complete their current ICBM modernization program (SS-17, SS-18, and SS-19) in the early 1980s, with the deployment of the remaining planned SS-18s (see Table 4-1). There is no doubt that completion of this program will give the Soviets a sufficient number of accurate warheads to pose a serious threat to our fixed silo ICBM force.

TABLE 4-1

SOVIET MIRVed ICBMs

Missile	SS-17		SS-18			SS-19	
Number Deployed	About 150		Over 300			About 300	
MOD No.	1	2	1	2	3	1	2
Warheads	4	1	1	8/10	1	6	1
Max Range (km)	10,000	11,000	12,000	11,000	16,000	9,600	10,000
Launch Mode	Cold	Cold	Cold	Cold	Cold	Hot	Hot
Fuel	Liquid	Liquid	Liquid	Liquid	Liquid	Liquid	Liquid

We do not expect the completion of this generation to mark the end of Soviet ICBM modernization. We have already identified four follow-on types or modifications of existing types. The Soviets may develop mobile ICBMs other than the SS-16, which has already been developed but not deployed. (Its deployment or further testing and production would be banned under the terms of the SALT II Treaty.)

The Soviet ballistic missile submarine force currently consists of SS-N-6 missiles on YANKEE class submarines, SS-N-6s on a GOLF class submarine, SS-N-8s on DELTA I and II class SSBNs, SS-N-8s on GOLF and HOTEL classes, and MIRVed SS-N-18s on the DELTA III class. (There are also SS-N-5s on HOTEL submarines, and launchers of the experimental SS-NX-17 on a YANKEE submarine.) Modernization of the Soviet submarine-launched ballistic missile force also continues with both new submarines and new missiles. New Soviet SLBM systems will be qualitatively superior to those they replace--they will probably be more accurate and have greater throwweight, and the new TYPHOON SLBM (the SS-NX-20) almost certainly will be MIRVed.

Consistent with the terms of the SALT I Interim Agreement, the Soviets have continued to dismantle older YANKEE class submarines (five, so far) to accommodate the introduction of the newer DELTA class boats. The newest Soviet SSBN, the TYPHOON, the first of which was launched recently, is the largest they have built and carries 20 launch tubes.

The new SS-NX-20 is expected to be deployed in the TYPHOON SSBN, but not before the mid-1980s at the earliest. It is possible that the Soviets will also develop follow-on SLBMs as replacements for the SS-N-6,the SS-N-8, and the SS-N-18.

The Long-Range Aviation (LRA) operational force of long-range bombers consists of 49 BISON bombers (soon to be phased out of the inventory) and 100 BEAR bombers and ASM carriers, plus Soviet Naval Aviation (SNA) ASW aircraft. We have been expecting the Soviets to develop a new long-range bomber for several years.

In addition, the Soviet LRA force of bombers includes about 65-70 BACKFIRES, about 320 BADGERS, and about 140 BLINDERS. With continued deployment of more BACKFIREs to Long-Range Aviation (and to Soviet Naval Aviation units as well), this component of the Soviet bomber force is becoming larger and more capable. (These peripheral attack bombers are also referred to in Section I, Chapters 5 and 6).

2. Strategic Defensive Forces

The Soviet ABM system will apparently be upgraded. Probably in preparation for installation of a new system, half of the 64 launchers have been dismantled at the one site (Moscow) they are permitted under the ABM Treaty. ABM research and development continues. This activity is consistent with the 1972 ABM Treaty, and we anticipate that they will modernize the Moscow defense system, also in ways consistent with Treaty limits.

In the area of air defense, the Soviets appear to be making significant improvements--including a look-down/shoot-down interceptor, the new SA-10 surface-to-air missile system, enhanced air surveillance control systems, and an AWACS with look-down capability. Taken together, these systems, when operational, will pose significant challenges to the penetrating capability of our current bomber force.

3. Civil Defense

During the past year, new evidence and analysis have shed more light on the Soviet civil defense program. Soviet civil defense is a large, ongoing program focused primarily on (1) protecting from the effects of military attacks: the leadership, the work force at key economic facilities, and the general population, in that order; (2) facilitating the continuity of economic activity during war; and (3) enhancing the capability for recovery from the effects of war. Some aspects of Soviet civil defense activity have been marked by bureaucratic difficulties and public apathy, but on the whole there has been a general trend of improvement in almost all facets of the civil defense program over the past decade.

Shelters are available for around 10 percent of the residents in Soviet cities with populations of 25,000 or more. The vast majority of the Soviet urban population would, therefore, have to be evacuated to receive any protection. With adequate warning time, the Soviets plan to evacuate to areas outside large cities those people not required to support essential activities. At key economic facilities, the work force on duty would be protected by shelters, while the off-duty personnel would be dispersed to zones within commuting distance outside the city. There is little evidence to suggest a comprehensive program to harden or disperse economic production installations themselves. The effectiveness of this program as a whole is, in my view, highly questionable; its most dangerous aspect is that the Soviet leadership might believe it effective, and behave accordingly.

As noted last year, the Soviet civil leadership personnel would also relocate from their hardened urban command posts to alternate exurban facilities. There are blast shelters within and outside cities sufficient to accommodate the majority of Soviet leaders at all levels of government.

B. Other Nuclear Capabilities

The United Kingdom continues to maintain four RESOLUTION-class SSBNs, armed with 64 POLARIS A-3 missiles. The British government has decided to modernize the U.K. nuclear deterrent, while continuing Britain's commitment to a strong conventional defense. In July 1980, the United States and the United Kingdom announced agreement for UK purchase of the U.S. TRIDENT I submarine ballistic missile system for use in the new SSBNs which the United Kingdom plans to construct as replacements for its existing missile submarine-launched force. This method of implementing the UK decision on its deterent forces is a further example of our continued close defense cooperation on both nuclear and conventional forces, which enhances the security not only of the United States and the United Kingdom, but of our allies and the world generally.

France has four REDOUBTABLE-class SSBNs, which will have 64 M-2 or M-20 missiles, and plans to deploy two more SSBNs and modernize her SLBMs with the M-4

system, which has some limited MIRV capability. Modernization of her fixed land-based IRBMs also is underway. In addition, France has announced her intention to develop mobile IRBMs and possibly air-launched cruise missiles.

The People's Republic of China currently deploys three types of liquid-fuel ballistic missiles: MRBMs (the CSS-1 with a range of about 1,000 kilometers); IRBMs (the CSS-2 with a range of around 2,500 kilometers); and multi-stage ICBMs (the CSS-3 with a maximum range of 7,000 kilometers). We also believe that the CSS-4 ICBM (with a range of over 10,000 kilometers) will soon be operational. The Chinese, in addition, have TU-16 (BADGER) and TW-4 (BULL) medium-range bombers with an operational radius of about 3,000 kilometers. There is little progress to report on the PRC's SLBM program, although work probably still continues on a nuclear-powered submarine and a solid fuel missile to go with it.

C. U.S. Capabilities and Programs

1. Strategic Offensive Forces

Our strategic offensive forces are a carefully balanced mix of intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles (SLBMs), and bombers. All three legs are being modernized.

Our ICBM force currently consists of:

-- 54 single-warhead TITAN IIs (two of which are out of commission);

-- 450 single-warhead MINUTEMAN IIs; and

-- 550 MIRVed MINUTEMAN IIIs, a total of 300 of which will eventually be equipped with the MK12A warhead.

Our major ICBM modernization effort is the MX program. In the latter half of this decade, the MX, with its mobile basing mode, will fulfill our highest strategic modernization priority: to reduce ICBM vulnerability. Equipped with either the MK12A or (if necessary) an improved reentry vehicle, and based in a very much more survivable mode, the MX will give us a land-based retaliatory force that poses a formidable challenge to Soviet targetters and provides flexible second-strike capabilities consistent with the range of options subsumed by our countervailing strategy. The initial operational capability (IOC) for MX is scheduled for July 1986 and full operational capability (FOC) by the end of 1989.

The basing scheme is key to MX's contribution to deterrence, for it is the basing scheme that determines the degree of survivability or vulnerability. When this Administration came into office, many concepts were being studied, but there was no workable MX basing scheme that gave high confidence of significantly reducing the vulnerability most experts agreed was inevitable for fixed-silo ICBMs. That has been the difficult part of the MX program, and providing survivability remains the most important task, not the design of the missile itself. Our solution--the horizontal basing mode consisting of 4,600 shelters for 200 missiles and

launchers with connecting roadways--evolved over the past several years as we reviewed more than 30 alternative proposals. I am convinced that the scheme we have selected meets the essential criteria--survivability, cost-effectiveness, environmental considerations, and verifiability. Each of these criteria is important. Most of them are discussed in the programmatic description of MX (Section II, Chapter 1).

But the last criterion--verifiability--has been the subject of some debate connected with views of SALT II. In this context, verifiability means that the Soviets, by relying on national technical means alone--and without regard either for the openness of our society or the possibility of clandestine data gathering--can determine the number of launchers deployed. We have chosen to employ this exacting standard--and fulfillment in no way compromises operational capability--not as a favor to the USSR and certainly not because we believe they must rely wholly on national technical means. Rather, we have judged that if--or rather, when--the Soviets move to a mobile ICBM scheme, our security interests will be far better served if we can confront them, in a SALT environment, with not only a requirement of verifiability, but a demonstration that this requirement can be met. Were the Soviets to go mobile with no obligation or concern regarding verifiability, the strategic challenge generated by the possible uncertainties of such a system could be considerably increased.

Our SLBM forces currently consist of the following:

-- 80 POLARIS A-3 missiles on the 5 POLARIS submarines remaining in active service as SSBNs;

-- 304 POSEIDON C-3 missiles on 19 POSEIDON submarines;

-- 96 TRIDENT C-4 missiles on 6 POSEIDON submarines; and

-- 96 TRIDENT C-4 missiles for 6 POSEIDON submarines currently undergoing or scheduled to undergo conversion.

Both the TRIDENT missile and the TRIDENT submarine programs enhance the survivability of our ballistic missile submarine force. The missile's longer range enables the submarine carrying it to hide in a far wider area of the ocean, while still remaining within range of its assigned targets. The TRIDENT submarine itself is quieter and can stay at sea longer than its predecessors. Taken together, these advantages will compound the already serious challenges that confront Soviet anti-submarine warfare planners. Especially now, in a period of increasing ICBM vulnerability, there should be no doubts about the paramount importance of preserving for the future the high degree of survivability our SSBN fleet has always enjoyed.

The backfitting of the newer, longer-range TRIDENT C-4 (or TRIDENT I) missile onto a large portion of our POSEIDON submarine force is continuing and is fully on schedule; six ships have been backfitted, and another six are scheduled to be by the end of FY 1982. The first of the powerful TRIDENT submarines--the USS OHIO--is now expected to go on sea trials this year. The second--the USS MICHIGAN--was launched in 1980.

Consistent with the terms of the SALT I Interim Agreement, we dismantled the 32 launchers on two previously deactivated POLARIS submarines, in order to compensate for the new TRIDENT submarine's 24 launchers. The remaining eight POLARIS ships are planned to be converted to an attack submarine role (the five remaining in active service as SSBNs and three already decommissioned as SSBNs). We will, however, retain (at least until September 1981) the option to keep three of the POLARIS submarines as SSBNs for several more years.

Current SLBMs lack the accuracy necessary for use against hardened targets, and will not use the full throw-weight potential of the TRIDENT submarine launch tubes. We are continuing research and development on a follow-on SLBM to provide higher accuracy, and keeping open the option for a larger missile to provide more payload and/or greater range. In about a year's time, a decision can be made on whether to move into full-scale development of this missile.

The third leg of the triad currently consists of:

-- 347 B-52 long-range bombers, organized in 20 operational and three training squadrons;

-- 65 FB-111 medium-range bombers organized in four operational squadrons and one training squadron; and

-- 615 KC-135 tanker aircraft in 32 active, one training, and 16 reserve component squadrons.

To enhance the ability of our bomber forces to strike their assigned targets, we are fully engaged in a program to equip all 172 B-52Gs for air-launched cruise missiles (ALCMs).

Shortly after coming into office, I made a decision to proceed with full-scale development of a long-range ALCM. Last year, after an intensive fly-off competition between two competing models, we announced the selection of the Boeing AGM-86B for ALCM production. The results of that concentrated effort demonstrate once again the pathbreaking contributions American technology can make to our military capabilities. The ALCM is a weapon that is difficult to detect, difficult to track, and difficult to attack. It will ensure the continued effectiveness of our bomber force against Soviet air defenses well into the 1990s.

We are also continuing with options to enhance the future potential of the bomber leg of the triad. We are looking at various ALCM technology improvements to ensure the survivability and effectiveness of the ALCM in the future. We have underway a vigorous study examining future bomber alternatives, including B-1 and FB-111 derivatives, and new high technology aircraft based on low observable technology, which we are convinced offers great promise for a future manned bomber. We are continuing to study options for a new penetrating bomber. We must keep in mind that in the decade of the 1990s and beyond, the difference between "penetrating" and "stand-off" really means, for all strategic and most general purpose use, the difference between long-range stand-off and short-range stand-off missiles. The stand-off bomber would avoid area defenses; the penetrating bomber would avoid terminal defenses.

But a future bomber must be considered not only in the role of a strategic penetrator, but also in the broader context of worldwide force projection and cruise missile carrier missions. These missions involve varying demands on performance (e.g., the strategic mission is most demanding in terms of penetration capability) and schedule (e.g., the B-52 can function as a cruise missile carrier for some time to come). The decision on an appropriate development program for a long-range combat aircraft must be based on assessment of the most critical performance needs, schedule, and the compatibility of the available supporting technology.

2. Strategic Defense

It remains our policy to provide on a timely basis adequate strategic and tactical warning of an aerospace attack on North America, as well as accurate assessments of the size, scope, and objectives of such an attack.

The Anti-Ballistic Missile Treaty of 1972 remains in force, to the benefit of strategic stability and deterrence. In 1976, our one ABM site (which we would have been permitted to operate under the terms of the Treaty) was deactivated on the grounds of limited effectiveness. Its Perimeter Acquisition Radar is being operated by the Air Force in an early warning and attack characterization role. At the same time, we are actively pursuing research, fully consistent with the terms of the Treaty, on ballistic missile defense. Primary emphasis in ballistic missile defense research and development is on the demonstration of a point defense capability for hardened strategic targets such as ICBMs, and on the development of concepts for interception and non-nuclear destruction of hostile ICBMs outside the earth's atmosphere.

Also, it continues to be our policy to work jointly with Canada to maintain an air defense system capable of providing tactical warning and attack characterization. The interceptor force assigned to these missions also provides a limited defense capability and would be employed to control access to North American airspace. In time of crisis, these interceptors could be augmented by CONUS-based air assets capable of performing the air defense mission.

In the area of civil defense, DoD retains policy oversight responsibilities for the population protection and nuclear attack preparedness programs administered by the Federal Emergency Management Agency.

As for space defense, the United States would prefer not to engage in an uncontrolled competition in anti-satellite (ASAT) capabilities. It is our view that, because both the United States and the Soviet Union rely heavily on satellites for a number of military and civilian services, the interests of both countries would be better served by concluding an equitable and verifiable agreement limiting anti-satellite capabilities. To this end, we have engaged in several negotiating sessions with the Soviets over the past several years, but we have not been able to conclude a mutually satisfactory agreement.

In the meantime, while the negotiations are in abeyance and the Soviets continue work on their already tested ASAT system, the United States is committed to a vigorous ASAT research and development program of its own.

3. Strategic Command, Control, and Communications

Our strategic command, control and communications (C^3) systems must provide the National Command Authorities (NCA) with flexible operational control of the strategic forces at all levels of conflict, during or after an enemy attack. This means we need survivable tactical warning and assessment of an enemy attack, survivable command centers for decision-making and direction of the strategic forces, and survivable communications to transmit retaliatory orders to the forces. Strategic C^3 must also facilitate termination of nuclear conflict, and thus includes the capacity to communicate with adversaries. Our countervailing strategy requires that strategic C^3 be able not only to support assured retaliation after an initial surprise attack, but also to provide some capability to conduct a more controlled exchange and to manage our strategic reserve forces throughout a nuclear war of some duration. The survivability, flexibility, and endurance of these C^3 systems should be equal to that of our strategic forces.

To this end, we will continue to improve our ground-based radars and space-based sensors for strategic surveillance and warning. We plan to improve our airborne command posts and take other steps so as to enhance survivable decision-making and direction of the strategic forces. And we will reduce the vulnerability of our strategic communications to physical attack, jamming, and nuclear effects, so that we can reliably transmit orders to our forces in a nuclear war.

Our program emphasizes enhancing the survivability of our tactical warning systems, strategic command centers, and communications. We must be certain that needed C^3 capabilities survive the first strike and endure for as long as our strategic forces. Furthermore, for flexible employment of our strategic forces, our C^3I systems must be able to monitor the status of our own and enemy forces. Our programmed C^3 improvements also contribute to endurance and flexibility, and we need to emphasize these attributes more heavily in the future.

D. The Strategic Balance

As I said earlier in this chapter, comparisons are commonly made of the strategic capabilities of the United States and the Soviet Union--both in terms of the overall balance and in terms of a wide variety of specific indices. As is customary, this Annual Report includes such assessments. Essential equivalence, as indicated earlier, still characterizes the overall balance.

Beyond the qualitative determination of essential equivalence, a number of quantitative measures are also used to compare strategic capabilities; these fall into two general categories--static and dynamic. The former includes numerical measures of particular force characteristics or capabilities such as number of launchers, number of weapons, megatonnage, throw-weight, and hard-target kill capability. The latter involves analyses of hypothetical scenarios to measure the potential effectiveness of each strategic force against its likely set of designated targets. As methodological tools, both types of measures have advantages and disadvantages.

The static measures focus on very specific attributes, isolating them from "real world" factors inherent in any actual attack situation. At the same time, these measures are simple to calculate and to understand, relatively few in number, and fairly straightforward. They are a convenient shorthand way to transcribe very large, very complex realities, and they may also be very important as far as perceptions of the balance are concerned.

The dynamic measures, on the other hand, are more valuable to the professional analyst, because they permit more sophisticated analysis that addresses force capabilities, not merely characteristics. But, they too are limited; they are "scenario-driven," that is, their validity and meaningfulness are a function of how realistic and how probable is the scenario chosen to derive the statistics. And, they usually show only one of many possible scenarios. Like the static measures, they cannot incorporate real, important, yet hard-to-quantify factors such as leadership, motivation, C^3, training, and maintenance.

In looking at strategic comparisons, it is important to remember that the two nuclear arsenals are so vast and so diverse that no single quantitative measure can evaluate their overall capabilities. Each measure depicts one aspect of the strategic relationship--more or less accurately, more or less fully.

TABLE 4-2

U.S. AND SOVIET STRATEGIC FORCE LEVELS

	1 JANUARY 1980		1 JANUARY 1981	
	U.S.	USSR	U.S.	USSR
OFFENSIVE				
OPERATIONAL ICBM LAUNCHERS 1/2/	1,054	1,398	1,054	1,398
OPERATIONAL SLBM LAUNCHERS 1/3/	656	950	576	950
LONG-RANGE BOMBERS (TAI) 4/				
OPERATIONAL 5/	348	156	347	156
OTHERS 6/	225		223	
FORCE LOADINGS 7/				
WEAPONS	9,200	6,000	9,000	7,000
DEFENSIVE 8/				
AIR DEFENSE SURVEILLANCE RADARS	88	7,000	91	7,000
INTERCEPTOR AIRCRAFT (TAI)	327	2,500	312	2,500
SAM LAUNCHERS	0	10,000	0	10,000
ABM DEFENSE LAUNCHERS	0	64	0	32

1/ INCLUDES ON-LINE MISSILE LAUNCHERS AS WELL AS THOSE IN CONSTRUCTION, IN OVERHAUL, REPAIR, CONVERSION, AND MODERNIZATION

2/ DOES NOT INCLUDE TEST AND TRAINING LAUNCHERS OR 18 LAUNCHERS OF FRACTIONAL ORBITAL MISSILES AT TYURA TAM TEST RANGE

3/ INCLUDES LAUNCHERS ON ALL NUCLEAR-POWERED SUBMARINES AND, FOR THE SOVIETS, OPERATIONAL LAUNCHERS FOR MODERN SLBMs ON G-CLASS DIESEL SUBMARINES. EXCLUDED ARE 48 SALT-ACCOUNTABLE LAUNCHERS ON 3 POLARIS SUBMARINES NOW USED AS ATTACK SUBMARINES

4/ 1981 FIGURES EXCLUDE FOR THE U.S.: 65 FB-111s; FOR THE USSR: OVER 100 BACKFIRES, ABOUT 120 BISON TANKERS, BEAR ASW AIRCRAFT, AND BEAR RECONNAISSANCE AIRCRAFT

5/ INCLUDES DEPLOYED, STRIKE-CONFIGURED AIRCRAFT ONLY.

6/ INCLUDES, FOR U.S., B-52s USED FOR MISCELLANEOUS PURPOSES AND THOSE IN RESERVE, MOTHBALLS OR STORAGE, AND 4 B-1 PROTOTYPES; FOR THE USSR: BEARS AND BISONS USED FOR TEST, TRAINING, AND R&D.

7/ TOTAL FORCE LOADINGS REFLECT THOSE INDEPENDENTLY-TARGETABLE WEAPONS ASSOCIATED WITH THE TOTAL OPERATIONAL ICBMs, SLBMs, AND LONG-RANGE BOMBERS.

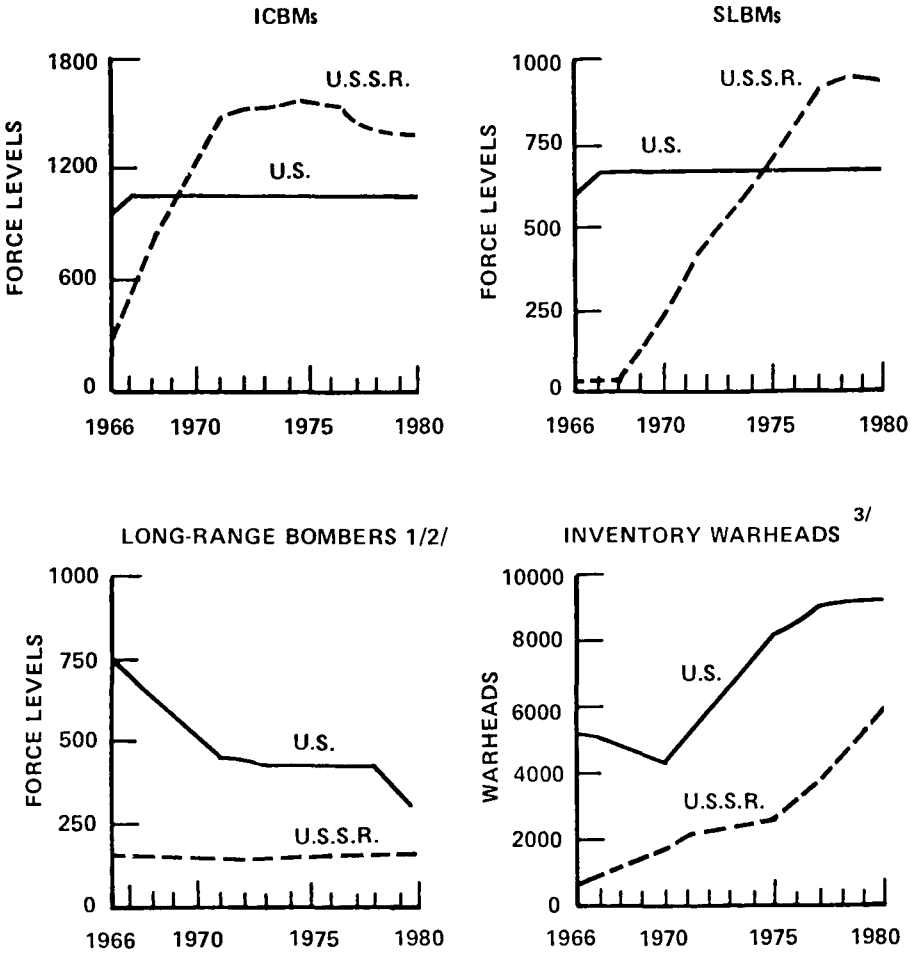
8/ EXCLUDES RADARS AND LAUNCHERS AT TEST SITES OR OUTSIDE NORTH AMERICA

9/ THESE LAUNCHERS ACCOMMODATE ABOUT 12,000 SAM INTERCEPTORS. SOME OF THE LAUNCHERS HAVE MULTIPLE RAILS.

With this digression as background, and keeping in mind that we build our strategic forces in order to accomplish certain missions and not with an eye towards how they will look stacked up against Soviet forces in a chart or table, let us turn to several standard static measures of the balance. Table 4-2 compares U.S. and Soviet strategic force levels, this year and last, and reveals very few changes. Chart 4-1 illustrates changes over time in four standard strategic measures--numbers of ICBM launchers, SLBM launchers, heavy bombers, and nuclear warheads.

CHART 4-1

CHANGES IN U.S./U.S.S.R. STRATEGIC LEVELS



1/ FB-111 and BACKFIRE are excluded
2/ Excludes approximately 220 B-52s in deep storage
3/ Based on force loading estimates

More important, however, are the future trends. The following analysis, which incorporates static and dynamic measures (with, of course, the inherent strengths and weaknesses of both), highlights several critical aspects of the strategic balance. It is a multi-faceted analysis covering a number of possible conditions and scenarios--a world with SALT II (or equivalent) limits and a world without them, day-to-day alert and generated alert postures, as well as both pre-exchange and post-exchange comparisons.

The following assumptions are built into the graphs in Chart 4-2 and the accompanying analysis:

-- Both the "under SALT II" and the "without SALT II" cases use "moderate" estimates of Soviet forces. The former case assumes a new 10-RV Soviet ICBM, because it provides more capability against MX. The uncertainties in these Soviet estimates are substantial for the later years, so caution should be used in interpreting the results of analyses using these estimates.

-- The "without SALT II" cases assume only a relatively modest U.S. reaction that expands MX and retains all older systems. Our reaction could well involve a more extensive program with attendant still greater costs and probably some delay in fully offsetting larger Soviet efforts. These "without SALT II" cases therefore can perhaps best be regarded as an indication of the dangers of an inadequate U.S. response to a much larger Soviet program.

-- The day-to-day alert scenario is widely considered to be the most severe situation for U.S. forces, although a protracted war scenario would also severely stress our forces, but in different ways. On day-to-day alert, almost all ICBMs, and about 30 percent of the on-line bomber forces are assumed to be available; over two-thirds of the on-line SSBNs are at sea and survivable. Soviet ICBM availability rates on day-to-day alert are slightly lower, and in peacetime, their SSBN and bomber rates are much lower than ours. The analysis, however, is conservative in that it assumes that, for a surprise Soviet first strike, their SLBMs and bombers could increase alert levels and disperse without providing sufficient strategic warning to change the U.S. alert posture.

-- A generated alert situation with high availability rates for strategic forces could result from strategic warning, for example, growing out of a major conflict between NATO and the Warsaw Pact. The analysis assumes that in this case both sides would have nearly all their on-line strategic forces available. Such high rates would not be sustainable for an indefinite period of time, because force elements would periodically need to go off alert for repair, refit, resupply, or crew change. There is little historical data on the achievability and sustainability of higher alert rates.

-- The pre-exchange graphs show the ratio of on-line U.S. and Soviet forces before the attack in terms of warheads; equivalent megatons (EMT), which measures the capability to destroy area targets; and hard target kill (HTK), which measures the capability to destroy hard point targets.

-- The post-exchange graphs show the ratio of warheads and EMT that can be withheld for use after a Soviet-initiated counterforce exchange in which the strategic forces on both sides and the facilities associated with the operational control and employment of these forces are attacked. (The remaining HTK is not shown, because most of the hard targets are attacked in the counterforce exchange.) The Soviets begin with an SLBM attack on time-critical bomber bases and C^3 facilities and an ICBM strike against U.S. missile silos and shelters, SSBN bases, and supporting installations. The U.S. retaliates against Soviet bomber bases, SSBN ports, and related nuclear weapon support installations including hardened C^3 facilities, and uses most surviving ICBMs and some bombers against ICBM launch control centers and ICBM silos themselves in order to deny the Soviets the ability to withhold ICBM weapons for later use. The U.S. retaliation is assumed to occur promptly, without degradation from the Soviet attack on C^3.

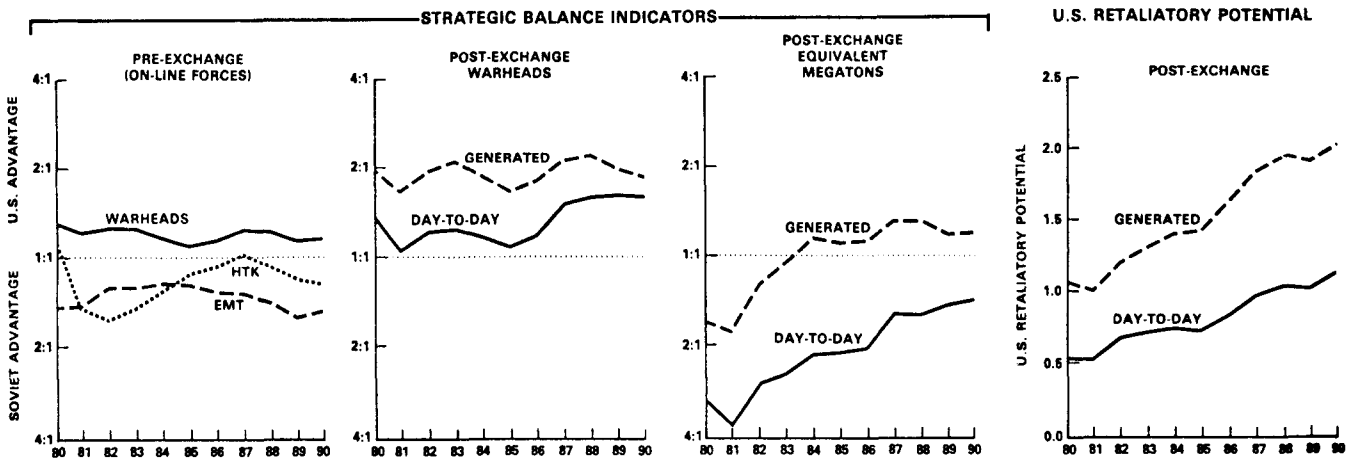
-- For each case, the U.S. retaliatory potential chart measures the potential of those U.S. strategic forces that remain after the counterforce exchange to attack a comprehensive set of military, leadership, war-supporting industry, and economic recovery targets in the USSR and the non-Soviet Warsaw Pact. (Damage to non-silo military targets resulting from the previous counterforce exchange is carried over into this calculation.)

(This assessment does not necessarily reflect the way in which the Soviets would use their forces in a nuclear war. Soviet strategy, tactics, and objectives in an actual conflict may differ from our own. Neither does this assessment reflect the precise manner in which our own forces are targeted today. In particular, it does not reflect operational considerations that enter into the actual assignment of weapons in attack options. Moreover, it does not account for the endurance of the forces and C^3I or many other uncertainties in their employment during a nuclear war. The weakest spots in the analysis, from the U.S. point of view, are probably the uncertain effects of damage to C^3, and the uncertainties connected with penetrability of bombers in the air defense environment of the late 1980s.)

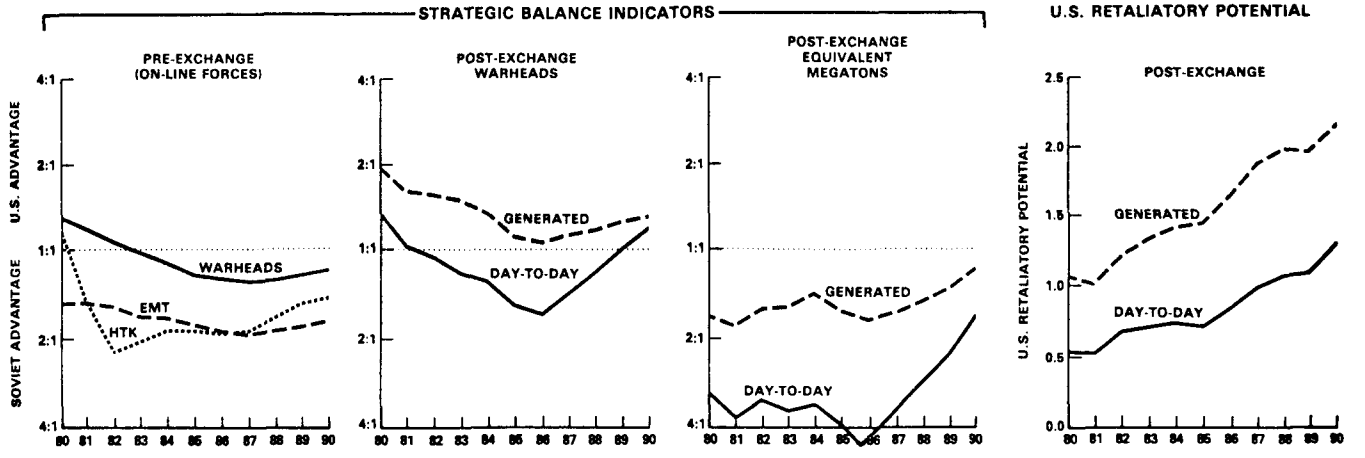
It thus should be noted that there are many assumptions in this scenario as to the nature and the effects of attack and response. Other assumptions would give different results. And there is no chart comparing forces after a Soviet attack but before a U.S. response (or after a U.S. attack but before a Soviet response). But certain general trends and conclusions are probably observable and warranted.

CHART 4-2

STRATEGIC FORCES UNDER SALT II



STRATEGIC FORCES WITHOUT SALT II
REACTIVE MX PROGRAM



Analysis of Chart 4-2 leads to the following observations:

-- For the next few years, when the post-exchange indicators are compared with the pre-exchange indicators, both with and without SALT, a Soviet pre-emptive attack, with U.S. forces on day-to-day alert and followed by a U.S. counterforce response, would leave the Soviets with a greatly improved relative position in EMT, but would shift warhead ratios only slightly. It would leave the United States a large residual capability against the Soviet and non-Soviet Pact military, leadership, and industrial target base. In a generated alert, with our full bomber and SLBM forces available, the warhead and EMT pictures are considerably more favorable.

-- By the latter half of the decade, our current programs, even in the day-to-day case, result in no unfavorable shift in the EMT ratio and an increase in

U.S. warhead advantages--even in the no-SALT case. This results from our ALCM, MX, and TRIDENT programs. Thus, a Soviet attack would probably result in a residual balance less favorable to them than existed before. In the generated case, these favorable trends are still stronger.

-- Under SALT constraints, the overall picture is more favorable to the United States than without them. The substantial increases in Soviet force levels that are projected if SALT II limits are not observed would generally shift these balance indicators to the Soviets' advantage, even with the assumed change in planned U.S. strategic programs, i.e., augmenting the MX system substantially in response. In a no-SALT environment in which the Soviets significantly increase their forces, large and costly additional U.S. programs would be needed if we wanted to maintain something approaching the SALT-constrained balance. Further, because of the difficulty of rapidly expanding U.S. programs, we would probably not be able to reverse such shifts until the latter part of the decade regardless of which such programs we chose to adopt.

-- The retaliatory potential of U.S. forces remaining after a counter-force exchange is substantial even in the worst case and would increase steadily after 1981, with or without SALT, primarily through the ALCM and TRIDENT programs. This potential would be much greater in generated alert.

These general conclusions emerge unambiguously from this analysis: the importance of carrying out our planned ALCM, TRIDENT, and survivable MX modernization programs to reverse adverse trends; the significant growth in the capabilities of the U.S. forces that would survive a Soviet first strike; the greater relative strength of U.S. forces in a generated alert situation (when the Soviets assess the potential consequences of initiating a crisis such as a war against NATO and threatening an attack on U.S. nuclear forces, they would have to plan on U.S. forces being on generated alert); and the advantages to the United States of having strategic competition take place in a SALT-constrained environment.

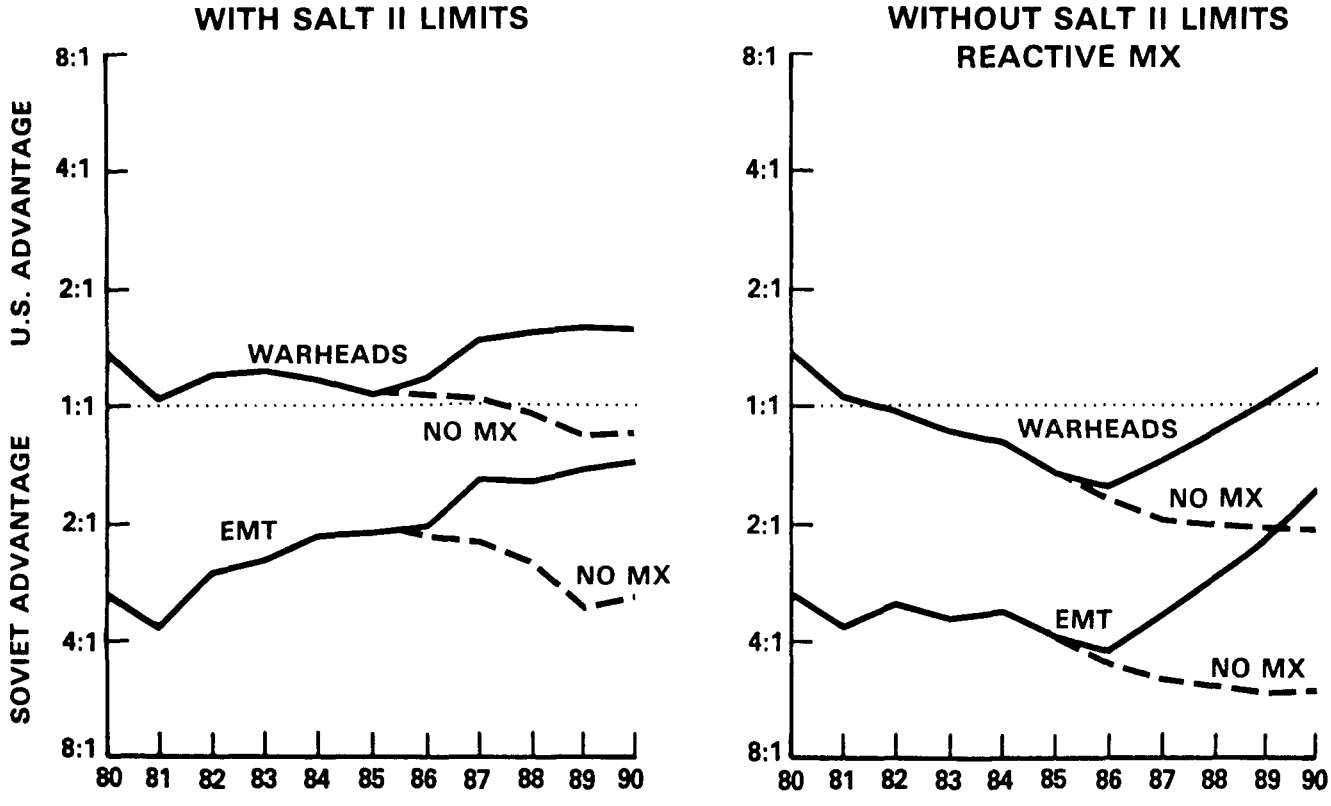
Our countervailing strategy seeks to deny the Soviets victory, and an improved relative balance would appear to be a minimum condition of "victory." Although it is only part of the overall picture, this analysis shows that, in terms of these measures, the Soviets would not be able to improve their relative military position by a nuclear attack on the United States, given the potential capabilities of our forces to retaliate against Soviet strategic forces.

Further analysis (Chart 4-3) reveals the special contributions in the late 1980s that MX in a survivable basing mode would make to the post-exchange ratios, even under the more adverse day-to-day alert conditions (i.e., surprise attack in a bolt-out-of-the-blue situation). The increments of strategic power provided by a survivable MX are significant with or without SALT II. With Soviet forces under SALT II limitations, it is MX that gives the United States a post-exchange warhead advantage in the latter half of the decade; without SALT II limits, MX is needed to reverse the adverse post-exchange warhead trend. MX forces the Soviets to make a difficult choice between allocating a large number of ICBM warheads against MX shelters and employing them against other valuable targets. (These graphs assume they target MX.) The full contributions of MX are even greater than those indicated here, because MX provides a considerable hedge against

potential Soviet advances in threats to the submarine and bomber legs of the triad (much as the SLBMs now provide a hedge during a period of ICBM vulnerability). Without MX, such potential Soviet advances would have more severe implications.

CHART 4-3

POST-EXCHANGE DAY-TO-DAY ALERT FORCES WITH AND WITHOUT MX



IV. ARMS CONTROL

A. The Rationale

As the foregoing analysis reveals, arms control, when coupled with vigorous force improvements, can make distinctive and important contributions to the strategic balance, and thus to stability and to deterrence. Negotiated arms control agreements can limit the threat, in terms of overall size and specific characteristics. Limiting the threat reduces our requirements. The smaller and more predictable the threat, the easier it is for us to design, and the less expensive it is for us to build, our own forces to balance and to deter those arrayed against us. Arms control agreements can contribute to stability by foreclosing competition in certain potentially destabilizing areas and by channeling competition into less destabilizing directions, for example, by encouraging development of invulnerable second-strike capabilities such as SLBMs.

B. SALT

The history of the strategic arms limitations talks (SALT) demonstrates that the theoretical rationale for arms control can be applied in specific, equitable, verifiable, and practical terms. More than a decade of experience has shown that such progress, although slow and difficult, is well worth the time and effort, given the alternative--an unconstrained strategic competition.

The 1972 ABM Treaty has enabled both sides to avoid the potentially enormous expenditures required to attempt to build an effective ABM network. Otherwise, ABM deployments could continue to spiral upward as each side designed and built more powerful offensive forces to overcome the other's ABM system, and they could be destabilizing by creating a false impression of damage-limiting capabilities.

Limits on defensive forces and limits on offensive forces can be mutually reinforcing. ABM limits can reduce the drive for larger and more capable offensive systems, thus creating a situation that is more conducive to offensive limits. The converse is, of course, also true: in a situation in which offensive forces were not limited, it would be appropriate to evaluate whether the ABM Treaty's limits on defensive systems, standing alone, continued to serve U.S. interests.

Because large, complex, and diverse offensive strategic forces were in place in the United States and the Soviet Union when SALT began in the last days of the 1960s, the process of negotiating agreements on offensive weapons has been especially challenging. Progress has been hard won and has come only in stages. Of necessity, the process is a matter of addressing the problems layer by layer, one step at a time. Especially in retrospect, the SALT I Interim Agreement can be seen as the essential, and necessarily limited, first step--a freeze in place in the most elementary measure of strategic power, numbers of missile launchers--as a complement to the ABM Treaty. It remained for SALT II to design a more comprehensive framework that would also include numbers of heavy bombers, equal overall numerical ceilings, detailed and precise definitions, limitations (both direct and indirect) on other strategic measures such as warheads and throwweight, and the first qualitative restraints, as well as beginning the process of numerical reductions.

The SALT II Treaty, signed after almost seven years of negotiations, provides such a framework. It is not necessary for me to repeat here the detailed case for its ratification that I have made many times before, including in my Annual Report a year ago. Nor need I detail once again the many specific limitations it places on Soviet strategic programs and forces, or the ways in which it permits us to continue necessary programs. I deeply regret that the Soviet invasion of Afghanistan made it impossible to continue to press for Senate ratification of the Treaty--an effort whose outcome was uncertain, but which I believe would likely have been successful. Ratification would have contributed to a favorable climate for a solid defense program for the 1980s.

Given the political reality that the Treaty in its present form is unlikely to be ratified, I should--after reiterating my firm conviction that SALT II serves and advances our national security interests--rather note that there is more at stake than just one agreement. There is the question of whether there will

be continuing negotiations, not merely to give the appearance of continuing the process, but to reach effective and verifiable agreements to limit strategic nuclear weapons, and thus, in conjunction with sound defense programs, to contribute to U.S. security. Statements of commitment to the process are necessary but not sufficient conditions for progress. Real progress requires a willingness to consolidate the imperfect and incomplete successes won at each stage of the process, and then to move on to address the unfulfilled agenda. I remain hopeful about the prospects for strategic arms control. But I want to reiterate here my view of the importance to U.S. strategic interests (as well as to those of the USSR) that the SALT II limits continue to be observed by both sides.

C. Comprehensive Test Ban (CTB)

For many years, the United States has supported the goal of a comprehensive and verifiable ban on nuclear explosive testing. In 1977, we entered into negotiations with the Soviet Union and the United Kingdom to reach such an agreement, and we have made progress on many provisions of a treaty. It would prohibit nuclear explosions both of weapons and for peaceful purposes. It would be of limited duration, unless the parties later agree to a replacement treaty.

We have not yet completed the negotiations, primarily because of difficulty in meeting our objective of establishing verification measures that go beyond those of any previous arms control agreement, measures that would be supplemental to our national means of verification. In this regard, the three negotiating parties have reached agreement in principle that the treaty will provide for on-site inspections and for establishment of a system of seismic monitoring stations on the territories of the parties. Considerable work remains to translate these agreements in principle into detailed verification arrangements that would be satisfactory to all parties; in particular, there are important differences as to the origin and characteristics of the national seismic stations.

In parallel with our pursuit of an adequately verifiable treaty, we must be sure that, under its terms, we would be able to retain adequate confidence in the reliability of our nuclear weapons. To this end, President Carter has stated that it would be U.S. policy to resume nuclear testing for weapon safety and reliability purposes, following the termination of the treaty, unless a vigorous safeguards program and studies in the interim show that this is not necessary.

Realistically, however, progress on CTB will be especially difficult in the absence of a resolution of the issue of the SALT II Treaty.

CHAPTER 5

POLICY FOR FORCES II: NATO

No American international security obligation is more solemn and more vital than our commitment to the North Atlantic Alliance. For over 30 years, NATO has survived through periods of extreme East-West tension as well as periods of relative relaxation. Within the Alliance, there have always been differences on particular issues--we are, after all, an alliance of sovereign states--but the shared commitment to the fundamental principles of the North Atlantic Treaty has been unwavering.

Today, NATO is being tested both militarily and politically, from without and from within. A two-pronged Soviet strategy of military intimidation and political division poses one of the most serious challenges in the history of the Alliance. These twin challenges are inextricably intertwined. As I have indicated before and will specify in some detail later in this chapter, the Soviets are continuing their systematic and sustained build-up of Warsaw Pact military capability. The challenge to NATO is clear: to maintain the necessary military balance in Europe. Western failure to do so would have disastrous consequences in the event of war, and could produce political and economic paralysis in time of peace. At the same time, through cajolery and propaganda, the Soviets seek to divide the Alliance politically, in order to weaken our will to meet the military challenge. Seldom in the life of the Alliance has solidarity been more important, and seldom has it been more seriously challenged.

To compound the difficulties inherent in meeting these twin challenges, the Alliance has had simultaneously to face new problems in unfamiliar parts of the world--the problems of oil, particularly access to Persian Gulf oil. Swirling about this vulnerable necessity and the lifeline to it are the continuing chaos in Iran, the Iraqi-Iranian conflict, and the Soviet occupation of Afghanistan. To a significant extent, the United States imports Persian Gulf oil, but our dependence pales in comparision with that of many of our European and Asian allies. And a disruption of access to Persian Gulf oil would also disrupt the prices and the availability of all imported oil. For this reason, we believe that the security of the United States, Western Europe, and Japan is linked directly with the security of the Persian Gulf.

The Alliance response to these challenges must be threefold: NATO must remain politically cohesive, NATO must become militarily stronger in Europe, and, as the United States assumes most of the military burden in areas outside of but vital to Europe, all the other members of the Alliance must do even more at home, while some participate directly with us in Southwest Asian defense. What FRG Chancellor Helmut Schmidt has called a "division of labor" is the necessary formula for the security and well-being of the Alliance.

While this chapter is devoted to NATO forces, the reader should remember that the following chapter ("Forces For Non-NATO Contingencies") includes discussion of our forces for the Persian Gulf-Southwest Asian region and thus has clear implications for NATO security.

The fundamental military policy of NATO is deterrence--and, if necessary, defense against any attack, at any level, on the physical territory, military forces, or vital interests of the member states in the NATO Treaty area. Deterrence must be effective across the entire spectrum of conflict, and, therefore, the forces designed and deployed in its defense must cover that spectrum as well. Historically, NATO has relied on conventional, theater nuclear, and strategic nuclear forces to deter aggression. U.S. strategic nuclear forces were discussed in the previous chapter; theater nuclear and then conventional forces will be addressed in this chapter. While strategic nuclear forces are not treated in detail here, the clear reality is that they are now, as they always have been and as they will continue to be, an integral part of the framework of security we have created and built for NATO. On that score, there should be no doubt in the minds of either our friends or our adversaries.

I. THEATER NUCLEAR FORCES

NATO's strategy of flexible response has long been based on the ability to respond appropriately to any level of potential attack and to pose the risk of escalation to higher levels of conflict. Our countervailing strategy is consistent with NATO strategy, and theater nuclear forces (TNF) are an essential component of both. They serve to strengthen and enhance the links between NATO's conventional forces and U.S. strategic nuclear forces, and are designed to provide the United States and its allies a credible capability to respond across the full spectrum of potential conflict.

The role of TNF has become particularly important with the advent of strategic parity and the modernization of Soviet theater nuclear forces. Under these conditions, we need to ensure that the Soviets do not miscalculate either our capabilities or our intentions. If they were to believe that NATO lacks adequate TNF options, they might in a crisis seek to intimidate us or be tempted to attack. Our current theater nuclear forces and modernization programs are directed towards making the likelihood of such miscalculations extremely small. TNF visibly manifest the U.S. nuclear commitment to NATO and our willingness to use nuclear weapons in the defense of Europe if necessary.

A. The Threat

The Soviets have deployed large numbers of theater nuclear delivery systems, and we believe they have stockpiled reloads for these systems. The Soviets rely on dual-capable systems for most of their shorter-range theater nuclear delivery capability and have adapted some of their 203mm and 240mm artillery pieces deployed in the USSR to fire nuclear projectiles. Towed 203mm and 240mm weapons are being replaced with self-propelled models. Their more modern fighter aircraft--the SU-17 (FITTER C/D), SU-24 (FENCER), and some versions of the FLOGGER (MIG-23 and 27)--also appear to be dual-capable. Their medium-range launchers are capable of firing nuclear, conventional, or chemical munitions, and consist of the FROG (and its SS-21 replacement), the SCUD B (and its SS-X-23 replacement), and the SS-12 SCALEBOARD (and its SS-22 replacement). Other members of the Warsaw Pact also deploy nuclear-capable aircraft and missiles.

As noted in Chapter 4, the Soviet LRA also maintains large nuclear-capable theater forces based in the Soviet Union. Among these are about 450 intermediate-range bombers of the BADGER and BLINDER type, about 65-70 BACKFIREs, about 400 older MRBMs and IRBMs, and about 180 SS-20 mobile IRBM launchers, with each missile carrying three MIRVs. (See Table 5-1 for an unclassified comparison of NATO and Soviet land-based long-range TNF.) The Soviets have older submarines in the Baltic and Northern fleets armed with ballistic missiles. In addition, the Soviet Navy has a diverse inventory of nuclear weapons, which can be deployed on all of their major surface combatants and submarines, as well as naval BADGER, BLINDER, and BACKFIRE strike aircraft.

During the past 12 months, the Soviets have continued to expand at a rapid pace their already substantial base structure for and deployment of the SS-20 missile. Approximately 80 operational SS-20 launchers have been added to the number contained in my FY 1981 Annual Report. While some of the older SS-4 and SS-5 missiles are being retired, a substantial number nevertheless remain in the force, creating the clear impression that, at least for the foreseeable future, the SS-20 is augmenting rather than replacing those older missiles. Even if all of the SS-4s and SS-5s are retired eventually in favor of the SS-20, the threat to NATO posed by Soviet LRTNF will still have increased, despite a possible decrease in launcher numbers. The SS-20 is substantially more capable than its predecessors. Not only is it mobile and more difficult to target, its range is greater, it carries three warheads (each of which is substantially more accurate than the single warheads of the older missiles), and the SS-20 launchers have a refire capability.

In the past year, Soviet long-range aviation capabilities have also grown quantitatively and qualitatively. The number of BACKFIRE bombers has increased, while the numbers of older BADGER and BLINDERs have remained roughly constant.

B. U.S. and NATO Capabilities

The United States maintains thousands of theater nuclear weapons worldwide. A SIGNIFICANT NUMBER of our TNF deployments are in Europe, where the Soviet Union concentrates its own most capable conventional and theater nuclear forces. The majority of U.S. theater systems deployed in Europe fall into three broad categories: short-range battlefield systems; medium-range systems designed to strike second echelon targets and lines of communication; and long-range systems capable of striking rear area targets including those in the Soviet Union. In addition, the United States maintains maritime anti-air and anti-submarine warfare weapons aboard ships, as well as nuclear depth bombs, to support U.S. and allied maritime patrol aircraft.

Our present short-range nuclear systems include nuclear-capable artillery (8-inch and 155mm) and LANCE missiles. Over the coming year, we will begin production of additional LANCE warheads and a new 8-inch artillery round, which will offer the option for inclusion of an enhanced radiation capability, should the President decide to add such a capability. The PERSHING IA missile, a dedicated medium-range nuclear system, will be replaced by PERSHING II on a one-for-one basis in U.S. forces. Land- and sea-based dual-capable aircraft can also strike targets at short and medium ranges. The dual-capable U.S. F-111 and the U.K. VULCAN

TABLE 5-1

US/NATO AND SOVIET LAND-BASED LONG-RANGE THEATER NUCLEAR FORCES a/

	Missile Range/Aircraft Radius (km)	Weapons Per System	STRIKE INVENTORY JANUARY 1, 1981 Total Launchers/ Aircraft Worldwide	Total Launchers/ Aircraft Europe b/	Total Warheads Worldwide	Total Warheads Europe b/	Mid-1980s (Estimated) Total Launchers/ Aircraft Worldwide	Total Launchers/ Aircraft Europe b/	Total Warheads Worldwide	Total Warheads Europe b/
Soviet										
SS-20 Launchers	≥ 4400	3	180	110	540	330	300+ c/	f/	900 c/	f/
BACKFIRE Bombers e/	4200	4 d/	65-70	40	260-280	160	150	f/	600	f/
Older Missiles	1900-4100	1	400	400	400	400	50-200 g/	50-200 g/	50-200 g/	50-200 g/
Older Bombers e/	2800-3100	2 d/	450	350	900	700	400	300	800	600
NATO										
UK VULCAN Bomber	> 2000	-- h/	56	56	-- h/	-- h/	0	0	0	0
US F-111 DCA	1800	2 d/	360	170	720	340	330	170	660	340
US GLCM	> 2000	1	0	0	0	0	464 i/	464 i/	464 i/	464 i/
US PERSHING II	> 1000	1	0	0	0	0	108 i/	108 i/	108 i/	108 i/

NOTES:

a/ Systems with missile ranges or unrefueled combat radii such that (a) Soviet systems can unambiguously hit targets in Western Europe from bases in the Soviet Union, and (b) NATO systems can unambiguously hit the Soviet Union from bases in Western Europe. Aircraft radii are illustrative for European missions.

b/ Inventory normally based in Europe or within striking range of Europe.

c/ Because of the continuing construction program, the SS-20 force may be larger than estimated above.

d/ Illustrative weapons load. Actual load would vary according to mission and type of weapon (ASM or bombs).

e/ Strike-configured bombers and ASM carriers only. Does not include comparable numbers of BACKFIREs and older bombers currently assigned to Soviet Naval Aviation.

f/ Two-thirds of total worldwide inventory could be deployed against NATO.

g/ The numbers shown reflect uncertainties about the future status of the force of older missile launchers.

h/ Unclassified data not available.

i/ After completion of LRTNF modernization.

bombers have long-range capability. In 1983, NATO plans to deploy two additional long-range systems: the ground-launched cruise missile (GLCM) and the PERSHING II. The United States also commits POSEIDON warheads to the Supreme Allied Commander, Europe (SACEUR).

British nuclear forces, in addition to the SLBMs mentioned in Chapter 4, include VULCAN bombers and some dual-capable aircraft that are also committed to SACEUR. United Kingdom forces are being modernized by the retirement of the VULCAN and the addition of TORNADO dual-capable aircraft starting in 1981. Also, France maintains nuclear forces in addition to those identified in Chapter 4. It should be noted that these are not committed to NATO.

NATO's current TNF are capable of covering a wide range of targets, including troops on the battlefield, reinforcements, lines of communication, ship and base facilities, and enemy nuclear delivery systems. They have high survivability in the aggregate and remain responsive to military and political authorities. Yet, the growth in Soviet TNF necessitated major improvements in NATO's own theater nuclear forces.

C. Long-Range TNF Modernization and Arms Control

In December 1979, NATO unanimously decided to modernize its long-range theater nuclear forces (LRTNF) and in parallel to pursue arms control efforts with the Soviets covering U.S. and Soviet LRTNF systems. In response to the continuing and steady buildup of Soviet TNF, notably the SS-20, NATO demonstrated its commitment to maintain a credible flexible response strategy and to modernize its TNF posture. The alliance also called upon the Soviet Union to negotiate equal limits on land-based long-range missiles.

We are working closely with the United Kingdom, the Federal Republic of Germany, and Italy in planning for the deployment of LRTNF in their countries. The United Kingdom announced the sites of its GLCM bases in June. The Federal Republic of Germany has agreed that the PERSHING IIs will be based at the sites currently occupied by U.S. PERSHING IAs. We are in the final stages of selecting GLCM sites in Italy and Germany. We are hopeful that the Belgian Cabinet's September 1980 decision will permit their country to participate fully in both elements of the NATO plan. The Netherlands has indicated that by the end of 1981, it will decide on accepting deployments.

We are proceeding with our LRTNF development program to achieve nearly simultaneous deployments of PERSHING II in the Federal Republic and GLCMs in the United Kingdom near the end of 1983 and of GLCMs in Italy at a later date. Major component testing for the PERSHING II missile has been very successful, and the first flight test will occur in April 1982. PERSHING IIs will replace all the U.S. PERSHING IAs in the Federal Republic of Germany by the end of 1985.

In May 1980, we completed the first flight test of a GLCM from an engineering model. While we are making some technical alterations to the GLCM program schedule (because of a six-month delay in the delivery of the software package for the cruise missile's weapon control system), we foresee no slippage in the late 1983 IOC and plan to deploy 160 GLCMs in Europe by the end of FY 1985 and 464 by the end of FY 1988.

Since the new theater nuclear systems will be deployed with U.S. units in Europe, we will necessarily assume a major portion of their costs. The alliance has agreed, however, that a significant part of the funding for their basing will be shared through the NATO infrastructure program. Basing countries will defray some operational costs. To ensure that we are able to make our initial deployments on schedule in late 1983, I requested last year and the Congress approved an appropriation of $19 million to prefinance construction of GLCM facilities in the United Kingdom. We expect to recoup these funds through the infrastructure program at the earliest opportunity. But, I must emphasize that U.S. fulfillment of its specific commitments regarding LRTNF modernization is key to success of the overall plan.

The December 1979 decision, as I noted earlier, involved both modernization and arms control. So even prior to LRTNF deployments, we are seeking limits on U.S. and Soviet LRTNF. We began preliminary exchanges with the Soviets on TNF last October with an initial round of talks in Geneva lasting one month. The U.S. position set forth in Geneva was developed in intensive consultations with our NATO allies, providing for firm and unified Alliance support for the U.S. negotiating effort. That position calls for equal and adequately verifiable limitations, focusing initially on U.S. and Soviet long-range, land-based TNF missiles. The U.S. approach is designed to provide the basis for timely and concrete limitations on these systems, which are of greatest concern to both sides. The discussions in Geneva were serious and business like, and they represented an important first step. The United States and Soviet Union have agreed to be in contact concerning the resumption of talks in 1981.

We will be prepared to review our modernization plans in light of concrete results reached through these negotiations. We and our NATO allies agree that pursuit of our program for long-range TNF modernization is the best way of providing incentives for the Soviets to negotiate in good faith and that it maximizes the possibility of ultimate success in arms control.

We remain committed to implementation of both aspects of the December 1979 LRTNF decision. We must ensure that the steps necessary for LRTNF deployments are taken and that the funds are made available to achieve the planned deployments in 1983. We must also continue our pursuit of an effective arms control strategy. But we must leave no doubt that any modification of the Alliance commitment to the presently contemplated level of LRTNF deployment can come about only as the result of concrete achievements in TNF arms control.

II. CONVENTIONAL FORCES

A. The Soviet/Warsaw Pact Threat

The dimensions of the long-term growth in Warsaw Pact conventional capabilities have been spelled out in some detail in my previous Annual Reports. This year I will focus on current Pact forces in Europe, highlighting a number of specific features worthy of special attention.

1. Land Forces

The Warsaw Pact divisions are deployed in forward areas of the Center Region, although this force could be expanded by another 30 divisions within about two weeks after mobilization. In addition, about 10 Pact divisions are deployed on the northern flank, posing a special threat to Norway, and another 36 are on the southern flank, threatening Turkey in particular.

Beyond the threat their numerical advantage has always implied, Warsaw Pact forces in recent years have improved qualitatively in a number of very important ways. Today's Warsaw Pact troops are well trained, well led, and equipped with tens of thousands of modern tanks, armored infantry fighting vehicles, self-propelled artillery tubes and rocket launchers, armored attack helicopters, and anti-armor and air defense guns and missiles. Moreover, their level of operational readiness is being increasingly enhanced by expansion of their logistics structure; the growth of ammunition, POL, and war reserve equipment stocks; and the rapid introduction of more modern and more reliable trucks and other ancillary equipment that seem to be designed as part of a concerted effort to use automation and mechanization to increase the productivity of support forces. As a result, the traditional argument, that we are able to offset Pact numerical superiority with fewer, but higher quality forces, is no longer persuasive by itself.

Not only have Pact land forces been impressively modernized, they have also been reorganized to enhance their warfighting capability at the tactical level. Several specific examples will illustrate the general point:

-- equipping one motorized rifle regiment (MRR) in every motorized rifle division and the MRR in every tank division with the new BMP armored personnel carrier;

-- reorganizing tank regiments as combined arms regiments with motorized rifle and artillery battalions;

-- increasing from 31 to 40 the number of medium tanks in the tank battalion of each MRR;

-- tripling the artillery assets of many MRRs; and

-- adding a road/bridge construction company to divisional engineer battalions.

The net result of these qualitative changes is a more modern, more mobile land fighting force that can deliver considerably greater firepower more effectively, over longer periods of combat, than the Warsaw Pact was capable of in the past.

2. Tactical Air Forces

In the Center Region, Warsaw Pact tactical air forces include over 3,000 combat aircraft, with the potential of adding considerably more after reinforcement from the Soviet Union. About another 1,000 are deployed on the flanks.

Modernization of the Pact fighter-bomber force has given it greatly enhanced capability not only for its traditional role of air defense, but also for offensive strikes into NATO territory. Within the past five or six years, most Soviet Frontal Aviation operational units in Eastern Europe and the Western USSR have been equipped with late model airframes (including FISHBED K/L/N, FLOGGER B/G, FLOGGER D/J, FITTER D/H, and FENCER). In addition, over 450 modern, heavily armed helicopters were added to Pact forces deployed opposite NATO, and steady expansion is expected to continue.

The ability of the modernized Soviet tactical air forces to take on more of a strike and interdiction role has been enhanced by the steady growth in Pact ground-based air defenses. Until the early 1970s, Warsaw Pact tactical air was oriented towards air-to-air missions against NATO fighter-bombers. Since then, however, a diverse array of surface-to-air missiles and anti-aircraft weapons have been fielded, enabling Pact ground troops to assume a greater share of the burden of their own air defense. This year we expect the Soviets to deploy their first specifically designed ground support fighter.

The Pact tactical air forces remain primarily oriented towards operations in good weather, requiring visibilities in excess of several thousand meters. Only FENCER and BACKFIRE aircraft would have any appreciable capability to conduct operations in poor visibility. Continued deliveries of these aircraft through the mid-1980s will improve but not revolutionize Pact tactical air capability in poor weather.

The Soviets continue to produce the FLOGGER G fighter, FLOGGER D and FITTER D variant fighter-bombers, as well as FENCER strike aircraft. FOXBAT B/D and FITTER H tactical reconnaissance aircraft also are in production. A new generation of tactical aircraft is in development, as previously reported. A new ground support attack aircraft--analogous to our A-10, although smaller--may enter operational service in the near future. New fighter aircraft also are expected, but first operational deployment in the tactical forces probably will not occur until the mid-1980s. NATO's current generation of tactical aircraft, including TORNADO, F-15, F-16, and A-10, still are considered to be superior overall in quality to the threat aircraft expected in the mid-1980s.

Taken together, these developments mean that Warsaw Pact air forces have acquired a serious, offensive capability to contest control of the air--even over portions of NATO territory.

3. Naval Forces

About 70 percent of the Soviet Navy's ships, aircraft, and submarines are assigned to its three western (Baltic, Black Sea, and Northern) fleets in the European theater. The Soviets have some 200 active surface combatants, patrol combatants, one aircraft carrier, mine warfare and amphibious warfare ships, and general purpose submarines in these fleets. Modernization of their naval forces in recent years has given the Soviets a capability--at least in the early stages of a war--to threaten NATO's sea lines of communication (SLOCs) with attack submarines, surface combatants, and BACKFIRE bombers. The naval aviation elements of these European fleets include more than 800 aircraft.

The Soviets are making significant changes in the character of their general purpose warship construction. New generations of surface ships and submarines--several classes of each--are influencing our perceptions of their ultimate naval goals. Clearly, the Soviets have chosen to introduce a small number of large, highly capable units that show increased potential for operation over wide ocean areas. Production of some more traditional combatant types continues as well. Construction of logistics support ships has virtually ceased.

Soviet general-purpose submarine construction has increased somewhat. Production of the VICTOR III and ALFA SSNs is underway, and CHARLIE-II class SSGN construction continues slowly. The new OSCAR class cruise missile submarine is expected to enter service soon. At the same time, production of diesel-powered submarines continues unabated.

The new surface combatant classes are beginning to appear at sea. The first of at least two KIROV class nuclear-powered guided missile cruisers--displacing 22,000-25,000 tons--left the Baltic last fall and sailed to northern waters for weapon trials. The second ship is expected at sea in the mid-1980s. A new general purpose guided missile destroyer also operated in the Baltic for the first time in mid-1980, with several sister ships expected through the early 1980s. Larger numbers of a second cruiser class are anticipated, and a second destroyer class--which appears to be an ASW ship not unlike the U.S. SPRUANCE class in size and layout--is also under construction.

Construction continues on KRIVAK class guided missile frigates, GRISHA class light frigates, and a wide variety of mine warfare and patrol vessels. Production of amphibious lift ships remains modest, with commercially-operated roll-on/roll-off ships the major increasing threat in this area. A second IVAN ROGOV class transport dock ship has yet to enter service. As far as we know, no naval underway replenishment ships are being built at present.

The naval forces of the other members of the Warsaw Pact do not significantly enhance Soviet capabilities on the open ocean, but, especially in the Baltic, they can add about 175 ships. In the Baltic, East German and Polish naval forces seem to be designed and well suited for coastal defense and mine-countermeasures, and also have a moderate amphibious warfare capability complementing that of the Soviet Baltic fleet. In the Black Sea, the Bulgarian and Romanian naval forces would not be expected to fight beyond their immediate coastal waters.

The size and composition of the three Soviet European fleets, and our observation of their exercises, provide some insights into the kinds of naval operations the Warsaw Pact could undertake in the event of a war in Europe. The Soviet Northern Fleet's submarines and surface combatants (some of which are equipped with anti-ship cruise missiles), along with missile-armed BACKFIREs and BADGERs, appear designed to close off the Norwegian Sea to NATO naval and resupply operations, and to interdict NATO's SLOCs. In addition, a major task of at least some air and surface forces, as well as of some submarines, is to protect Soviet SSBNs. In the Baltic, combined Pact capabilities could be directed towards sealing off that body of water to NATO, and recent exercises indicate increased emphasis on amphibious warfare, which, in time of war, could threaten key islands in the Danish Straits. In the Black Sea, BACKFIRE and BADGER bombers would be an integral part of a Soviet effort to break through the Turkish Straits.

4. Chemical Warfare

One area that not only poses a significant threat to NATO but also is extremely difficult to evaluate and assess is chemical warfare (CW).

The Warsaw Pact pays more attention than NATO to chemical warfare (CW) doctrine, equipment, organization, training, and stockpiles. The Soviet Union and the Warsaw Pact are better prepared than any other nation or alliance of nations to conduct offensive chemical operations and to protect their armed forces against the use of nuclear and chemical weapons. At the present time, NATO forces lack the capability to defend adequately against the Pact chemical threat. However, we have a number of initiatives underway to improve this situation over the next four years.

B. NATO Forces and the U.S. Contribution to Them

1. Land Forces

Allied military manpower is greater than commonly realized. Nearly 1,000,000 soldiers serve in active status in the Center Region (including France) and another 600,000 on the flanks; full mobilization of reserves would bring these figures up to 2.5 million and one million, respectively. In peacetime, the United States currently contributes the equivalent of about 5 2/3 Army divisions (approximately 200,000 troops) forward deployed in Central Europe; the Allies, about 30 division-equivalents. In the event of war, the United States would deploy large numbers of reinforcements to Europe, and we could ultimately bring our total up to 20-24 Army and Marine Corps divisions, in the absence of other calls on our forces.

2. Tactical Air Forces

Almost 3,000 Allied combat aircraft are deployed in Central Europe (including France) and about 500 of them are American fighters and fighter-bombers (including more than 90 F-15s and more than 150 F-111s). In wartime, our total contribution could rise as high as 2,000-2,300 combat aircraft.

Only about one quarter of NATO's conventional tactical air assets are devoted primarily to air-to-air missions, with U.S. F-15s as the backbone of this air superiority capability. However, current stocks of the late-model SPARROW and SIDEWINDER air-to-air missiles--the F-15's primary weapons--are well below planned requirements. Our allies' stocks of air-to-air missiles are still more limited. U.S. F-111s and PAVE TRACK F-4s comprise the heart of NATO's capability for deep-strike and interdiction missions at night or during adverse weather. (The F-111s are also the most capable in NATO's force of aircraft for theater nuclear strike missions.)

3. Naval Forces

U.S. naval forces cruising European waters include one aircraft carrier, 12-15 principal surface combatants, attack submarines, as well as a number of amphibious ships and smaller vessels. Other NATO naval forces are significant, including surface combatants, patrol combatants, aircraft carriers, mine warfare and amphibious warfare ships, and submarines in the Atlantic and the English Channel, and along the Northern and Southern flanks.

In the Atlantic and the Channel, Allied naval forces would combine effectively for anti-submarine warfare and escort of convoys, with the powerful and operationally effective Royal Navy providing the bulk of the non-U.S. contributions. In the Northern Region, coastal defense, anti-invasion missions, control of the Baltic approaches, and SLOC protection are the dominant missions. Along the Southern flank, the non-U.S. NATO naval forces will engage primarily in operations in immediate coastal waters. In all areas, however, it is the naval forces of the United States that provide the most effective counter to the Soviet maritime threat. The U.S. Navy's superior sea-based tactical air and anti-submarine warfare capabilities could offset the quantitative and qualitative inferiority of other NATO naval forces, as compared with the Soviet-dominated Pact fleets.

4. Mobility

We are currently implementing several programs to augment our ability to deploy U.S. ground and air forces to Europe. I will discuss these in Section I, Chapter 7, in the context of support for our forces.

C. The Conventional Balance in Europe

1. How to Measure the Balance

As is the case with strategic forces, assessing the balance of conventional forces in Europe is both science and art. Once again, the forces differ not only in size and composition, but in doctrine, mission, training, and technological sophistication. Any number of quantitative and qualitative factors can be incorporated in the analysis. No one methodology can describe the reality completely, and no one technique can answer all the relevant questions about the relative military capabilities of the two sides. Several general principles, however, should be specified at the outset.

First, we must establish the right criterion. It is not how our forces look next to theirs on a series of balance tables. Rather, it is the adequacy of our forces to deter and to carry out our strategy of forward defense, given the threat we face. Analysis done purely on the basis of mirror imaging is neither necessary nor very useful. While quantitative measures are not inconsequential, they are best used in relation to the requirements posed by the assigned mission.

Our forces are designed to defend Western Europe against an invasion from the East. This mission not only determines the structure of our forces, but it sheds light on the meaning of the numerical ratios of forces involved. For example, it is widely held among military planners that, generally speaking, an attacker needs a significant numerical force advantage in order to have a reasonable chance of overcoming the natural advantages of prepared and mobile defense. But geographical features and the ability of an attacker to concentrate forces locally and undetected can affect that judgment. In any event, predictions of the outcome of a war cannot be based solely--or even very heavily--on the pre-war numerical ratios of forces.

Second, we should avoid simplistic static indicators that measure numbers of a given weapon on one side versus numbers of that same weapon on the other. Modern warfare, for example, is not a series of one-on-one tank duels.

A tank attack is repelled and defeated by a combination of defending tanks, ground-based anti-tank weapons, tactical air, and other combat and combat support force multipliers. (As I indicated in Chapter 3, our technological prowess, applied to precision-guided weapons, is an integral component of our strategy for deterring, or defending against, a tank attack by a numerically superior force.) A pre-war numerical advantage in tanks does not ensure--and is not necessarily a good predictor of--victory in an armored attack. Thus, evaluations of the balance should be comprehensive and take into account all relevant assets, with due regard for their specific contributions to military capability.

Third, it must be remembered that while U.S.-Soviet comparisons have a certain usefulness in themselves for some purposes, in an actual war in Europe both nations would fight as part of larger alliances, and thus allied forces on both sides must be counted. Simple U.S.-Soviet comparisions tend to create a skewed impression of Soviet preponderance, in large part because while the Soviets provide the overwhelming bulk of total Warsaw Pact capabilities, quite the opposite is true in the case of the United States and NATO. After mobilization, the European members of NATO would contribute three-fifths of NATO's tactical aircraft, three-fifths of its tanks, and four-fifths of its manpower. (While total allied capabilities should be incorporated into a European net assessment, the same rule does not apply in scenarios outside the NATO Treaty area for which there are no alliance military commitments as such--Southwest Asia is a prominent example.)

Let me elaborate a bit on the advantages and disadvantages of NATO and the Warsaw Pact.

With its numerical advantage, the Pact can launch a large attack on relatively short notice. While a "bolt-out-of-the-blue" attack is not likely, the Pact is capable of mounting a moderate attack with only a few days of mobilization, and a larger assault 15 days after mobilization. A numerical superiority of 2:1, while certainly not ensuring ultimate victory, could be decisive in determining the outcome of the early battles. This numerical advantage also enables the Pact to concentrate massive forces at key points along NATO's defensive lines. Such concentration of forces, with the enormous firepower of combined arms, could enable the Pact to gain breakthroughs that, if unchecked, could permit further rapid advances into NATO territory along multiple axes.

There is, of course, another side of the coin for the Pact forces. They rely on about 30 non-Soviet Pact divisions and on Soviet reserve divisions--the reliability of the former and the military effectiveness of the latter are questionable.

Another important potential weakness was alluded to in Chapter 2, and that has to do with Soviet command, control, and communications. Owing to certain aspects of Soviet heritage, their combat operations tend to be governed by specific rules. Proper application of these rules requires centralized authority and detailed control over subordinate units, and it results in rigidity and stifling of initiative in the Western sense. (In the Soviet military vocabulary, initiative means determination and perseverence more than imagination and creativity.) The Soviets probably view their C^3 system as an optimal one, in that it

reflects their traditional emphasis on top-down control. However, the inflexibility inherent in such a system, coupled with the tendency of seniors to distrust subordinates and to provide them with only minimum essential information on the evolving tactical situation, could have adverse consequences in the face of rapidly changing, often unpredictable battlefield situations, particularly if their means of control are disrupted by U.S. forces.

In contrast, NATO--on the defense--would have, so long as major breakthroughs by the Warsaw Pact can be prevented, the general advantage of fighting from pre-selected positions on pre-selected terrain, which means that NATO units can train on the very ground they will be defending. NATO commanders and their units survey and literally walk every feature and every square meter of the battlefield--probable lines of attack, weapon placement sites, areas for mines and obstacles, lines of sight and fields of fire, cover and concealment. The attacker, on the other hand, would know this terrain only from a map and from intelligence.

Further, the Western European Alliance members would be fighting to defend their homelands from communist attack--an important qualitative factor not to be overlooked or underestimated. Additional NATO advantages include larger service support structures, as well as generally higher quality anti-tank weapons, C^3I capabilities, and tactical air.

NATO's disadvantages are really the other side of the coin of Pact advantages--inferior numbers, offensive and defensive chemical weaknesses, not having advance knowledge of the exact time and place of the attack, and inadequate rear area defense against significant and sustained Pact breakthroughs. In addition, lack of standardized doctrine, training, and equipment impair the effectiveness of NATO's forces, as do the separate national command structures probably inherent in a voluntary coalition.

With this general discussion of the problem of assessing the balance and of the comparative advantages and disadvantages of the offense and the defense as backdrop, let us look at the particulars of the European balance.

2. Evolution and Current State of the Balance

a. The Center Region

Over the past 15 years, the NATO-Warsaw Pact land forces balance has been remarkably stable, although adverse for NATO, in terms of manpower (1.2:1) and division-size units (2:1). Both sides have steadily increased their combat potential, as measured in terms of weapons in operational units, but the momentum of Pact growth has been significantly greater. In the late 1960s and early 1970s, the NATO Allies emphasized the development and deployment of highly capable, technologically sophisticated weapons in order to offset the Pact's numerical superiority. NATO still retains its overall qualitative edge, although in recent years, the Soviets have made considerable gains in enhancing the quality of their weapons and equipment and have exported many of the fruits of these labors to their allies.

At the present time, the principal areas of Pact numerical advantage include not only manpower and combat units, but tanks, armored personnel carriers and fighting vehicles, artillery, and air defense systems. NATO maintains an edge in air support for ground forces, and in the range and quality (if not necessarily quantity) of logistical support, and quality of anti-armor systems. The two alliances have approximately equal numbers of anti-armor attack helicopters.

On some of the common qualitative indicators, NATO measures poorly; on others, quite well. NATO suffers, for example, from a lack of operational reserves in relation to its thinly spread forward forces. At the same time, owing to a deeply rooted cultural tradition that emphasizes decentralization of operations, devolution of authority, and the exercise of individual initiative, NATO has an inherent advantage in the quality of its personnel. On the other hand, Soviet officers and enlisted men appear to be more highly disciplined, better trained, and in some cases even better educated (e.g., in the engineering sciences) than their NATO counterparts. NATO, however, tends to have an advantage in its practiced ability to handle large unit operations.

Tactical air is one aspect of the Center European balance in which most observers have traditionally felt that NATO enjoyed a signficant qualitative advantage. But several recent trends and asymmetries have begun to raise doubts about this long-standing view.

Aircraft-for-aircraft, NATO still maintains an edge in the performance of top-of-the-line fighters. If anything, the lead, measured in these terms, is widening: the F-15 probably has a more impressive array of individual performance advantages over current Soviet MiG-23 (FLOGGER B/G) than the F-4 had over the MiG-21 ten years ago. But, there is mounting evidence that the ability of these kinds of advantages (long stressed in the West) to confer real leverage over air-to-air combat outcomes depends on tactical and doctrinal circumstances. At the same time, there has been over the past decade a significant enhancement of Pact air forces, especially due to improvements in the two areas cited previously in this chapter--ground-based air defense and range/payload characteristics needed for credible strike and interdiction missions.

All of these qualitative tactical air factors must be overlaid on the potential numerical advantages of the Pact in the early days after they mobilize. On the other hand, Pact figures include aircraft in East European national air defense units--aircraft that probably would concentrate on homeland air defense, at least in the early stages of a major war.

The adverse implications (for NATO) of these broad trends in the Center Region air balance are accentuated by the asymmetry that exists between the two sides' requirements for tactical air. By and large, conventional defense of the West appears to depend more heavily on airpower than does a Pact-style combined-arms offensive. NATO air forces not only must gain and hold air superiority above the battlefield, but also must bring to bear enough firepower to help compensate for the West's numerical inferiority on the ground.

On balance, for ground and probably for tactical air in the Center Region, the numbers favor the Pact, but NATO's continuing qualitative advantages--not only its unfortunately narrowing lead in technology--act to reduce the possibility that NATO forces would find themselves overwhelmed, at least in the early

stages of a future war in Europe. It should also be noted that major Soviet mobilization for use in Poland or continued deployment of major Soviet forces physically in Poland after a pacification could increase the threat to NATO, though fighting in Poland could divert Soviet and other Warsaw Pact forces.

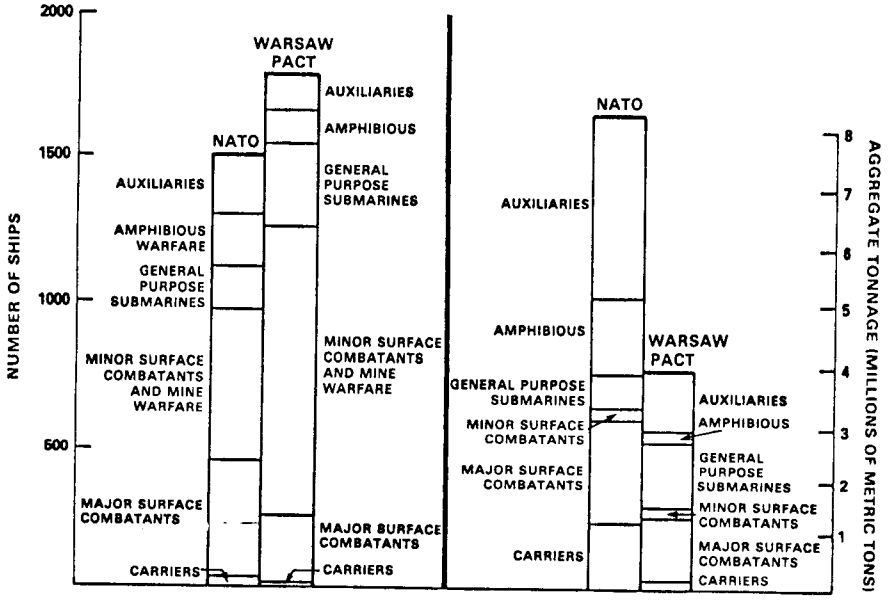
At the same time, the need to divert U.S.-based ground and tactical air forces to our Rapid Deployment Forces will deprive NATO of some CONUS-based U.S. reinforcements. Thus, it is essential that NATO's already-planned rapid reinforcement and modernization programs be implemented on schedule, and that our allies devise additional measures to offset these losses due to U.S. diversion to RDF.

b. The Naval Balance

The combined Warsaw Pact navies hold a quantitative lead over NATO in total numbers of ships. However, gross numerical comparisons are misleading, since they do not account for size or capability, and because large portions of the naval forces of both alliances are restricted to operations in peripheral waters. Chart 5-1 indicates the current balance in terms of both numbers of ships and aggregate tonnage. NATO's overall naval capabilities are more limited than mere numbers would indicate because many non-U.S. ships are obsolete and because interoperability deficiencies still plague combined operations.

Chart 5-1

1980 GENERAL PURPOSE NAVAL FORCES OF NATO AND THE WARSAW PACT



The NATO-Warsaw Pact naval balance must be assessed not only in terms of aggregate comparisons of similar forces, but also in terms of the global scope of a U.S.-Soviet confrontation, the overwhelming influence of time and distance on the commitment and engagement of opposing naval forces in a theater war, and the interactive effects of ground and air forces on the maritime campaign. As for operational requirements, NATO faces the much more difficult and demanding requirement of controlling large areas of the Atlantic, of the Mediterranean, and of the other waters of western Europe--a mission that dictates a larger advantage in numbers to ensure a high probability of success.

In constrast, the Warsaw Pact naval mission could be quite limited: to deny NATO the use of the seas peripheral to Europe long enough to permit Pact ground forces to overwhelm an unreinforced western Europe. For example, concerted mining operations of key NATO port complexes during the initial stages of hostilities could at a minimum inhibit, or even prevent, NATO rapid resupply and reinforcement by sea. Over the longer term of hostilities, the Soviets might attempt to interdict the North Atlantic, and prevent NATO from operating its naval forces on Europe's flanks.

Allied programs for shipbuilding and modernization of such critical systems as air defense and mine countermeasures are modest at best, while the Soviets have made a substantial commitment to modernizing and expanding all major elements of their naval and merchant fleets, particularly in offensive sea denial systems for use in the peripheral seas.

D. Maintaining the Balance--the NATO Response

The steady effort by the Soviet Union to improve its forces requires us to follow through on the efforts we began at President Carter's initiative at the London Summit in 1977, and which came to be known as the NATO Long-Term Defense Program (LTDP). We must ensure that we achieve overall NATO Force goals. In parallel, we should continue to seek arms control agreements in Europe to build confidence and, over time, to reduce military forces on both sides.

In terms of modernization, we need to implement the LTDP. Its objective, in concert with national programs, is to correct deficiencies in a few selected high-priority areas. It also has created a mechanism for follow-through and monitoring to ensure implementation. Further, it provides a blueprint for national defense programs and is an essential component of overall NATO defense planning.

NATO has made real progress in a number of LTDP programs, especially readiness, maritime posture, consumer logistics, and command, control, and communications. Progress in other areas, however, is limited, and the Alliance must renew its efforts, particularly in electronic warfare, training and equipment of reserve forces, war reserve stocks of ammunition and fuels, mining and mine countermeasures, defense against chemical warfare, and the provision of additional European reserve brigades. National defense planning in the Alliance also needs to be more closely aligned with the LTDP.

The changed strategic situation we face dictates an urgent requirement for NATO to accelerate the implementation of LTDP measures and the achievement of force goals. The United States is committed to project its military power into

Southwest Asia, if necessary, in order to protect NATO's collective interest there. The Alliance, under the new division of labor, must be prepared to meet the gap in NATO defenses that could result from the possible diversion of U.S. forces to meet the security requirements for that area. The European allies must provide more airlift for rapid movement of reinforcements to Europe to replace U.S. airlift needed for operations outside the NATO area. They must also provide additional maritime forces and develop more reserve units to fill the gap created by U.S. reinforcements designated for NATO that could be deployed elsewhere. The U.S. reinforcements require increased host nation support and infrastructure to replace U.S. support needed in Southwest Asia in time of crisis.

A most important task--because it underlies all others--is that of attaining at least three percent real annual increases in defense spending. Since 1977, the three percent goal has served effectively as a benchmark to spur greater defense efforts by NATO nations, including the United States. Bringing our capabilities up to the level necessary to meet our new burdens will require sustained effort by all members of the Alliance. In 1979, only five countries met the three percent goal, and it appears that only five will meet it in 1980 and in 1981 as well. Unless the three percent commitment is met, the capability, credibility, and solidarity of the Alliance will be diminished.

With respect to arms control in Europe, we and our NATO Allies continue to participate in the negotiations on Mutual and Balanced Force Reductions (MBFR), where we seek to complement our modernization efforts with agreement on a package of associated measures for verification and confidence-building, as well as on manpower limitations and reductions. Both East and West have agreed in MBFR to the objective of manpower reductions to parity in the form of a common collective ceiling. We disagree, however, over: (1) data on Eastern manpower levels (specifically, Warsaw Pact forces deployed in East Germany, Poland, and Czechoslovakia) and, consequently, on both the size and the residual level of Eastern manpower following reductions; (2) the nature and operation of manpower ceilings following reductions; and (3) the nature and extent of the associated measures necessary to monitor and increase confidence in any agreement.

Primarily because of the continuing disagreement on data, we have made scant progress toward an agreement in seven years of talks, and until the data impasse is resolved, we cannot be optimistic that these negotiations will produce positive results anytime soon. Nevertheless, our current approach to MBFR, which envisions a scaled-down initial agreement as the first step towards more encompassing arrangements later, has established a simpler basis for progress, should the East take the necessary decisions required for us to proceed.

Meanwhile, at the Madrid Review Meeting of the Conference on Security and Cooperation in Europe (CSCE), the French proposed a follow-on conference on confidence-building measures (CBMs). Akin to associated measures in MBFR, the CBMs to be negotiated under this proposal would be more militarily significant, verifiable, binding, and geographically extensive (i.e., they would extend "from the Atlantic to the Urals") than those now contained in the CSCE (Helsinki) Final Act. Their negotiation would be tied firmly to the CSCE process and to the need for a balanced Madrid outcome that includes progress on human rights as well as security

issues. Such a negotiation would also have to complement, or at least not interfere with, MBFR. If improved CBMs result from the French proposal, they could contribute to greater openness (e.g., less Eastern secrecy) with regard to military activities and, thereby to a more stable relationship in Europe.

* * *

In summary, a changing strategic situation gives new significance to the Atlantic Alliance and a greater sense of urgency to the already agreed requirement for NATO to accelerate the implementation of LTDP measures, the achievement of force goals, and the provision of infrastructure facilities. At the same time, but without compromising these efforts, we must continue to pursue equitable and verifiable arms control measures to stabilize the balance and restrain the arms competition. We must be concerned with the Soviets' willingness to use their increased military power to threaten NATO's vital interests, both within and outside Europe. Greater resources for defense, and more efficient use of them, must be the hallmarks of the security policies of all members.

CHAPTER 6

POLICY FOR FORCES III: NON-NATO CONTINGENCIES

The United States has for many years maintained a military presence outside the NATO theater--a major one in the Far East, a significantly lesser one in the Caribbean, as well as other small contingents of forces outside the continental United States. The major new development in our policy, programming, and force structure for contingencies outside the geographic boundaries of NATO is the creation of the Rapid Deployment Forces (RDF). I will begin this Chapter with a discussion of the RDF and power projection, turning later to our forces in East Asia and the Pacific. Political relations in both areas--among the countries of the region and between the United States and those countries--are central to the security situation and also determine how effectively we can deploy forces. This chapter concentrates on military threats and U.S. military forces designed to meet them.

I. RAPID DEPLOYMENT FORCES

A. The Concept

For most of its history, the United States has had a capability to project military power into other regions of the world, in order to protect our vital interests; indeed, that has been one of the historic missions of the United States Marine Corps. As indicated in Chapters 2 and 3, recent events have reemphasized the nature and extent both of our interests in remote areas of the world and of the threats to them--particularly the problem of access to the Persian Gulf oil vital to us, but even more so to our allies and friends. When this Administration came into office four years after the 1973 oil embargo, we found that the United States had little or no capability for quickly and effectively deploying military forces to that critical region of the world. We have begun a careful effort to design and implement a security strategy for that region and a capability to execute that strategy--an effort that was intensified after the Iranian revolution, the seizure of our diplomatic personnel in Iran, and the Soviet invasion of Afghanistan. While the potential missions of our Rapid Deployment Forces are global, in practice most of our planning and programming has focused on Southwest Asia.

B. The Threat

Let us first examine the growing Soviet power projection capabilities, which are increasingly a factor in our own worldwide military planning, and then look more specifically at Soviet capabilities in Southwest Asia. Historically, and with good reason, the Soviets have been concerned about their border regions, and have developed strong and flexible military capabilities to handle threats to the integrity of their borders. But, gradually over time, the Soviets have been paying increased attention to the development of power projection forces that would enable them to assert their influence in areas distant from their borders.

Major shifts have occurred in Soviet procurement strategy, in order to enhance their ability to conduct distant operations; these shifts are primarily, but not totally naval-oriented:

-- the introduction of the KIEV-class aircraft carrier and several new classes of surface warships;

-- the increase in sea-based tactical aircraft, from none in 1974 to about 35 today;

-- the deployment of the IVAN ROGOV-class amphibious ships with a steaming endurance of up to 9,000 miles;

-- the continuing growth in amphibious ship displacement tonnage, and in the number of underway replenishment ships;

-- the deployment to date of roll-on/roll-off ships specifically designed for use by heavy mechanized equipment;

-- a slight but steady increase in the number of assault units of the (still very small) naval infantry forces; and

-- the availability of seven airborne divisions in a high state of readiness and growing numbers of independent air assault brigades.

Soviet power projection capabilities are even more impressive in terms of the Persian Gulf region. For example, current Soviet strategic airlift capacity is considerably less than ours, but the distance from the Transcaucasus to the northern Persian Gulf is only one-sixth of that which aircraft operating from the United States would have to travel. Further, a Soviet attack in the Persian Gulf region would not necessarily require staging through other countries and would not depend highly (although it would be helped by) airlift. The Soviets border on Iran to the north and occupy Afghanistan to the east, and they have a substantial number of divisions in varying states of readiness based in the Transcaucasus, North Caucasus, and Turkestan military districts. Soviet Frontal Aviation based in Afghanistan can reach most points in the Persian Gulf region and large portions of the Arabian Sea. Port facilities in the People's Democratic Republic of Yemen and Ethiopia greatly enhance the operating potential of the Soviet fleet in the Indian Ocean and Arabian Sea.

C. U.S. Capabilities

Aside from political complexities within the area, distance is the central problem we confront in planning Rapid Deployment Forces that can defend our interests in the vital Persian Gulf-Indian Ocean region: by air from the East Coast, Southwest Asia is over 7,000 miles away; by sea through the Suez Canal, about 8,000 miles; and by sea if the Canal were closed, over 12,000 miles. To a large extent, the problem of distance drives our plans and programs, especially those to enhance our lift capabilities.

Any strategy for U.S. defense of its vital interests in this distant region must involve several dimensions:

-- strengthening our continuing naval presence there;

-- prepositioning equipment and supplies in the area;

-- enhancing our airlift and fast sealift assets;

-- providing for overflight and access rights in times of emergency;

-- designing and equipping versatile forces to meet a wide range of contingencies;

-- enhancing indigenous capabilities;

-- exercising military operations with friendly powers in the region;

-- improving our intelligence and early warning apparatus; and

-- coordinating planning for the future.

Implementing such a strategy requires significant allocation of U.S. resources, and cooperative and complementary actions by our allies and friends both inside and outside the region.

Over the past few years, we have made considerable progress in these areas. But much work remains. To some, our capabilities may appear severely limited; in my opinion, this is a reflection of how little was in place when we took office--largely because this country was depending principally on the former Shah's regime to protect the region--and, therefore, of how far we had to go. Both our achievements to date and our program for the future are described in Chapter 6 of Section II.

By showing the Soviets that we have the military capability and the national will to respond to aggression, we seek to deter such aggression in the first place. The determination and ability to move a credible American force rapidly and effectively changes the calculus for the Soviets; they must then consider the probability that any aggression by them will meet not only indigenous forces, but also those of the United States. Given such an ability on our part to meet them on the spot and our capability of shifting the geography of the conflict, the Soviets must consider the possibility that renewed aggression by them may lead to a much wider war, escalated both in intensity and geography.

One final point regarding the RDF must be emphasized: our plans and programs for Southwest Asia serve the security interests of our European and Asian allies, as well as those of local states. Constitutional, political, and other limitations may constrain the extent to which most friendly states (even many with a greater direct stake there than we) will be able to send forces with us to the Persian Gulf and Indian Ocean, but even modest participation could be critical in uniting us. Also, these same nations can--and must--contribute a great deal

indirectly, by doing more to enhance collective security in their own regions and by facilitating movement of the RDF to the conflict area. Neither the Congress nor the American people will long be willing to carry an unfair share of the total burden. We cannot do it all. If our European and Asian allies will not increase their defense efforts appropriately, the American people are likely to demand some scaling down of our own plans and programs.

II. THE FAR EAST

One of the more destabilizing features of the political context in the Far East has been the series of conflicts that have pitted one communist nation against another: the USSR-PRC border clashes in the late 1960s and early 1970s, the Vietnamese invasion of Cambodia, and the Vietnam-China war. These conflicts and other changes in the Far Eastern political context have been reflected in evolving military alignments and force postures. The 1950 USSR-PRC Treaty of Friendship and Mutual Cooperation has lapsed, but unilateral Soviet military capabilities in the Far East have steadily increased. Sino-Soviet competition has spread throughout the region. Moscow and Hanoi have signed a Peace and Friendship Treaty, and the Soviets have gained access to Vietnamese air and naval facilities, while providing the SRV with significant military assistance. At the same time, North Korea has undertaken a sustained military buildup during the 1970s, which, relative to its population and economy, exceeds anything else in the region and poses the main military threat to stability in Northeast Asia.

As a result of the substantial differences in levels of military efforts signified by these trends, U.S. military cooperation with Japan and the Republic of Korea has increased. At the same time, U.S.-Chinese relations have improved significantly.

A. The Soviet Threat

A major military threat confronting us in the Far East is the power and the reach of the Soviet Navy. Although the largest portion of the Soviet Navy in every category of ship is assigned to the three European fleets, the Soviet Pacific fleet is powerful indeed--a large number of submarines, a light aircraft carrier, 78 principal surface combatants, 50 mine warfare and 11 major amphibious warfare ships, and 25 underway replenishment ships. While the Soviet Pacific fleet has not grown much in terms of numbers, it represents a much broader range of capabilities than it did a decade ago.

B. The People's Republic of China (PRC)

China considers the Soviet Union its major adversary and has deployed its best and most capable forces to the northern military regions. Despite the technological obsolescence of its equipment, the People's Liberation Army (PLA) is capable of conducting a credible defense against conventional attack. Acute resource constraints, relatively low priority of military modernization, and limited technological absorptive capacity will hamper PLA modernization, even with western technical assistance. Given the constraints, it would take years to develop the PLA into a force comparable in modernity to those of the United States and the Soviet Union today.

The 3.9 million People's Liberation Army (PLA) ground force will continue to be the backbone of the PRC's military force structure. The PRC has been improving ground force capabilities and readiness, with special attention being given to enhancing armor, anti-armor, and anti-aircraft weapons, including expansion of infantry division armored elements, and increases in heavy weapons firepower.

The PLA air force includes over 3,000 fighters, with the F-6 (MIG-19) as the primary interceptor. Despite the large numbers of PLA aircraft, they would have difficulty achieving air superiority over the battle area against Soviet air forces operating in other than a clear daytime environment, or at very high or low altitudes. The PLA capability should improve as additional all-weather fighters enter the force. Tactical aircraft, including fighter-bombers and medium range bombers, are detailed to the ground attack mission. PLAAF training is limited in the area of combined arms operations.

The PLA navy emphasizes coastal defense, but will continue to demonstrate a growing capability to maintain security of territorial waters, to protect sea lines of communication, and to support PRC claims on islands and seabed resources. Submarines and main surface force units are expected to undertake limited fleet operations or out-of-area operations.

C. U.S. and Allied Capabilities

1. The United States

The United States maintains flexible forces in the Far East to provide peacetime presence and the ability to respond to a variety of contingencies.

U.S. land forces in the region consist of the Army 2nd Infantry Division in Korea, the 25th Infantry Division in Hawaii, two regiments of the 3rd Marine Division in Japan (Okinawa) with a brigade in Hawaii, and a Marine Amphibious Unit (MAU) afloat. A second MAU or Battalion Landing Team alternates between the Far East and the Indian Ocean.

U.S. tactical air forces in the Far East comprise three USAF tactical fighter wings located in Korea, Japan, and the Philippines, and two tactical airlift squadrons. About two-thirds of a Marine Air Wing is stationed in Japan; the remainder of the wing is in Hawaii. These forces are very mobile and can be moved to a trouble spot rapidly.

The U.S. 7th Fleet normally includes two carrier battle groups, four long-range ASW patrol squadrons, support forces, a number of nuclear submarines, cruisers, destroyers, and frigates. The decision to put two carrier battle groups (CVBGs) in the Indian Ocean at the present time has drawn a deployed CVBG from both the 6th Fleet in the Mediterranean and the Western Pacific area of the 7th Fleet. Although our long-term naval deployments in the Indian Ocean have not been decided, and cannot be until we evaluate the unfolding of the current and possible future crises, it is very likely to be in our best interests to sustain higher levels of deployments in the Indian Ocean than we have in the past.

The capability of U.S. and allied forces in the Far East to meet the range of possible threats, or to be reinforced in timely fashion with CONUS- and Hawaii-based forces, depends on the nature and timing of the contingencies. The most likely regional contingencies would be an all-out North Korean attack on the Republic of Korea or a limited Vietnamese attack on Thailand. If North Korea attacks South Korea, we plan to provide sufficient U.S. forces and support to ensure that the attack fails and that the original boundaries of South Korea are restored. If Vietnam attacks Thailand, our response will be guided by our desire to preserve the territorial integrity of Thailand, and will be determined through consultations with the Congress and the Thais, as well as by actual Thai requirements.

Because of the possibility of a three-theater conflict (a NATO-Warsaw Pact confrontation, a war in Southwest Asia, and a North Korean attack on South Korea), we must emphasize flexibility in our strategic planning. This does not mean we should assume that a NATO-Warsaw Pact conflict would automatically and immediately trigger a worldwide war, though we must hedge against the possibility of a rapidly spreading war. As our lift capabilities circumscribe the feasibility of simultaneous reinforcement of three theaters, even to the extent of our limited CONUS-based forces, we must develop options to minimize the likely drain on our resources from simultaneous multiple demands. We must be flexible enough to move our forces, particularly air and naval forces, from one theater to another, to handle threats sequentially insofar as circumstances allow.

2. Japan

Devastating defeat in World War II left Japan with a deep aversion to military issues and eventually led to its constitutional prohibition of military forces except for self defense. Since the 1960s, Japanese defense expenditures have consistently amounted to less than one percent of GNP--a figure well below that of any other major industrialized nation.

With new encouragement from the United States, however, Japan has slowly begun developing a more significant defense establishment. Today, Japan's Maritime Self-Defense Force (including ASW escorts, submarines, and aircraft) has more convoy escorts, naval aircraft, and minesweepers than the U.S. Seventh Fleet, and the Air Self-Defense Force has more tactical aircraft than the U.S. Fifth Air Force. The Ground Self-Defense Force consists of some 13 divisions and separate brigades.

A growing recognition that the Soviet Union poses a threat and an emerging realization that the United States cannot single-handedly provide for the security of all of the free nations of the world have led to Japanese acceptance of the need to do even more for their own defense. Thus, Japan has embarked on a long-term, significant program to upgrade the quality and the sustainability of its Self-Defense Forces. We applaud this effort and have encouraged the Japanese to try to move its schedule up a year. Japan has a major capability to assist us in future defense efforts--in economic terms, the greatest potential for expanded military efforts of any ally. The real questions for the future are how much and how fast will Japan, with the second or third largest economy and the eighth largest defense budget in the world, build up its existing forces to help meet the common threat.

Considerable progress is being made. Last year, Japanese ships and aircraft performed very capably in a joint naval exercise with American, Canadian, Australian, and New Zealand forces. Combined defense planning is being conducted under a formal set of Guidelines for Defense Cooperation. In 1980, Japan spent over $10 billion on defense, including approximately $800 million for the upkeep of U.S. forces in Japan.

Nonetheless, much more needs to be done. The effort we are encouraging the Japanese to undertake is neither unwarranted nor excessive. It is important to note, however, that neither they nor we are proposing that the Japanese forces move away from their limited, defense-only role, but we are urging them to improve their defensive capabilities. A steady, indeed accelerated, and substantial increase in Japanese self-defense capabilities are needed to enable Japan to work more effectively with us in meeting our common security interests.

3. Republic of Korea (ROK)

We believe the Korean political scene may stabilize soon and we expect the economy to rebound and experience moderately strong growth rates over the next five years.

The most useful way to view ROK military forces is in comparison with those of North Korea. Although ROK land forces are only about 20 percent smaller than North Korea's, the North Korean Army's greater numbers of armored vehicles and artillery give them a great deal more offensive shock power than the ROK Army. On the positive side, North Korean ground forces would have to attack well-prepared ROK defensive positions manned by well-disciplined troops, and the North Koreans would be attacking a country over twice their size, one that can mobilize over 3,000,000 soldiers.

Another danger is the possible infiltration of North Korean "Special Purpose Forces" into ROK rear areas where logistics, air defense, and tactical air support facilities are located. Those that managed to infiltrate would have to be countered by ROK rear area security forces.

U.S. forces would play a key role in buying time for ROK mobilization. U.S. forces will be needed to provide naval, tactical air, and logistics support essential for the defense of South Korea.

North Korea has substantially more tactical aircraft than the combined numbers of ROK and USAF aircraft in Korea, but they are generally older and inferior to the ROK/USAF assets. We could augment our tactical air forces in South Korea rapidly in case of a confrontation to build up a substantial qualitative and quantitative edge over the NKAF. In case of simultaneous contingencies, the size and rate of buildup would be reduced.

The ROK navy is capable of coastal patrol and defense, but has very limited deep water capabilities. North Korea has 16 submarines that pose a significant threat. U.S. naval forces would be needed to prevent interference with military shipping to South Korea.

4. Association of Southeast Asian Nations (ASEAN)

The Vietnamese invasion of Kampuchea and the continued presence of large numbers of Vietnamese troops along the Thai/Kampuchean border and in Laos have caused great concern among the ASEAN nations. Following the Vietnamese invasion of Kampuchea and especially in light of the SRV incursion into Thailand last year, the Thais are increasing their defense efforts, with the help of U.S. security assistance. Indonesia and Malaysia also decided to increase their defense efforts. All ASEAN countries are modernizing their forces, especially their armies, coastal surveillance, and air defense forces, to reorient somewhat from internal threats towards a more conventional threat. However, ASEAN is not a military alliance, and the bulk of the defense forces of its members will remain targeted on missions of internal security.

5. ANZUS

Australia and New Zealand maintain high quality armed forces that are capable of dealing with most immediate regional threats they might face. Both would rely on joint operations with U.S. forces under the ANZUS treaty to meet any extra-regional threats. Australia, with two squadrons of F-111C fighter-bombers in the RAAF, tactical airlift, the RAN carrier, and an ocean-going amphibious lift ship, has a modest power projection capability.

D. Evolution and State of the Balance in East Asia

The balance between North and South Korea has shifted from rough parity in 1970 to Northern superiority, as North Korea's ground forces have nearly doubled. U.S. air and ground forces in the South produce a rough overall balance. The Soviets have improved their forces along the Sino-Soviet border both quantitatively and qualitatively, have upgraded their Pacific Fleet, have deployed BACKFIRE bombers and SS-20s to Asia, and increasingly have used military facilities in Vietnam. Instability in the Persian Gulf and expanded U.S. commitments to that region have resulted in the temporary redeployment of U.S. forces from the Sixth Fleet and the Western Pacific area of the Seventh Fleet.

The dimensions of Chinese military power and their use of it have become more important factors in the Far East. The 1979 campaign against Vietnam demonstrated a Chinese willingness to attack a Soviet ally. At the same time, it illuminated the fragility of the political and military balance in Southeast Asia and underscored the potential for dangerous escalation of regional conflicts.

In a major success of long-term American policy, U.S. forces in the Far East have been instrumental in providing the security that enabled Japan, the Republic of Korea, and other nations of the region to devote their resources so successfully to economic growth. As these nations have developed, even prospered, they have also assumed increasing responsibilities for their own defense. Thus, through close and continuing bilateral relations, the combined military power of the United States and its Far East allies and friends has increased. This, in turn, has made it easier for us to redeploy some military resources to areas outside the Far East--redeployments that, in many cases, have actually contributed to Far East security.

The evolution of the military balance in the Far East has been characterized by two contrasting approaches--one stressing economic growth, the other emphasizing direct military buildup. Historically, victory in a long war goes to the side with the greater economic potential. American, Japanese, and South Korean economic prowess is well known and provides an important margin of security over the long run. On the other hand, success in a short war requires a sizable advantage in forces or some other compensating factor such as surprise. In this light, the North Korean buildup, and for that matter the sustained Soviet expansion, deserve close watching to ensure that their short-term advantages do not tempt them into aggression and war.

It is important to note that, under any circumstances, Soviet military forces in the Far East face formidable problems such as long, vulnerable supply lines and limited access to the open seas. Also, the Soviet Union is politically disadvantaged by already being viewed as the primary threat by many countries in this vast region.

E. Our Response

Our goal is to enhance the combined readiness and effectiveness of U.S. and friendly forces in the Western Pacific to facilitate a coalition strategy.

-- We seek to continue the evolution of our relationship with Japan towards an active defense partnership, and we are suggesting significant Japanese defense improvements, stressing sustainability of all forces, air defense, and anti-submarine warfare.

-- We seek to continue our cooperative security relationship with South Korea to ensure that an adequate deterrent posture is maintained, strengthening stability on the peninsula and in the region, while South Korean military forces continue to modernize and to assume greater responsibility for their own defense.

-- We seek to expand our long-time security relationship with Australia and New Zealand.

-- We also seek to assist the individual states of ASEAN, and particularly Thailand, in improving their capabilities for self-defense.

At the same time, China makes a major contribution to stability in East Asia and elsewhere by tying down Soviet forces along the border. We seek to widen and deepen military contacts with China gradually, and we are providing measured support for China's defense modernization.

CHAPTER 7

SUPPORT POLICY: READINESS AND SUSTAINABILITY

I. CONCEPT

Total military capability is comprised of four major components:

-- force structure -- the numbers, size, and composition of the major units that constitute our armed forces;

-- modernization -- the introduction of new, technically advanced equipment to improve our existing inventory, and the replacement of aging, obsolescent equipment with more modern, more capable systems;

-- readiness -- the ability to deploy and to employ our forces effectively without unacceptable delays; and

-- sustainability -- the ability to support our forces over time, allowing them to fight long enough and hard enough to win.

In the three preceding chapters, I have addressed our policies for determining the size, composition, and rates of modernization of our forces. Equally important to our capacity to wage war--and therefore to deter war--are the readiness of our forces and our ability to support and to sustain them over time. The U.S. military must be adequately manned, highly trained, fully equipped, and properly maintained. It must be ready for deployment to any potential combat theater, and it must have the staying power to defeat any adversary.

Given finite resources--and resources are always finite--the most demanding task of defense management is to maintain a proper balance among the four components of military capability. Improvements in all dimensions must proceed to some extent in parallel; no absolute choice can be made between one element or another. If, for example, we modernize at the expense of readiness, we have the promise of a future military capability, but at the risk that we will be unable to respond to provocation now. If, on the other hand, we fund readiness at the expense of modernization, then we condemn ourselves to confront sophisticated threats of the future with operable, but obsolete, forces of the past. Thus the policies we adopt must be prudently designed and carefully balanced to maximize our military strength both today and tomorrow.

In assessing the combat capability of our forces, we necessarily must rely on readiness measures that, because they are compiled under peacetime conditions, are a conservative and less than complete indication of our ability to go to war and fight effectively. In wartime or other emergency missions, additional supply, maintenance, and transportation resources--held in reserve in peacetime and not counted in peacetime readiness measures--would be devoted to upgrading our forces. Moreover, combat deployment involves substantial changes to normal operations--for example, peacetime training exercises and periodic preventive maintenance operations cease while materiel repair and combat preparation receive top priority. War reserve materials, stocks, and spare parts, along with the necessary maintenance

manhours, are made available to increase rapidly the amount of operational equipment. Thus, wartime availability ratings would be expected to run higher than measured peacetime readiness. Nonetheless, peacetime ratings do serve an invaluable function in helping to identify and alleviate readiness problems, and the information provided by these reports enables us to allocate resources more efficiently in order to improve readiness.

While our conventional forces are ready to go to war and to fight effectively today, some areas need improvement. We are taking corrective actions to improve readiness and are shifting more of our attention to near-term needs now than at any time since the Vietnam War. While the ability to fight during the initial period of a major conflict has taken priority over longer-term sustainability, we have also embarked on a program to enhance further our ability to sustain our forces over a longer period of combat. This chapter assesses the health of our forces today. It does so under four headings, each comprising one of the critical elements of readiness and sustainability: manpower, materiel, mobility, and mobilization.

II. MANPOWER

The men and women of our Armed Forces are our most important national security assets. Maintaining and enhancing their combat effectiveness is our primary defense manpower objective. I regard our current forces as highly potent and effective. Just as significantly, I think we are now taking the right steps to make us still more powerful in the years ahead.

A. Manning the Peacetime Active Duty Force

1. Recruiting

Our prime recruiting pool--males between 17 and 21 years of age--reached the largest levels ever in 1978. By 1992, that pool will be 20 percent smaller. This demographic erosion must be put in perspective--for the near future, there will continue to be more men in the prime recruiting ages than there were when the Gates Commission recommended adoption of the All Volunteer Force (AVF). Still, the cushion provided by the exceptionally large recruiting pools resulting from the post-World War II baby boom will be lost, and the challenge of manning the force with qualified recruits will be correspondingly intensified.

FY 1979 was not a good recruiting year. FY 1980, in contrast, has provided significant encouragement--all the Services met exceptionally large recruiting goals, including the slack that had to be made up because of 1979's deficiencies. Sharply increased pay, improved recruiting efficiency, and a variety of new enlistment incentives (including enhanced educational allowances) make me optimistic about achieving our 1981 goals.

Recent debates about AVF manning have turned to the question of the abilities of the young men and women serving in the military. Dispute on this subject is fueled by the difficulty in assessing and predicting quality of performance in the military, which is a product of many individual traits--intelligence, integrity, skill, loyalty, commitment, and motivation. It will also be affected by a host of situational variables--the work environment, unit esprit, training,

and leadership. In this circumstance, it is never easy to say whether the force of today is better than that of days gone by, or--more important--how well today's force will perform tomorrow's jobs.

Two indicators of enlisted recruit quality, educational attainment and aptitude test scores, are often referred to in discussions of this subject. Possession of a high school diploma appears to be a sound indicator of capacity to adjust to the discipline of a military environment. At present, a high school graduate has almost an 80 percent probability of completing the first three years of military service, compared with a less than 60 percent probability for the non-graduate. The greater staying power of high school graduates, however, does not mean that a high school diploma is necessarily a predictor of on-the-job performance in the military.

One measure of an applicant's potential for learning the skills of military occupations is the DoD enlistment qualifications test, known as the Armed Services Vocational Aptitude Battery (ASVAB). Pencil and paper tests have been used by DoD since the end of World War II to reject potential conscripts or volunteers who have a very low probability for success in service. The tests are also used to determine whether recruits are eligible for specific job training. Aptitude tests are by no means perfect predictors of job performance. But, when properly used, they do enhance the probability that the Services will select the best suited people from the pool of applicants and will assign them to jobs in which they are likely to succeed.

Taken together, test scores and high school diplomas provide data that tempt many people to make judgments (often contradictory judgments) about the quality of our forces. I will content myself here with only three points about these indicators. First, these indicators suggest no clear pattern; they show recruit populations that are markedly better now than in World War II and in many post-World War II years, somewhat better than in some other years, and somewhat less good than in still others.

Second, these measures are at best indicators of recruits' aptitudes, not soldiers' aptitudes. The force in the field differs from the force that is recruited in several respects. In particular, those recruits who are least fit for military service wash out in training, while those who are most fit profit from training. Moreover, the force in the field is a composite of all the recruits of the past quarter-century with the most staying power--that is, those who have become careerists. We know that when experienced soldiers take the same types of aptitude tests they took as recruits, they score higher--because of their experience--than they did on entry. We also know that although non-high school graduates are more likely to leave the military during their first term of enlistment than their high school graduate equivalents, those nongraduates who remain achieve the same general indicators of acceptability (reenlistment eligibility, entry rate into career force) as graduates. Indeed, over 90 percent of those non-graduates who become career soldiers go on to receive high school degrees.

Finally, these indicators, though temptingly quantifiable, do not in fact tell us what we care about most: performance in the field. Recently, for example, we found that an error in test calibrations caused us to admit a number of soldiers who received higher scores than they actually deserved. We are continuing

to analyze the "natural experiment" that has resulted from this situation, but preliminary observations suggest that this group has performed so well as to make us think that they should have been accepted anyway.

Given this backdrop, I believe we should take recruit testing and educational data for what it is: a useful indicator of year-to-year fluctuations in one variable of concern to us--recruit aptitude. FY 1980 saw some declines as measured by this indicator, particularly in the Army. More high school graduates were recruited than in 1979, but the total number of Army recruits also rose so sharply that the proportion of graduates dropped from 64 to 54 percent. And the fraction of entering recruits in the next-to-lowest aptitude category rose in the Army to almost one-half. I do not consider these recruiting results acceptable, and we have taken steps to secure improvement in FY 1981. In the coming year, we expect to meet both the Congressional target of 65 percent high school graduate recruits in the Army and the Congressional mandate that no more than 25 percent of our recruits are to come from the next-to-lowest aptitude category.

2. Retention

The retention of experienced enlisted personnel is a recurring readiness problem. The Navy, for example, lacked 20,000 petty officers in 1976, and is short 20,000 petty officers today. Moreover, the pool of more senior petty officers has decreased significantly since 1976, thus eliminating the hedge of experience that we possessed four years ago. To take an extreme example, the reenlistment rate for highly skilled, nuclear-trained petty officers with 10 to 14 years of service, which was 84 percent in 1975, has dropped to 26 percent in 1979 and is projected at 14 percent through the third quarter of 1980.

The significance of this and other (though less severe) shortfalls in the Services lies in the unique contribution made by senior enlisted members to the operation and maintenance of an increasingly complex force. They represent not only experience, but the training and leadership so essential to develop the newer, younger members into an effective fighting force. The loss of an experienced person cannot be compensated for by the introduction of a new enlistee. Great cost and considerable time must be invested in the recruit before he or she can become as productive as the seasoned member, while the investment of time and money already made in the experienced person is lost to the services as he or she leaves. Thus, even though reenlistment rates at the end of the first term are rising to unprecedented levels (a real bonus of the AVF), I cannot simply accept these gains as a substitute for the greater than normal loss of personnel at the second and third reenlistment points.

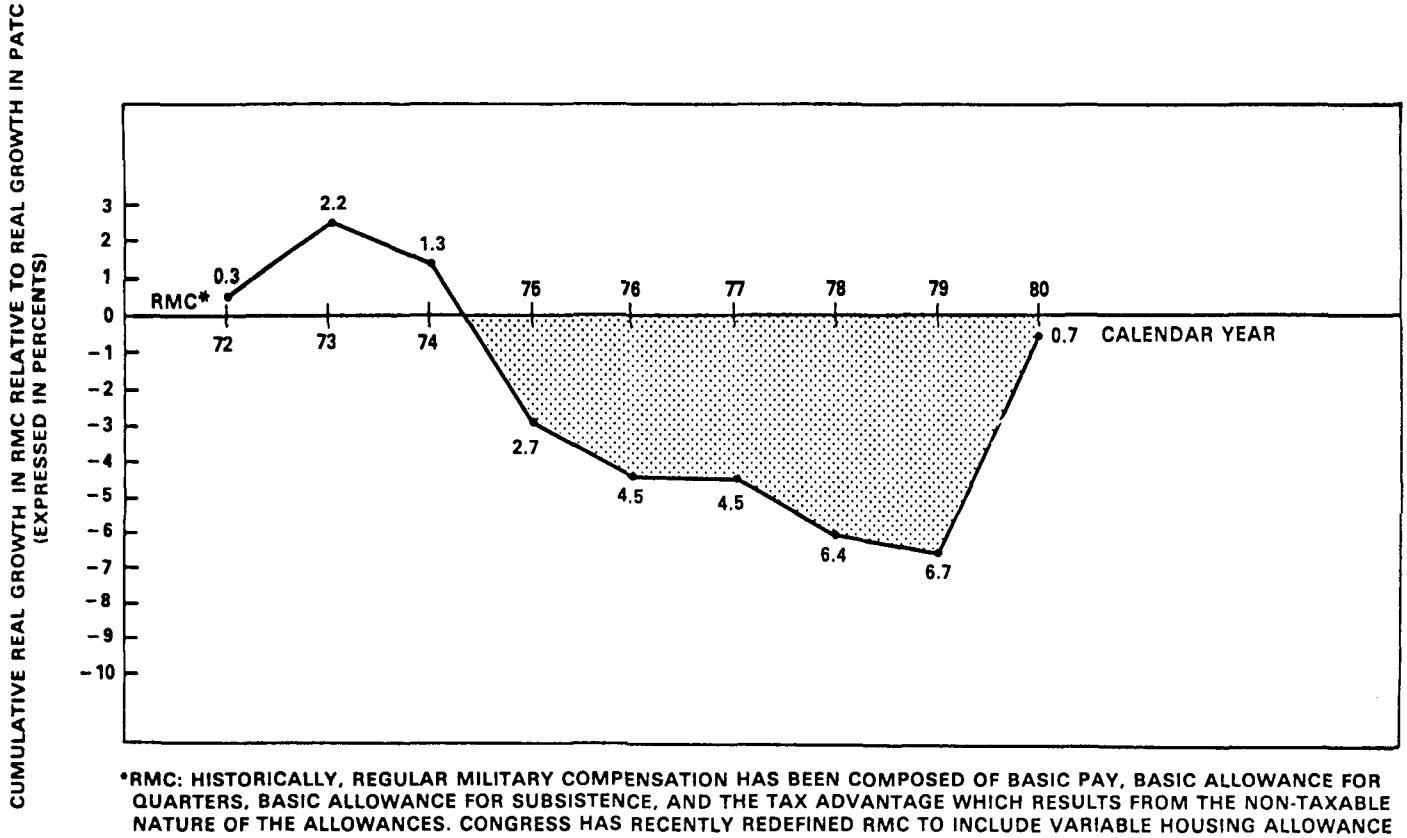
I am particularly concerned about the retention of mid-career personnel with critical skills in certain specialty areas such as the nuclear and aviation fields. Personnel deficits are not limited to the enlisted ranks; there continue to be major shortages, for instance, in the officer corps of naval aviators and submariners, and Air Force pilot retention has been cut in half over the past five years. In losing these officers, we are deprived of a wealth of experience in some of our most sophisticated weapon systems--experience that will take hundreds of millions of dollars and years of training to replace.

Some of our retention problem is due to a history, over much of the 1970s, of declining real (after inflation) pay for our men and women in uniform.

As Chart 7-1 illustrates, since 1974, military pay has fallen farther and farther behind civilian pay in terms of real purchasing power. Today's officers and NCOs are thus making career decisions in the light of a continuous experience of losing real purchasing power compared to their civilian counterparts. The compensation and benefits packages enacted by the Congress and signed by President Carter last year will help considerably in reversing this trend; indeed, because of these increases, the gap between military pay and pay in the civil sector has narrowed significantly for the first time since 1974. This long overdue correction should have a tangible effect both on recruitment of high quality men and women and on retention of experienced personnel in critical skills. We cannot, however, permit such a discrepancy in civilian/military pay comparability to begin growing again.

CHART 7-1

CUMULATIVE RMC PURCHASING POWER RELATIVE TO THE PATC



*RMC: HISTORICALLY, REGULAR MILITARY COMPENSATION HAS BEEN COMPOSED OF BASIC PAY, BASIC ALLOWANCE FOR QUARTERS, BASIC ALLOWANCE FOR SUBSISTENCE, AND THE TAX ADVANTAGE WHICH RESULTS FROM THE NON-TAXABLE NATURE OF THE ALLOWANCES. CONGRESS HAS RECENTLY REDEFINED RMC TO INCLUDE VARIABLE HOUSING ALLOWANCE (VHA) AND OVERSEAS STATION HOUSING ALLOWANCE. VHA IS INCLUDED IN THIS CHART, BUT OVERSEAS STATION HOUSING ALLOWANCE IS NOT.

It is clear, however, that money is but one factor in reenlistment decisions. The difficulties experienced by the Navy in retaining highly skilled personnel are illustrative of the problems we face in this area. Skilled petty

officers, because they are already in short supply, must put in longer days on the job, spending more time performing their respective skills and leaving them less time to train their subordinates. Moreover, the demand for their talents in the fleet requires them to spend more time at sea. Thus increasingly less time is available to spend with families. These pressures in turn exacerbate retention problems. In addition, other factors--unequal distribution of peacetime deployments between Atlantic and Pacific fleet ships, continued high rates of disciplinary problems and of desertion, the demanding physical environment of ships and aircraft at sea or in shipyards, and extremely long working hours (especially in homeport) all make it difficult to achieve our goal of improved career retention and overall force manning. To combat these adverse factors, more resources have been programmed to enhance career reenlistment incentives and to improve working conditions.

3. Quality of Service Life

The nation expects Armed Forces that will train vigorously, endure hardship, deploy where needed, and fight when necessary. In turn, the men and women in our Armed Forces expect--and have a right to expect--that the quality of their life in the military will be commensurate with that in the mainstream of the society they protect. Our service quality of life (QOL) policy is based upon this reciprocal commitment between the nation and the Armed Forces.

Quality of life is a broad concept, one that encompasses the degree to which an individual service member's or family's human needs are satisfied. High quality of life standards foster commitment to service and personal willingness to fulfill military requirements. Our QOL programs, therefore, continue to focus on improving both the duty and the living environments of service members. Particular emphasis has been placed on maintaining adequate work, health care, housing, and community facilities--all of which contribute to the morale and welfare of our service members. We also recognize the important contribution that the families of military members make to the national defense mission. Consequently, we have a number of initiatives to strengthen military family support programs and to improve the quality of military family life. Meeting their needs--such as child care, educational programs, family housing, equitable reimbursement of relocation expenses, medical and dental care, spouse employment opportunities, recreation, and the fundamentals of a reasonable standard of living--is necessary if the Services are to continue to attract and retain dedicated, high quality personnel.

The President's Fair Benefits package and a number of internal Administration initiatives have contributed to these ends. One action that has had a damaging effect, however, is the Congressionally imposed ceiling on the number of dependents overseas. This ceiling will force us to tell service members deployed abroad either that they cannot take their families with them, or that they will not be able to do so until other dependents return and free up ceiling spaces. Such a situation is excruciatingly painful, as families are divided, school years begin, housing and furniture arrangements become complicated, and so forth. This provision, in my view, does our national security no good and much harm. I urge its repeal.

4. Training

Realistic and challenging training during peacetime is essential to combat readiness. We are investing heavily in improved and increased training, here and overseas.

For example, we are adding an additional week to Army basic training. Next year, the new National Training Center at Fort Irwin, California, will be in operation providing highly realistic, live-fire exercises, as well as combat simulation with an "opposition force" equipped and trained to operate like a Soviet motorized rifle regiment. These exercises will involve laser-based combat simulation, using the most modern equipment and employing combined arms tactics with tanks, anti-tank missiles, mechanized infantry, artillery, air defense, electronic warfare, attack helicopters, and close support aircraft.

In Europe, our Army units train regularly, side by side with their NATO counterparts, and they train on the very ground they are assigned to defend. There is no substitute for day-in, day-out familiarity with every feature and every square foot of the battlefield, the kind of familiarity that an aggressor cannot have. We have increased the number of joint exercises and have improved Emergency Deployment Readiness. Exercises are vital components of the total Army training program, permitting Active and Reserve Component units to maintain a high state of readiness.

The Navy has instituted a new training initiative to improve the tactical readiness of the fleet's battle groups. Tactical Training Groups, composed of officers highly experienced in command and staff duty afloat, have been formed to teach battle group tactics to virtually every officer who is assigned to a command or senior staff position at sea. In addition, these Groups assist battle group commanders with their planning for major fleet exercises and contingency operations. The Marine Corps Air-Ground Combat Center, located at 29 Palms, California, is a unique combined arms training facility where units up to MAB size train in simulated combat conditions. It provides a unique desert training environment and is the home of the 7th MAB, designated for the RDF reservoir of forces. All Marine Infantry Battalions are scheduled to train at 29 Palms on a periodic basis.

For our air forces, we have increased and improved our "Red Flag" exercises--simulated air combat--for tactical aircraft pilots, pitted against teams specially trained in Soviet air tactics.

I view it as essential for the readiness of our forces that this greater emphasis on training should continue.

B. Personnel Management

Moving to the All Volunteer Force has fostered dramatic innovations in the way we direct personnel. Inefficiencies cannot be papered over by simply conscripting more low-cost people. We must treat people as valuable resources. I believe we have made progress in managing both our military and civilian work force, and I look forward to continued improvement.

Part of our progress has involved opening service career opportunities to women on an equal basis with men. Women are today eligible for fully 95 percent of all DoD occupations, and they are making good use of these training and assignment opportunities. In 1972, fewer than two percent of those in uniform were women; in 1976, 5.3 percent were women; today, that figure has increased to 8.1 percent, and we expect it to exceed 12 percent by FY 1986. It was a particular pleasure for me to attend the graduation ceremony at the United States Military Academy this past year, and to present a diploma to the first woman graduate in the history of West Point.

On other fronts, I am pleased with the enactment of the Defense Officer Personnel Management Act after a decade of drafting and redrafting. In the near future, I would like to see progress on three other legislative initiatives that would, I believe, make our manpower personnel system more cost-conscious and cost-effective. The first would put us on an accrual accounting system so that military retirement costs would be budgeted as they occur. At present, retirement costs are hidden and deferred, because the defense budget pays them only after individuals retire. This is putting off until tomorrow what ought to be reckoned with today. We ought also to consider funding such payments outside the Defense budget proper, just as government contributions to retirement payments for civilian employees (including DoD employees) are funded outside departmental budgets.

Second, I believe that the entire retirement system could be greatly improved. My proposals in this respect are presented in the Uniformed Services Retirement Benefits Act awaiting Congressional action. The new system it recommends holds promise of being at one and the same time more attractive as a military manpower management tool, more equitable to individual Service members, and less expensive to the taxpayer.

Third, I urge enactment of the Administration's Federal Employees Compensation Reform Act, a key feature of which is a proposal to separate military and federal civilian pay. As the experience of recent years suggests, the recruitment and retention problems of these two groups of personnel are very different.

Just as the volunteer force has encouraged more sensible policies in the personnel systems affecting military men and women, so has it also forced greater attention to our use of civilians. No longer can cheap, inexperienced conscript manpower be used--even inefficiently--for all tasks. Civilians are capable of achieving unique efficiencies in many respects: we need not spend a great deal to give them military training irrelevant to their particular assignments; they free military personnel to fulfill more combat-related tasks; they can be assigned to one locale for much longer periods than their military counterparts; they develop more specialization and job-specific experience; and it is easier to pay them differentially according to their skills. The policy of all recent Administrations, including this one, has been to keep Federal civilian employment from growing. At the same time, we would like to have some civilians take over support jobs from military people so that the military can be assigned to combat units. This requires a relentless pursuit of efficiencies in Defense operations. It may also require future recognition that Federal civilian employees who repair tanks belong in a different category from Federal civilian employees who write regulations.

We continue to strive for increased efficiencies in the employment of civilian personnel. The key to ensuring efficient operation in our program is to subject all DoD-related commercial and industrial activities to the rigors of competition. In-house government activities compete with private sector contractors to perform a given activity, and the lowest bidder who can perform the work is awarded the contract. On the other hand, we need to maintain organic depot maintenance capability and capacity in order to ensure sufficient initial wartime surge capability. We will continue to seek the proper balance between government- and contractor-performed operations.

We have also made progress during this past year in implementing the Civil Service Reform Act. I am confident that this progress will continue in future years and that this legislation will have beneficial long-term effects on the management of our civilian employees. I urge the Congress to give every consideration to the Federal Employees Compensation Reform Act as a vehicle for further strengthening the efficiency of our civilian personnel management system. The cost-savings from this measure should be over a billion dollars a year for the Department of Defense alone.

C. Reserves

We have, through the last half of the 1970s, come to rely more than ever on our reserves. This makes the improvement of reserve readiness, capability, and morale particularly important. I am pleased to report a number of gains in this respect. Selected reserve strength went up for the first time in FY 1979 and FY 1980 after a post-Vietnam period of decline. Army Individual Ready Reserve strength similarly grew after a decline during the earlier AVF years, although it remains short of wartime requirements. Increased full-time manpower allocations (a crucial step in improving Army reserve capability) have been made to all early-deploying units, and many more units have been made early-deploying.

Over the next years, I would like to see primary emphasis given to relieving attrition, particularly in the Army's reserve components. Just as excessive losses of first-term personnel have been diminished by effective management in the active duty force, so, too, can they be reduced in the reserve force. Steps to achieve such gains are now in process. As might be expected, they involve a wide range of reserve-related matters, including compensation, promotion opportunity, training, and quality of life for a reservist and his or her family.

III. MATERIEL

A. Objectives and Priorities

Our logistics policies are animated by three major objectives: peacetime materiel readiness and wartime combat materiel sustainability of our combat forces must be sufficient to implement our strategic objectives and plans; our military personnel and their dependents must be adequately fed, clothed, and housed, and have their medical needs cared for; and we must have the necessary management and control systems to accomplish these objectives without waste.

For the first decades after World War II, the focus of peacetime defense planning was on maintaining adequate force levels and on acquiring new, more

sophisticated weapon systems. The implicit assumption behind this policy was that if war should come, funds to increase the readiness of existing forces would be provided quickly. Over recent years, however, the mobility and destructiveness of modern combat forces have vastly increased the rate at which conflict can erupt and spread. This factor, coupled with the lengthening leadtimes for correcting readiness deficiencies in the technologically sophisticated weapon systems of today, demands that our combat forces be ready now to respond to any contingency that might arise.

Thus, a major change in our current policy as compared with a few years ago calls for giving readiness a higher priority in the allocation of scarce peacetime resources. My most recent Consolidated Guidance to the Military Departments emphasized the correction of existing readiness deficiencies and the overall enhancement of our readiness posture. The priorities for our logistics planning and programming are: first, peacetime materiel readiness; followed by wartime sustainability; and, then, peacetime efficiency. Within those priorities, the first concern for incremental resources is support of the Rapid Deployment Forces (RDF), followed closely by support for early-deploying NATO forces.

B. Materiel Readiness

"Materiel readiness" refers to the amount of equipment and supplies on hand (relative to the amount prescribed to perform the wartime mission) and the ability of this materiel, during peacetime and the initial operations of a crisis or conflict situation, to perform the functions for which it was designed, procured, or modified. Materiel readiness obviously depends directly upon the adequacy of the logistics functions of maintenance, modification, supply, and transportation. More specifically, materiel readiness is largely determined by the inherent reliability and maintainability of a weapon system, the availability of spare components and repair parts in the right places at the right times, adequate maintenance manning, functioning test equipment, appropriate technical documentation, and adequate depot maintenance funding for component repair, weapon system modifications, and (in some cases) overhauls.

One of our primary objectives in enhancing materiel readiness is to reduce the current backlog in the depot repair of weapon systems and components. As the sophistication of our weapon systems has increased over the past decade, repairing failed components has become more costly and time-consuming. Budget increments are required for highly trained technicians, complicated support equipment, and expensive spare parts. Inadequate funding in past years has led to debilitating backlogs. To counter this, we have significantly increased peacetime spares funding for both procurement and repair to more than $7.7 billion, in order to minimize withdrawals of War Readiness Spares Kits and war reserve materiels in support of these peacetime activities. This effort has already reduced the backlog of ships awaiting overhaul from 68 in 1976 to fewer than 20 today. We project that the Navy's and Air Force's aircraft repair backlogs will be virtually eliminated within the next two years.

C. Materiel Sustainability

"Materiel sustainability" refers to our ability to keep our combat forces supplied with spare parts, munitions, equipment, and combat-essential consumables in wartime.

At present, we do not procure in advance additional ships and aircraft to replace combat losses, because the procurement cost of the weapon systems in these capital-intensive forces is extremely high. We believe that to the extent we buy planes and ships, we should make the relatively small additional expenditures to bring them into active peacetime operation rather than store them for potential wartime reserves. With the relatively more labor-intensive land forces, however, the procurement cost of combat equipment such as tanks, armored personnel carriers, and artillery pieces represents a much smaller fraction of the total life cycle cost of such weapon systems. For this equipment, it is sensible to procure war reserve stocks in order to be able to take full advantage of our combat manpower in a protracted conflict.

We continue, of course, to buy reserve stocks of munitions, weapon system spare and repair parts, and other combat-essential consumables for all our forces. Although substantial shortages currently exist in all these areas, we will increase the defense-wide level of spare parts procurement in FY 1982 by 41 percent over what it was in FY 1981, with additional substantial increases scheduled for the following year.

IV. MOBILITY

Second only to the capability of our forward-deployed forces, rapid response is often the key to deterrence or successful forward defense. With allies, friends, and interests throughout the world, we cannot hope to maintain adequate forces at each location of potential need. Instead, we must maintain a reservoir of ready forces in the CONUS and mobility forces for their rapid deployment abroad to augment our forward-deployed forces. Although the variety of circumstances in which we might deploy forces is almost endless, we have chosen to size and structure our mobility forces for a contingency that would pose perhaps the most severe test for our conventional forces--concurrent Soviet threats to the Persian Gulf region and to NATO.

Our specific reinforcement objectives in each area are determined by the speed with which we estimate the Soviets could deploy their forces and by the ability of U.S., allied, and friendly forces already in place to provide an initial defense.

In Europe, we expect the majority of Warsaw Pact ground and air forces to be deployed witin two weeks; conflict might begin even sooner than that. Without U.S. reinforcement, NATO forces would face a serious disadvantage in the air, and the unfavorable ratio of ground forces would be compounded by the lack of forces in reserve capable of preventing a Pact breakthrough or of responding to penetrations. Consequently, our objective is to deploy most U.S. air forces and a minimum of six reinforcing divisions within 10 days of a NATO decision to mobilize, and ultimately to be able to deploy an additional reserve corps within the next few days. Our principal long-term mobility objective regarding Southwest Asia is to improve strategic mobility and provide prepositioning so that we can deploy a rapid deployment force of adequate numbers of ground troops, tactical air, and support at a steady rate over the course of a month.

At present, we are some way from our NATO objective and a long way from our Southwest Asia objective. Our FY 1982-1986 programs are designed to move us further towards these goals.

Where our interests are sufficiently important and the political situation permits, such as in Europe or Korea, we reduce our deployment requirements by prepositioning ammunition, supplies, and equipment in the potential combat theater. Today, we have enough Prepositioned Overseas Materiel Configured to Unit Sets (POMCUS) stored in Europe to support four divisions there, and by the middle of the decade we expect to have enough POMCUS and complementary airlift to enable us to move six divisions to Europe within ten days of a decision to mobilize. In addition, we have recently enhanced our ability to move forces to the Persian Gulf/Indian Ocean region by prepositioning fuel, water, and equipment on seven supply ships in those waters. Prepositioning not only reduces the demand for airlift or dedicated fast sealift, but also adds to deterrence by signaling U.S. interest and involvement. Nevertheless, prepositioning is not an option in all cases; it must be complemented by airlift and sealift for items that do not store well, and it is not always the least expensive way to deploy forces, particularly where there is no pre-established military defense line.

We have the greatest ability of any nation on earth to deploy reinforcing forces throughout the world. However, our objectives are extraordinarily ambitious. In my judgment, meeting them requires a sizable increase in our mobility capabilities. I have accordingly initiated programs that will substantially improve our capabilities by the mid-1980s. My primary aim is to secure enough mobility capacity to reduce our vulnerability to simultaneous threats in both Europe and a non-European theater.

Our total sealift and airlift enhancement program includes procurement of new fast container ships, an increase in the capacity of our C-141 aircraft, and development of a new long-range, versatile cargo aircraft, the CX. Moreover, in developing the airlift and sealift forces necessary to meet our objectives, we rely heavily on reserve forces, on the civil sector, and on our allies. In the event of mobilization, U.S. assets for airlift would include the Military Airlift Command (MAC) Fleet and the Civil Reserve Air Fleet (CRAF). Sealift assets would include naval amphibious forces, merchant ships, and other vessels under effective U.S. control. Reserve forces provide about half of our military airlift capability and most of the support for our ports and airfields. The civil airlines furnish almost all of our passenger carrying capability and about a third of our cargo airlift capacity, while the U.S. merchant fleet provides the majority of our sealift.

Our NATO allies' contribution to NATO's sealift capacity exceeds our own; they are in the process of committing their civil cargo aircraft to the collective effort, and they have promised to commit passenger aircraft as soon as specific requirements are defined. We are negotiating similar agreements with the Koreans for use of their ships and aircraft for defense in Northeast Asia, and it is our general policy to seek such arrangements with all allies. Finally, we are negotiating emergency access rights to key ports and airfield facilities in various parts of the world, and we assume--and have a right to expect--that, in our major programming contingency, not only our allies but other free world nations would assist our efforts with airbase, port, and overflight rights.

V. MOBILIZATION

Mobilization is the process by which the nation makes the transition from peace to war. Over the past year, we have made significant improvements in our capability to mobilize during a national emergency: we have continued to correct deficiencies in our mobilization planning, have improved our ability to mobilize the Reserve forces, and have enhanced our capability to accept and train new personnel in an emergency. Although I am encouraged by our progress to date, much remains to be accomplished, and the results of a series of recent mobilization exercises will guide us in this continuing effort.

A. Mobilization Planning

Mobilization of the nation's resources is an enormous undertaking involving thousands of concurrent activities within the Defense Department, other federal agencies, and the private sector. While the magnitude and diversity of these efforts demand that the mobilization activities themselves be decentralized as much as possible, the execution of these operations must be based on sound peacetime plans that provide the blueprint for all mobilization activities. This requires a single national mobilization design, encompassing an overall DoD mobilization plan, supporting plans for all DoD organizations, and coordination of the DoD plans with those of other Federal agencies.

Until the 1978 exercise NIFTY NUGGET, we lacked a comprehensive plan for coordinating and integrating the activities of all DoD organizations in the event of a rapid mobilization. To meet this need, we developed a DoD master plan that provides the framework for making decisions and managing the entire mobilization process, assigns responsibilities and related tasks, anticipates many of the key decisions that might need to be made during mobilization, identifies various options for enhancing readiness or deterring further escalation of the crisis, and furnishes the coordinating structure for planning and executing mobilization.

A preliminary version of the master mobilization plan was tested during exercise PROUD SPIRIT, conducted last November. Our first look at the results of that exercise suggests that since 1978 there has been much improvement in mobilization capabilities on the military side, some improvement on the civilian side of DoD, but with the exception of the leadership shown by the Director of the Federal Emergency Management Agency (FEMA), little improvement in other government agencies. During the past year, however, we have begun to increase our coordination and joint planning with FEMA and other federal agencies. This important effort will continue during the coming year, with special emphasis placed on improving our understanding of the planning procedures necessary to ensure timely and efficient mobilization.

B. Reserve Mobilization

Our ability to mobilize in an orderly and flexible manner has been markedly improved by the passage of legislation that raises to 100,000 (from the previous ceiling of 50,000) the number of Selected Reservists whom the President may order to active duty for 90 days. This legislation will allow us to call a greater number of Selected Reservists (as we need them) in the early stages of a crisis, without requiring the President or Congress to declare a state of national emergency.

We are also devising policies that provide for a wide range of options in alerting, increasing the readiness of, and mobilizing our Reserve Components. They will permit reserve mobilization to be accomplished fully or in phases, or to be stopped or reversed at various decision points. These options will provide the National Command Authorities with the capability to take a number of steps that can improve our deterrence and deployability posture prior to the decisive step of placing Reserves on active duty. These steps concurrently help us to accomplish the early-on tasks that facilitate mobilization, should that become necessary.

Selected Reserve units continue to provide about one-half of the combat power and two-thirds of the logistical support in the total force. We are continuing to improve the readiness of these units for rapid deployment on short notice. Although our primary emphasis is on those units that deploy or are otherwise needed early in battle, all units should achieve a readiness status commensurate with their intended wartime use. Personnel in the Ready Reserve training pipeline will complete their training upon mobilization and, depending on their mobilization and deployment schedule, will then either rejoin their assigned units or become available as fillers and replacements. Our goal is to have, in peacetime, at least 90 percent of each unit's wartime strength trained and ready to go; for the Air Reserve Forces, that figure is set at 95 percent. A portion of each unit's trained strength will consist of full-time unit support personnel, and as I noted above, we are programming significant increases in full-time support personnel for the Army Guard and Reserve.

C. Manpower Mobilization

Our options for mobilizing defense manpower during an emergency depend upon the amount of warning time and the actual scenario. During a period of slowly rising international tensions, we would review a series of measured incremental options regarding the mobilization of manpower. If war were to begin with little warning, however, I think it is highly probable that we would want immediately to reinstitute the draft.

Thus, the Selective Service System plays an integral part in manpower mobilization. Last year, over 3.5 million 19- and 20-year-old men registered. Eighteen year-olds will register on a continuous basis in the coming months. As a result, the Selective Service System can, if necessary, begin delivery of potential inductees to the Armed Forces Examining and Entrance Stations within 13 days after a decision is made to mobilize, and can deliver 100,000 inductees within 30 days of such a decision.

If in any potential crisis there were insufficient personnel in the active forces and Selected Reserve units to meet the immediate demands for manpower, the residual requirement would have to be met by people who are already trained in military skills and are obligated to serve in time of national emergency or war. There are three categories of such personnel: Pretrained Individual Reservists (comprising members of the Individual Ready Reserve, Inactive National Guard, and Individual Mobilization Augmentees), Standby Reservists, and retired military personnel. Because Pretrained Individual Reservists constitute the primary source for mobilization manpower, our goal is to increase the number and improve the management of this group, so that fewer Standby Reservists and retired personnel would have to be recalled in time of emergency. As I have noted above, we have made substantial progress in this effort, and I expect more in the future.

We also are taking steps to ensure that we can begin training volunteers and inductees immediately upon mobilization. Our primary objective is to enhance the Army's mobilization training base capacity. The Army must be able both to augment its current training centers and to establish new ones quickly in order to accommodate the significant number of new trainees during the early stages of a mobilization. The Army has made significant planning improvements in this regard last year. Continuing progress will be made in the coming year.

D. Industrial Mobilization

As with manpower mobilization, the contribution of defense industrial production is greatly affected by how quickly we react to political and military warning signals and how well the government can execute national mobilization plans. In situations involving little or no warning, our industrial base could not immediately replenish consumable suppplies. But a strong industrial base is nonetheless essential as a deterrent to war, as a major factor in our ability to outlast any adversary in a conflict, and as a hedge against any potential mobilization race in which our adversary seeks to expand his military arsenal significantly over a period of months or years.

Defense industrial mobilization planning is designed with those objectives in mind. In the past year, we have given increased attention to enhancing the responsiveness of the defense industry, both in a peacetime surge and in a mobilization environment. We have a broad range of initiatives for improving the health of an industrial sector that currently is characterized by a scarcity of materials, aging plant and equipment, increasing leadtimes for components, and shortages of skilled manpower--all of which contribute to increasing costs and lagging capital investments.

Over the past year, we have become convinced that DoD industrial preparedness planning procedures are outdated. We must substantially restructure our planning system to make it more effective and responsive to surge or mobili zation demands. As a first step, we are fully integrating industrial mobilization planning with the current acquisition process for at least a limited number of pacing items or systems. We are also developing an in-depth data base on key subcontractors and vendors, which will provide a framework for subsequent mobilization and will establish the basis for reducing the manufacturing bottlenecks that restrict not only industrial mobilization but peacetime acquisition as well.

Through a combination of authorities under Title III of the Defense Production Act and the National Defense Stockpile Act, we have, with a minimum of government involvement or expense, expanded the supply of selected critical strategic materials. These efforts are being coupled with an increased emphasis on research and development of new materials, to substitute for those that may not be readily available in the quantities needed. In addition, under the DoD Manufacturing Technology Program, we have enhanced our industrial mobilization potential by employing advanced manufacturing techniques, processes, materials, and equipment in the production of defense weapons and materiel. Although the funds for this program were initially viewed as "seed money" invested in converting emerging manufacturing developments into production realities, the proven success of the program in reducing lead times and improving industrial mobilization responsiveness has resulted in its being given increased budget emphasis.

Other actions to improve our industrial mobilization capability need to be pursued vigorously. We strongly support bringing the raw materials stockpile into better balance. We will continue to press for more consistent use of the Defense Priorities System by U.S. industry to keep programs on schedule and to provide better mobilization capability. We will continue our initiatives to provide more stability to the defense marketplace by better communicating our future needs to basic industry, improving cash flow, and attempting to stimulate private investment in the capital equipment that will strengthen our industrial base. I am confident that the serious attention being given to these objectives will measurably strengthen our industrial mobilization potential.

E. Mobilization Exercises

Mobilization planning is a dynamic process that must be continually refined to adapt both to changing requirements and to our varying abilities to define and to meet those requirements. Periodic mobilization exercises are conducted at all levels to test existing plans and procedures, to assess planning accuracy and completeness, to develop confidence in our mobilization capacity, and to focus managerial and professional efforts on needed improvements. We also recognize the need to exercise DoD mobilization plans in conjunction with those of civil agencies, in order to ensure compatibility of civil and military mobilization plans.

VI. CONCLUSION

Our forces are ready to go to war--if need be--and are increasingly capable of sustained combat. While we have made considerable progress in correcting our deficiencies in manpower, materiel, mobility, and mobilization, we cannot ease off in our efforts. We must ensure that readiness and sustainability programs continue to strengthen our overall military capability.

SECTION II

CHAPTER 1

STRATEGIC FORCES

I. STRATEGIC OFFENSIVE FORCES

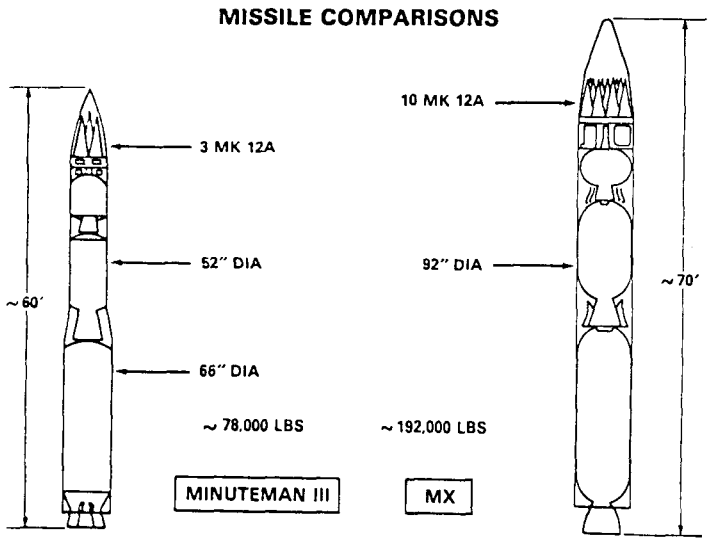
The total request for strategic offensive forces in FY 1982 is approximately $15 billion. These direct costs represent about 7.5 percent of the DoD budget. The five-year program is designed to preserve the strength of our strategic offensive forces throughout the 1980s and beyond. It involves modernization of all elements of the Triad in order to meet current and future challenges: (1) the MX program will increase the survivability and effectiveness of our land-based ICBMs; (2) the TRIDENT SSBN and missile programs will improve the flexibility and maintain the survivability of our sea-based forces; and (3) the ALCM and bomber modernization programs will maintain a high degree of effectiveness for the bomber force, while our bomber R&D programs will ensure continuing high capabilities in the future.

A. The ICBM Force

Increasing the survivability of the land-based ICBM force continues to be the highest priority strategic initiative in the five-year program. About half of the funding for strategic offensive force acquisition (RDT&E and procurement, including military construction) in the five-year program has been earmarked for MX.

The MX missile is compared with MINUTEMAN III in Chart 1-1. It is the largest new missile permitted by SALT II and is about the largest ICBM that can be mobile. In terms of military capability, it will be the equivalent of the much larger Soviet SS-18. The MX, with the combination of MK-12A yield and Advanced Inertial Reference Sphere (AIRS) guidance, will be capable of attacking the full spectrum of Soviet targets. Engineering development is proceeding at the planned rapid pace. System design review, a major milestone, was completed in September. The first of twenty scheduled flight tests will begin early in 1983.

CHART 1-1

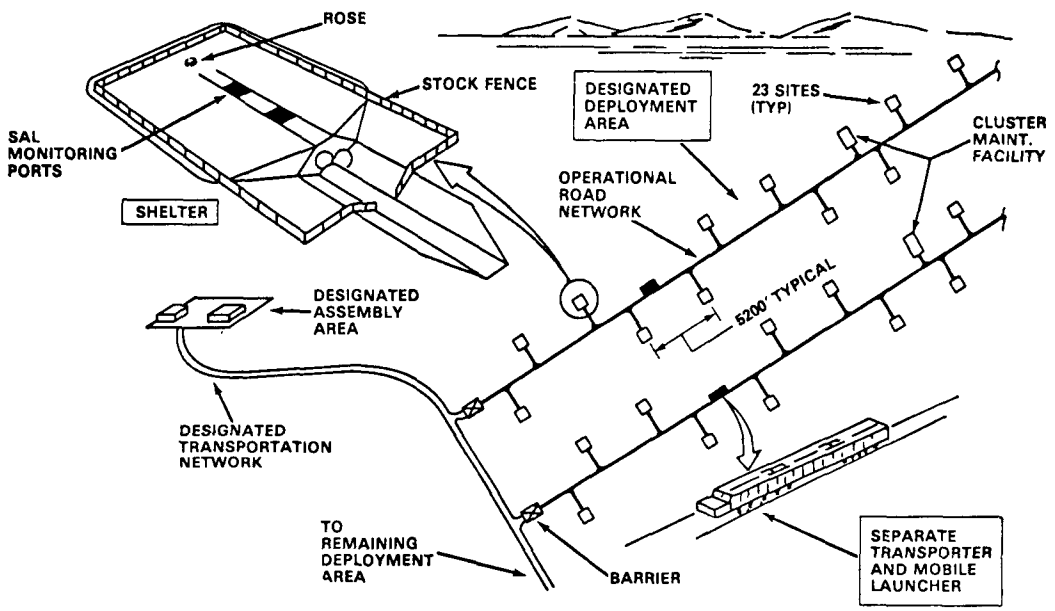


The details of the horizontal shelter MX basing scheme selected in 1979 have been refined technically during the past year. This will result in operational benefits, lower costs, and reduced environmental impact. The railroad from the assembly area to the deployment areas has been replaced with a much lower-cost roadway. We also have replaced the transporter-erector-launcher (TEL) with a smaller, detachable launcher mechanism that would be moved by a separate transporter. As a result, the shelter can be made smaller (by about 20 percent) and less costly, a 500,000 pound shield vehicle becomes unnecessary, the mass simulator--to create the impression that a missile and launcher are present when they are not--becomes simpler and less expensive, and we can lay out linear or loop roads depending on topography (the earlier integral TEL required loop roads to make full use of its shelter-to-shelter dash capability).

The current basing approach is illustrated in Chart 1-2. The launcher, with its canisterized missile, is moved occasionally among the 23 shelters in a cluster. The shelter layout pattern has been selected to provide the desired missile survivability and also to allow room for at least a 50 percent increase in the number of shelters without expanding the area requirements for the system.

Chart 1-2

HORIZONTAL SHELTER – SEPARATE TRANSPORTER & MOBILE LAUNCHER



Survivability of the system is based primarily on preservation of location uncertainty (PLU), which is maintained by periodic movement of the missile, on the launcher, from shelter to shelter and by masking or simulating the movement process. In the unlikely event that PLU is compromised, some or all of the transporters could go into constant motion and, on receipt of warning of an imminent

attack, could dash to random shelters and unload their missile launchers before incoming missiles arrive. This capability to change location rapidly (possible only in a horizontal basing mode) is, I believe, important for long-term confidence in survivability.

Our planning calls for full operational capability (FOC) of a survivable MX system of 200 missiles in 4,600 shelters by the end of 1989. An initial operational capability (IOC) for 10 missiles is scheduled for July 1986. If the Soviet threat to MX grows beyond our best current projections, we are prepared to ensure the continued survivability of the MX system. Our responses could include a combination of additional missiles and shelters, as well as consideration of a low-altitude ballistic missile defense system, if a breakdown in strategic arms limitation is signaled by Soviet deployment of two or three times the number of ICBM warheads allowed by SALT II.

MINUTEMAN silo survivability is expected to be as low as 10 percent for several years before the planned MX deployment in a survivable basing mode will begin to increase ICBM survivability. We have carefully examined a number of interim solutions to increase ICBM survivability more quickly. Options considered include basing a number of MINUTEMAN III missiles on TELs at existing MINUTEMAN bases, and basing some MINUTEMAN IIIs in an MPS vertical shelter scheme in the vicinity of existing bases. Missiles on TELs could be dispersed for survivability in time of crisis, but would be more vulnerable than silo-based missiles to surprise attack. The MINUTEMAN MPS scheme would be very costly and would not be available much earlier than MX. None of these alternative basing schemes provides the desired degree of survivability, and funding requirements would compete for MX funds. We have, therefore, discarded these alternatives. MX deployment in existing MINUTEMAN silos, at substantial early dollar costs, could speed up IOC by as much as a year; this would not, however, solve the MINUTEMAN silo vulnerability problem. Adding MPS vertical shelters would not provide an earlier solution to the vulnerability problem than would the present MX basing arrangement (the environmental impact process would probably delay IOC beyond the currently programmed date), and loss of position location uncertainty in such a system would be fatal to survivability. Such considerations have led to the choice of the present deployment as optimum.

We will have to rely more heavily on the other two legs of our strategic Triad during the years when MINUTEMAN will be more vulnerable, while we focus our ICBM survivability effort on MX. We will, however, continue planned MINUTEMAN improvements, such as the MK-12A reentry vehicle for 300 missiles, and ALCS Phase III (discussed in Section III of this chapter), to enhance the effectiveness and post-attack capability of the existing force.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
MX				
Development:				
$ Millions	670.0	1491.0	2408.7	2278.8
Procurement:				
$ Millions	--	--	--	1776.2

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
MINUTEMAN Improvements (MK-12A, ALCS Phase III, C^3 Integration)				
Development: $ Millions	35.3	53.3	33.6	42.1
Procurement: $ Millions	109.2	142.7	107.1	--

B. The SLBM Force

The program for the SLBM force is intended to provide a cost-effective transition from a submarine force designed in the 1950s to a force that will continue to provide high-confidence, sea-based deterrence well into the twenty-first century.

The 36 POLARIS/POSEIDON SSBNs in the strategic force at the beginning of FY 1981 were constructed between the late 1950s and the mid-1960s. The five oldest SSBNs, armed with 16 POLARIS multiple reentry vehicle (MRV) missiles per submarine, are currently planned to be retired from the strategic force by the end of FY 1981, although we are protecting the option of retaining three of these beyond that time. In the 1970s, the 31 newest SSBNs were converted to carry 16 POSEIDON missiles with multiple independently-targetable reentry vehicles (MIRVs). Twelve of these POSEIDON submarines are now programmed for further modification to carry the TRIDENT I (C-4) missile. This missile significantly enhances our strategic force effectiveness by improving yield, accuracy, and range--relative to the POSEIDON missile. The greater range allows these 12 TRIDENT-backfitted submarines to operate in much larger patrol areas, thus hedging against the possibility of major Soviet ASW improvements. The first submarine with the TRIDENT I missile was deployed in October 1979 and four more deployed in 1980; program completion is planned for FY 1982.

The ultimate size and missile configuration of the SLBM leg of the Triad has yet to be determined. These decisions will be based on many and changing variables, including: (a) the role of SLBMs in a countervailing strategy; (b) assessments of the size and capability of Soviet strategic and ASW forces; (c) the attractiveness of alternative strategic programs compared with TRIDENT; and (d) progress in strategic arms limitations negotiations.

Nine TRIDENT submarines have been authorized through FY 1981, and long-lead funding has been authorized for two others. Delivery of the lead submarine, USS OHIO, has slipped, and a firm schedule for sea trials and an IOC are not available at this time. The TRIDENT has more (24 instead of 16) and larger missile tubes than the POSEIDON submarine; it is quieter, making acoustic detection more difficult; and it will have an increased at-sea, on-patrol time. A basic procurement rate of one SSBN per year is programmed through 1984.

The TRIDENT II missile program will provide a follow-on missile for the entire TRIDENT submarine force. The final version of the TRIDENT II missile has not been decided upon. Candidates include improvements to the C-4 missile and a new, larger D-5 missile that uses the maximum SLBM length and diameter permitted by the TRIDENT submarine launch tube.

Although today's sea-based forces provide a highly survivable and enduring capability against most military and industrial targets, they are ineffective against hardened military targets such as command bunkers and missile silos. The TRIDENT II missile is intended to provide SLBM capability against the full spectrum of targets.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
TRIDENT Submarine				
Procurement: $ Millions	1382.5	1134.6	1459.2	1626.7
TRIDENT I Missile				
Procurement: $ Millions	765.5	837.9	933.6	932.1
TRIDENT II				
Research and Development: $ Millions	25.6	97.6	242.9	354.0

C. The Bomber Force

The program for the bomber force is designed to maintain the effectiveness of the current force in the face of a growing Soviet threat and to lay the foundation for a modern bomber force in the future.

The main elements in the near-term program are deployment of air-launched cruise missiles (ALCM) and introduction of improved avionics in the B-52 force. These plans will increase by two-thirds the number of weapons in the bomber force by 1986, will keep the force abreast of improvements in Soviet air defenses, and will ameliorate problems associated with the aging of the B-52s. With these and related improvements, the B-52 force can remain effective into the 1990s. To maintain the effectiveness of the bomber force beyond that time, our program includes research and development on a new multi-role bomber.

1. Cruise Missile Program

Introduction of the ALCM is the major near-term modernization program for strategic bomber forces. The ALCM is a small, unmanned, highly accurate, winged vehicle capable of penetrating Soviet air defenses. Competitive flyoffs this past year resulted in selection of the Boeing AGM-86B as the ALCM.

ALCM procurement has been reduced slightly this year to coincide with the B-52 modification schedule. The change will not affect the planned IOC or the rate of deployment of ALCMs on B-52Gs. In December 1982, the first B-52G squadron will carry cruise missiles externally. Full operational capability (FOC) is planned for FY 1990, when all B-52Gs will be equipped to carry 20 ALCMs each, 12 external and eight internal.

2. Bomber Modification and Rebasing

Several modification programs for current aircraft are planned or in progress in order to improve their reliability and maintainability, to counter improving Soviet air defenses, and to expand B-52 weapons capabilities.

Modification of all B-52G/H aircraft with a new Offensive Avionics System (OAS) commences in FY 1981 and is scheduled for completion by FY 1987. The OAS program will improve reliability and maintainability, and will significantly improve B-52G/H weapons accuracy. The program is necessary in order for the B-52G to deliver ALCMs, and it would also enable the B-52H to carry ALCMs if we choose to convert them in the future.

Modification of the B-52D with a Digital Bombing-Navigation System (DBNS) is scheduled for completion in FY 1983. The DBNS will improve reliability and maintainability, and it will greatly increase B-52D bombing accuracy.

We plan to rebase and redistribute the B-52 force. This action will entail no base closings. It will protect high-priority B-52G ALCM-carriers through interior basing, will allow more efficient use of tanker resources, and will position the B-52D for quick response to conventional contingencies.

3. Multi-Role Bomber (MRB) Program

Programs concerned with development of a new bomber have been redirected and restructured under the new MRB program. In the long term, the bomber force will have the roles of delivering nuclear weapons with penetrating aircraft (using short-range missiles and bombs) and of launching ALCMs from standoff. Bombers also may assume a greater role in conventional conflict by penetrating air defenses, launching various standoff munitions, or both. We are energetically exploring a wide variety of new bomber candidates to contribute to those capabilities. Near-term alternatives include the FB-111B/C and a number of aircraft embodying B-1 technology. Longer-term alternatives entail applications of advanced technologies in multi-role bomber design. My judgment is that the high confidence of penetration of prospective Soviet air defenses in the 1990s will require employment of advanced technologies in any U.S. penetrating bomber.

4. Bomber R&D

In addition to the MRB program, we are proceeding with a number of R&D programs to enhance the effectiveness of current and new manned bombers. Notable among these efforts are first-generation ALCM improvements, advanced-technology ALCMs, electronic countermeasure (ECM) improvements, and a program to diminish the effectiveness of Soviet air defenses by countering the Soviet Union's AWACS (SUAWACS).

We currently are evaluating a number of lethal and non-lethal measures to counter the SUAWACS threat expected in the late 1980s. Non-lethal measures involve ECM, communication jamming, decoys, or various combinations of such measures. Lethal measures involve an advanced air-launched missile.

We propose continuing R&D efforts in bomber ECM. Increased ECM capabilities would be highly useful even if we develop and deploy standoff cruise missile carriers (CMCs) and penetrators using advanced technologies.

Finally, a number of new programs in the areas of sensors and munitions have great potential to enhance strategic bomber effectiveness in general purpose and nuclear roles. Examples are synthetic aperture radars and Assault-Breaker munitions.

5. Aerial Tankers

The KC-135A tanker force was originally sized to support the strategic bombers, and today the entire KC-135A force is required for a generated SIOP. They also support airlift forces and Air Force tactical aircraft. The potential combined demands of SIOP and a major conventional conflict could severely strain the refueling capability available. KC-10As entering the inventory will provide some additional refueling capability for general-purpose missions.

We are continuing to examine the tanker problem. Additional KC-10A procurement beyond the programmed buy could provide added tanker capability. Another alternative is KC-135 re-engining, although the investment cost would be quite high. We are currently reassessing the reengining effort in the light of our tanker requirements for SIOP/General Purpose Force employment in the mid-to-late 1980s.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Air-launched Cruise Missile Program				
Development: $ Millions	90.6	107.3	70.6	11.3
Procurement: $ Millions	372.3	579.6	605.4	611.7

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Multi-Role Bomber				
Development: $ Millions	--	261.0	--	26.5
Counter-SUAWACS Technology				
Development: $ Millions	12.3	15.8	10.6	15.9
Modification of B-52 Strategic Bomber				
Development: $ Millions	94.3	100.9	143.8	111.1
Procurement: $ Millions	567.7	485.0	511.6	505.9
Bomber Research and Development				
$ Millions	10.0	13.9	14.4	28.8
KC-135 Re-engining				
Development: $ Millions	13.0	23.5	30.0	30.1
Procurement: $ Millions	5.0	104.5	31.5	--

II. STRATEGIC DEFENSIVE FORCES

A. Program Basis

Our surveillance sensors are designed to provide tactical warning and to assess the size and objective of a missile attack on North America. We continue treaty-permitted R&D on Ballistic Missile Defense (BMD) as a hedge against Soviet breakthroughs or breakouts that could threaten our retaliatory capability, and as a possible point defense option to enhance the survivability of our ICBM force. Together with Canada, we are developing an air defense system to provide tactical warning and characterization of bomber and cruise missile attacks, to provide a limited air defense in war, and to control access to North American airspace in

peacetime and crises. Furthermore, we are improving surveillance systems to warn of attack on U.S. space systems and we are continuing R&D on anti-satellite techniques as the basis for future space defense. Finally, we oversee the formulation of civil defense programs to reduce the possibility of coercion in crisis, to enhance deterrence, as well as to improve population survival and to provide for continuity of government, should deterrence fail.

B. Program Status and Description

Our objectives are addressed in the three elements of our strategic defense programs: Ballistic Missile Defense, Air Defense, and Space Defense. The Department of Defense manages no civil defense programs. However, the National Security Council and DoD oversee the development of civil defense policies and programs by the Director of the Federal Emergency Management Agency (FEMA).

1. Ballistic Missile Defense R&D

The BMD program, operating within the constraints of the Anti-Ballistic Missile Treaty of 1972 and its 1974 Protocol, consists of two interrelated programs, an Advanced Technology Program and a Systems Technology Program. The Advanced Technology Program involves broad research on future ballistic missile defense technologies and concepts, including laboratory and field experiments in missile discrimination, simulations, missile-borne data processing, and interceptor concepts.

The Systems Technology Program envisions a layered defense concept using different technologies for BMD outside and within the earth's atmosphere. The concept includes an interceptor using long wavelength infrared (LWIR) sensors to detect reentry vehicles (RVs), and a homing intercept guidance system accurate enough to kill RVs using non-nuclear warheads. The first flight test of the Homing Overlay Experiment to demonstrate the technology associated with these concepts is planned in FY 1982. The pre-prototype demonstration of a Low-Altitude Defense (LoAD) system is a major new effort, begun in FY 1980 as a hedge against the possibility of unconstrained growth of the Soviet ICBM threat to MX.

2. Air Defense

Soviet bombers flying at low altitudes could penetrate undetected through gaps in our bomber surveillance coverage. Because of the potential vulnerabilities caused by this situation, we are taking steps now to improve our tactical bomber warning. Since our bomber surveillance and warning radar sensors are prerequisites to the command and control functions essential to strategic deterrence, I discuss those programs in Section III of this chapter, under Strategic Surveillance and Warning. In addition to surveillance systems, we also need manned interceptors, with their supporting command and control, in order to characterize penetrators as friendly or hostile, to control access to our sovereign airspace, and to provide limited defense in crisis or war.

a. Interceptor Forces

U.S. and Canadian active and U.S. Air National Guard (ANG) F-106, F-15, CF-101, and F-4 squadrons provide 312 interceptors to North American

air defense. The NORAD-assigned interceptor forces, along with other Tactical Air Command (TAC) F-15 and F-4 augmentation forces, maintain peacetime alert at 26 sites around the periphery of the 48 contiguous states. To improve the interceptor force, two squadrons of TAC F-15s are programmed to be assigned to air defense, the first squadron of 18 aircraft in FY 1982 and the second in FY 1985. The Air Force, Navy, and Marine Corps are tasked to provide additional interceptors in a crisis. In 1982, 48 Air Force F-15s will replace F-4s in the air defense augmentation force, and in 1984, eight Marine Corps F-18s will replace F-4s. Canada is scheduled to phase new F-18 fighter aircraft into its active forces starting in FY 1983.

b. Airborne Surveillance and Control Systems

In crises and in wartime, we plan to augment our ground-based surveillance radars with E-3A Airborne Warning and Control System (AWACS) aircraft. A total of 34 AWACS are tentatively planned for operation by TAC; at present, seven of these are designated for North American air defense in peacetime. Additional AWACS flying hours will be available within the programmed AWACS force to supplement North American tactical warning surveillance coverage, depending on other AWACS commitments.

c. Command and Control Systems

The CONUS Semi-Automatic Ground Environment (SAGE) system will be phased out in FY 1982-1983 and will be replaced by the Joint Surveillance System radars and four Regional Operational Control Centers (ROCCs). The Alaska manual control system will be replaced with an ROCC in FY 1983, and two ROCCs will be acquired by Canada via FMS.

3. Space Defense

While emphasizing our intent to abide by agreements limiting the use of space to peaceful purposes, and while stating our preference for verifiable limitations on anti-satellite (ASAT) systems, the President has directed that, in the absence of an agreement and in the face of an already-tested Soviet ASAT system, we should vigorously develop a U.S. ASAT capability and work to make our satellites survivable.

Our space defense program has several elements. First, we are improving our ability to monitor space activities. In FY 1982, we will activate the first of a network of five worldwide ground-based electro-optical deep space surveillance sensors to detect, track, and identify objects. Several radars will be modified and tested to provide additional high- and low-altitude surveillance coverage. We are working on information processing improvements for better orbital predictions and for support of anti-satellite targeting and strike assessment. We also have research and development activities in long wavelength infrared space-based surveillance technologies.

The Air Force is developing the Prototype Miniature Air-Launched System (PMALS) for an ASAT capability. The system employs a Short Range Attack Missile (SRAM) first stage, an ALTAIR II second stage, and a Miniature Vehicle warhead terminal stage. We are also considering high-energy lasers and particle beam concepts for possible far-term applications.

The Space Defense Operations Center (SPADOC) was established at the NORAD Cheyenne Mountain Complex in FY 1980 in order to provide command, control, and communications to manage space defense operations. SPADOC is being enhanced to include communications with satellite operators and users, to support future ASAT operational testing and, eventually, to improve command and control of our space surveillance systems.

C. Program Costs

The development and procurement costs for the strategic defense programs discussed in this section are given below:

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Ballistic Missile Defense				
Development: $ Millions	240.7	268.2	345.5	409.8
Joint Surveillance System				
Development: $ Millions	5.8	9.7	1.4	.9
Procurement: $ Millions	62.9	--	--	--
Space Defense System				
Development: $ Millions	83.8	110.2	147.3	190.9

III. STRATEGIC COMMAND, CONTROL, AND COMMUNICATIONS

A. Program Basis

Our strategic command, control, and communications (C^3) systems are designed to give the National Command Authorities (NCA) flexible operational control of the strategic forces at all levels of conflict. The FY 1982-1986 program will correct many of the most serious deficiencies in strategic C^3 capabilities. We will continue to improve our ground-based radars and space-based sensors for strategic surveillance and warning. Survival of the bomber force and important elements of our C^3 system depend on high-confidence tactical warning. We also need attack assessment information that is accurate and timely enough to assist the NCA in selecting the most appropriate response. We plan to increase substantially the capability of our airborne command posts to provide survivable decision-making and direction of the strategic forces. Our programs also will reduce the vulner-

ability of our strategic communications to physical attack, jamming, and nuclear effects, so that we can reliably communicate with our forces in a nuclear war. Programmed improvements in strategic C^3 are described below.

B. Program Description

1. Strategic Surveillance and Warning

a. Missile Attack Warning and Assessment

Our primary missile attack warning system consists of satellites and fixed ground processing stations. These satellites use infrared sensors to detect ICBM and SLBM launches. The FY 1982-1986 program emphasizes improved survivability for both the ground- and space-based segments of the system. By FY 1985, we will have deployed five mobile (truck-mounted) ground terminals (MGTs) for reception and processing of missile warning data, thus reducing our dependence on vulnerable fixed ground stations. Additional system survivability improvements will be incorporated during the production of replacement satellites. The modified satellites will also be able to relay warning messages from MGTs to airborne command posts over communications links with improved anti-jamming protection.

Our ground-based radar systems would confirm satellite warning of ICBM or SLBM attacks. We depend on the Ballistic Missile Early Warning System (BMEWS) radars at sites in Greenland, Alaska, and England to confirm an ICBM attack. Programmed improvements of the Greenland BMEWS radars will produce better estimates of attack size and impact points--estimates that should be sufficient to verify an attack on our MINUTEMAN force. We also will complete the replacement of obsolete computers at all three BMEWS sites. The Perimeter Acquisition Radar Attack Characterization System (PARCS), a converted ballistic missile defense radar located in North Dakota, will act as a backup for BMEWS coverage of ICBM attacks against central CONUS. Two new PAVE PAWS phased-array radars along our east and west coasts provide improved SLBM radar surveillance of the most threatening Soviet SSBN operating areas. In addition to PAVE PAWS, we will continue to operate the older FPS-85 phased-array radar and one FSS-7 in Florida to cover possible SLBM launch areas southeast of the United States.

Twice during June 1980, errors that were generated in NORAD communications interface equipment resulted in false indications of a missile attack. In accordance with planned procedures, precautionary measures were taken to ensure that our bombers and command aircraft were not trapped on the ground. Neither the satellites nor the radars that provide the missile warning data registered an attack at the time, and the duty officers correctly evaluated the situation and terminated the alert immediately. The precautionary procedures used are the same as those practiced frequently during routine exercises. At no time during these incidents did the alert go beyond the initial, precautionary phase.

The spurious data that caused the alert were subsequently traced to a failed micro-electronic circuit in the communications interface equipment; this circuit is frequently referred to as a "chip." As a result of these incidents, we have undertaken a number of technical, procedural, and managerial steps to minimize the possibility of false alerts in the future and to provide duty officers additional computer assistance in rapidly and correctly evaluating ongoing situations.

Computer programs have been modified to incorporate additional redundancy checks, which will help ensure the validity of missile warning messages transmitted throughout the system. Data scopes have been installed on the communications lines that connect NORAD with SAC, the National Military Command Center (NMCC), and the Alternate National Military Command Center in order for the data being transmitted to the various nodes to be monitored manually.

These changes are in place and working, but we will continue to monitor the system closely. We have highly trained and experienced personnel in charge of all phases of the warning process, and there is no chance that any irreversible action would be taken based on ambiguous computer information.

b. Bomber and Cruise Missile Warning

Currently, Soviet bombers flying at low altitudes could probably penetrate undetected through gaps in radar coverage over Canada and our ocean approaches. Programmed AWACS will not be maintained on continuous airborne alert and thus might not be available to warn against a surprise attack. Because of these vulnerabilities, we need to improve our tactical warning against Soviet bomber attacks. The FY 1982-1986 program funds two over-the-horizon backscatter (OTH-B) radars--IOCs in FY 1984 and FY 1986--for all-altitude detection of bombers approaching our east and west coasts. Two options for improving warning of bomber attacks from the north are an Enhanced Distant Early Warning (EDEW) Line and a north-looking OTH-B radar. Experimental OTH-B radar testing should allow us to choose by the end of this year the best option for northern bomber surveillance. As a long-term goal, we are pursuing a capability to detect and track bombers from space.

c. Integrated Operational Nuclear Detection System (IONDS)

IONDS will increase our capability for rapid detection, location, and reporting of nuclear detonations worldwide. The system will provide nuclear trans- and post-attack damage assessment information to the NCA in a nuclear war, and it will contribute to nuclear test ban monitoring and intelligence collection in peacetime. IONDS sensors will be installed on the satellites of the NAVSTAR Global Positioning System. IONDS also will be able to transmit nuclear detection reports directly to airborne command posts. The FY 1982-1986 program funds the development and procurement of IONDS sensors and their integration on host satellites.

2. Strategic Command and Control Centers

a. The E-4 Airborne Command Post (ABNCP) Program

The E-4B aircraft will provide survivable command, control, and communications for the NCA (the President, the Secretary of Defense, or their designated successors), the Joint Chiefs of Staff, and the Commander-in-Chief of the Strategic Air Command (CINCSAC). The program is designed to enable the United States to execute the Single Integrated Operational Plan (SIOP) and direct the operations of our strategic retaliatory forces, even if an enemy attack destroys our fixed, ground-based command centers and communications networks. Our first

E-4B--the refurbished test-bed aircraft--entered operational service in early 1980. To give us a total force of six E-4B aircraft, we are upgrading the three existing E-4A aircraft to the E-4B configuration by adding improved C^3 systems and nuclear effects hardening (deliveries in 1983, 1984, and 1985), and we will procure two additional E-4B aircraft (deliveries in 1986 and 1987). We have thus accelerated the E-4B procurement schedule by one year, compared with last year's budget, to attain an FY 1987 full operational capability (FOC).

The six E-4B aircraft will support both a continuous airborne alert for the CINCSAC airborne command post (ABNCP) and a ground alert for the NCA/JCS National Emergency Airborne Command Post (NEACP). These aircraft will provide considerable improvements in C^3 capability that could not be accommodated in the EC-135 aircraft they replace. Airborne endurance is increased with refueling, and secure, anti-jam communications are provided. Key communications improvements will increase reliability and survivability of communications to MINUTEMAN and TITAN wings, to airborne strategic bombers, and to the TACAMO aircraft relaying execution messages to SSBNs. To assure continued operations during nuclear war, the E-4B is hardened against nuclear effects, including electromagnetic pulse (EMP).

b. Other Improvements to C^3 Aircraft

We also are funding improvements to the Very Low Frequency/Low Frequency (VLF/LF) communications system for EC-135 aircraft serving as airborne command posts for CINCPAC, CINCLANT, and CINCEUR, and as auxiliary command posts for CINCSAC. Transmitter power will be increased to 100 kw and anti-jam protection will be incorporated to provide more reliable communications over extended distances. The Airborne Launch Control System (ALCS) Phase III program will provide nine EC-135 airborne launch control center aircraft with capabilities to monitor the status of 200 MINUTEMAN ICBMs and to retarget these missiles. This will give the NCA the flexibility to employ surviving MINUTEMAN missiles equipped with ALCS Phase III capability, even if an enemy attack disrupts or destroys their fixed ground-based launch control centers.

3. Strategic Communications

a. Air Force Satellite Communications (AFSATCOM) System

The AFSATCOM system provides world-wide communications linking ground and airborne command posts to our strategic nuclear forces. The space segment consists of ultra-high frequency (UHF) communications channels on the Satellite Data System (SDS) satellites in polar elliptical orbits, the Fleet Satellite Communications System (FLTSATCOM) satellites in geostationary orbits, and classified host spacecraft. Installation of satellite communications terminals on airborne command posts, SAC bombers (B-52Gs, B-52Hs, FB-111s), TACAMO aircraft, and RC-135 reconnaissance aircraft, as well as at ground-based command posts and ICBM Launch Control Centers, is scheduled to be completed by the end of 1983. AFSATCOM terminals also will be installed on KC-10 tankers.

We also are planning to augment this initial AFSATCOM capability by deploying single-channel transponders (SCTs) on SDS satellites and on

the geostationary Defense Satellite Communications System (DSCS) Phase III satellites to accommodate communications from the E-4B ABNCP at super-high frequency (SHF). Because of the increased jamming protection available at SHF, the E-4B will be able to transmit execution orders more reliably to the strategic forces. This is particularly important for our bombers, which might be dependent principally or even solely on satellite communications while en route to their targets. We expect an initial operational capability for the SHF SCT links by 1986, with a full operational capability scheduled for FY 1987.

b. Airborne Naval Strategic Communications Systems (TACAMO)

We depend on Navy TACAMO aircraft for survivable communications to our ballistic missile submarines. Currently, one of these aircraft is continuously airborne in the Atlantic to ensure that NCA orders could be relayed to SSBNs in that area, even if fixed, ground-based transmitters were destroyed. There is the same requirement for airborne TACAMO in the Pacific to support SSBNs operating there. To meet this objective, we are buying additional EC-130s to attain a deployed fleet of 18 TACAMO aircraft by mid-FY 1983. To sustain an airborne posture through the early 1990s for both Atlantic and Pacific TACAMO, we will procure nine replacement C-130 aircraft during FY 1982-1985, and we are modifying existing aircraft to extend their useful service life. The FY 1982-1986 program also funds EMP hardening of the entire TACAMO fleet by FY 1988.

C. Program Costs

The development and procurement costs for strategic C^3 programs discussed in this section are given below.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Strategic Surveillance and Warning (BMEWS, PAVE PAWS, CONUS OTH-B, IONDS)				
Development: $ Millions	11.9	21.1	39.1	83.3
Procurement: $ Millions	129.9	164.9	333.3	200.3
Strategic Command Centers (E-4B ABNCP, ALCS Phase III)				
Development: $ Millions	24.5	7.0	9.6	3.7
Procurement: $ Millions	117.8	140.0	122.8	325.5

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Strategic Communications (AFSATCOM, TACAMO)				
Development: $ Millions	22.8	48.1	76.6	113.6

D. Conclusion

Although we will improve our capability to respond promptly to a Soviet first strike, we also need to pay attention to the C^3 problems likely to arise in a prolonged nuclear war. We must be certain that our C^3 systems will not only survive the first strike, but will endure as long as our strategic forces. Furthermore, for flexible employment of our strategic forces, our C^3 systems must be able to monitor the status of our own and enemy forces. The FY 1982-1986 program emphasizes enhancements to the survivability of our tactical warning systems, strategic command centers, and communications. These C^3 programs also contribute to endurance and flexibility, and we need to emphasize these attributes more heavily in the future. This is why our current R&D efforts are aimed at enhancing C^3 endurance and flexibility.

CHAPTER 2

THEATER NUCLEAR FORCES

I. PROGRAM BASIS

A. Force Structure

The United States has thousands of nuclear weapons designated for theater use. Most of these weapons are authorized for deployment outside the United States, the majority of which are deployed in Europe in support of NATO. These include air-delivered bombs, short- and medium-range ballistic missile warheads, artillery projectiles, surface-to-air missiles, atomic demolition munitions, and depth bombs. The withdrawal of the HONEST JOHN warheads from Europe, announced in December 1979, is complete. In addition, POSEIDON submarine-launched ballistic missile reentry vehicles are committed to the Supreme Allied Commander Europe (SACEUR) for targeting. Nuclear bombs, as well as nuclear anti-air warfare (AAW) and anti-submarine warfare (ASW) weapons, are deployed aboard a variety of ships and submarines.

B. Program Objectives

1. Improving NATO's Long-Range TNF Capability

As described in Section I, Chapter 5, NATO is proceeding with a long-range TNF modernization program involving the deployment of 464 ground-launched cruise missiles (GLCMs) and 108 PERSHING II launchers in several European countries. This program is our top TNF priority.

2. Improving the Military Effectiveness of Battlefield TNF

The capability of current nuclear artillery rounds could be improved. New rounds are being developed in order to improve NATO's battlefield nuclear capabilities. We also plan to deploy modernized warheads for LANCE short-range missiles to upgrade our battlefield forces.

3. Improving the Command, Control, Communications, and Intelligence (C^3I) Systems Supporting TNF

For the near term, we will concentrate on improving the security and reliability of communications to nuclear custodial units. For the longer term, we will pursue means to improve TNF targeting and control.

4. Improving TNF Safety, Security, and Survivability

Improving TNF safety, security against possible sabotage and terrorist attacks, and survivability in a wartime environment is a major objective.

II. PROGRAM DESCRIPTION AND STATUS

A. Long-Range TNF

Long-range theater nuclear systems could be used for limited or widespread attacks on targets in the Western USSR and in Eastern Europe. NATO's current arsenal of land-based long-range forces (which does not include nuclear forces belonging to France) consists of U.K. VULCAN and U.S. F-111 aircraft. Two new land-based missile systems--PERSHING II and GLCM--will be deployed beginning in 1983. The PERSHING II ballistic missile, a follow-on to the shorter-range PERSHING IA now deployed in Europe, is currently in engineering development. GLCM, which is also in engineering development, has an operational design range of 2,500 km. The high accuracy and variable yields of PERSHING II and GLCM provide the capability to attack hard targets while controlling collateral damage. We are continuing to plan for a late-1983 IOC for both systems, with in-theater deployments completed by 1985 for PERSHING II and by 1988 for GLCM.

Each of the new missiles has distinctive characteristics. PERSHING II offers a particularly high assurance of penetrating future Soviet defenses, has the capability to strike time-urgent targets, and takes advantage of existing PERSHING IA infrastructure. GLCMs have lower life-cycle costs, and they have longer range, allowing them to attack deeper targets and to be based farther rearward, thereby increasing pre-launch survivability and offering the opportunity for broader participation among the allies through deployments on their soil. In addition, the deployment of a mixed ballistic and cruise missile force hedges against the unexpected failure of one type of system, provides the flexibility to select the best weapon for a given mission, and greatly complicates enemy planning.

The deployment of PERSHING II and GLCM could also allow release of some dual-capable aircraft (DCA) from fixed nuclear strike plans, thus improving NATO's conventional warfighting capabilities. Even if all DCA were released for other missions, the PERSHING II and GLCM deployments would still represent an improvement over NATO's current capability to destroy fixed targets, especially in a scenario in which the Warsaw Pact launches a theater nuclear strike after a period of conventional warfare.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
PERSHING II *				
Procurement:	--	2.1	209.8	352.1
RDT&E:	145.8	147.4	154.1	106.9
TOTAL	145.8	149.5	363.9	459.0
GLCM				
Procurement:	8.2	98.8	355.1	475.3
RDT&E:	59.5	68.4	53.2	9.0
TOTAL	67.7	167.2	408.3	484.3

* DoE funds are not included.

NATO's current sea-based long-range systems include U.K. POLARIS and U.S. POSEIDON submarine-launched ballistic missiles (SLBMs), as well as some aircraft on U.S. aircraft carriers. We are preserving the option for the future deployment of land-attack sea-launched cruise missiles (SLCMs) with nuclear warheads. If the decision is made to deploy these weapons, they could be deployed aboard submarines and surface ships, where they could contribute to deterrence of, and defense against, nuclear war. In addition, in the 1990s, the United Kingdom plans to modernize its POLARIS force by replacing its four SSBNs with a force of new British SSBNs carrying the U.S. TRIDENT I missile. This will result in a major increase in the number of independently-targeted warheads on British SSBNs.

B. Battlefield TNF

Battlefield theater nuclear weapons include 8-inch and 155mm howitzers and associated artillery-fired atomic projectiles (AFAPs), LANCE and HONEST JOHN surface-to-surface missiles, and certain tactical air-delivered weapons. These forces would directly support ground forces in contact with the enemy, and would complement theater strike systems intended for shallow interdiction and deeper nuclear strikes.

A number of modernization programs are underway to upgrade battlefield TNF capability. LANCE has replaced HONEST JOHN and SERGEANT in all U.S. delivery units, but HONEST JOHN continues to be deployed in some non-U.S. NATO units. Additional LANCE (W70-4) warheads will be produced during 1981-1983. These warheads will offer the option to include an enhanced radiation (ER) feature, should the President decide to deploy such a capability.

A new 8-inch artillery round (W79) is completing engineering development and entering production. The new round, a rocket-assisted projectile (RAP), has a greater range when fired from the M110A1 howitzer than the current W33 round.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
8-Inch AFAP *				
Procurement:	19.2	20.4	16.9	14.2
RDT&E:	3.9	1.8	0.0	0.0
TOTAL	23.1	22.2	16.9	14.2

* DoE funds are not included.

C. Mid-Range TNF

NATO's current mid-range TNF includes PERSHING IA ballistic missiles and dual-capable aircraft, such as the F-4, F-104, and JAGUAR. U.S. PERSHING IA missiles will be retired on a one-for-one basis as the long-range PERSHING II missiles are deployed, but the FRG will maintain a mid-range PERSHING force. The

mid-range force will be modernized with the replacement, by the mid-1980s, of current DCA with dual-capable F-16 and TORNADO fighter-bombers. In addition, the tactical bomb stockpile is being upgraded with the deployment of the new B61 Mod 3s and Mod 4s. Compared with older bombs, these systems have improved military characteristics and enhanced safety and security features.

D. Land-Based Defensive Systems

These forces include the NIKE-HERCULES air defense system and atomic demolition munitions (ADMs). We have no current plans to replace these systems with new nuclear weapons, and we intend to rely increasingly on conventional alternatives in the future. Accordingly, the number of ADMs and NIKE-HERCULES missiles will be reduced gradually as improved conventional systems are deployed.

E. Fleet Systems

These forces include fleet anti-air, anti-submarine, and anti-surface ship warfare systems: TERRIER, ASROC, SUBROC, air-delivered nuclear depth bombs, and carrier-based tactical bombs. We currently are examining the need for an ASW system as an ultimate replacement for SUBROC and ASROC.

F. C^3I Systems Supporting TNF

By mid-1981, we expect to complete a number of urgent upgrades in our communications links to U.S. nuclear custodial units in Europe. We are extending the European Command and Control Console System (ECCCS). In addition, we are upgrading the high frequency (HF) radio net by installing new, more reliable HF radios at five existing broadcast control stations. The FY 1982-1986 program supports further enhancements.

We are continuing with our deployment of satellite communications terminals to U.S. theater nuclear forces to give us a redundant means of transmitting emergency action messages. We also plan to procure additional terminals to support GLCM deployments.

We recently have completed a comprehensive plan for longer-term improvements to theater nuclear weapons release procedures, communications, and command and control. We expect the key initiatives identified in this plan to be included in future Defense budgets.

G. TNF Safety, Security, and Survivability

While we pursue more survivable and ready theater nuclear forces, we must not reduce our efforts to cope with the increased peacetime threat of world terrorism. Therefore, in coordination with DoE, we are placing emphasis on measures to make our theater nuclear systems safer and more secure. Among the improvements being considered for our newer theater nuclear systems are the following:

-- insensitive high explosives to reduce the risk that an accident or terrorist act could detonate the high explosive in a nuclear weapon;

-- improved Permissive Action Links (PALs) which require a unique code to gain access to, or to arm, a weapon;

-- enhanced electrical safety features and packaging intended to reduce still further the potential for accidental arming or detonation due to abnormal environments (e.g., electrical system malfunction, fire, crash);

-- nonviolent command disable systems that can render a weapon inoperable without the radioactive dispersal associated with explosive destruction systems; and

-- Continuing storage site security upgrade and transportation safety and security features intended to defend against terrorist action.

In addition, we are continuing efforts to enhance the wartime survivability of TNF. For example, we plan to house GLCM in shelters hard enough to withstand a surprise conventional strike.

III. CONCLUSION

Our theater nuclear programs are designed to provide a wide range of options to respond appropriately to any level of potential attack. A credible TNF capability will strengthen and enhance the links between conventional and strategic forces and is designed to convey to a potential aggressor the capability of the United States and its allies to respond across the full spectrum of potential conflict. The force modernization programs outlined in this chapter will greatly enhance our ability to protect our interests and meet our theater objectives.

CHAPTER 3

LAND FORCES

I. PROGRAM BASIS

A. Missions and Functions

The land forces of the United States, comprising the Army and the Marine Corps (less Marine tactical aviation elements), are designed to engage and defeat opposing ground forces by close and direct combat. These forces are our only military units capable of occupying, defending, or retaking territory. Their role in conventional warfare is central. The Army has been designed and equipped primarily to counter Soviet/Warsaw Pact ground forces in Europe as part of the NATO Alliance. This emphasis continues to be prudent, not because war in Europe is the most likely contingency, but because the consequences of being unprepared for that conflict would be especially grave. Army divisions, however, have the flexibility to permit their employment in other contingencies. Our Marine forces have been designed fundamentally for amphibious operations; however, their structure and equipment enable them to conduct protracted operations ashore when supported by Navy and Army logistics elements.

While the majority of the force is designed primarily for combat in Europe, certain portions of it--the Army's 82nd Airborne and 101st Airborne (Air Assault) divisions, as well as the three active Marine Corps divisions--are configured and equipped to perform tasks not directly associated with a particular theater of operations. And although our emphasis has been on preparations to fight in Europe, recent events have made it clear that some of our forces must be configured for rapid deployment worldwide. Designing ground forces for rapid deployment to distant areas of crisis presents a dilemma: those forces capable of the most immediate response, i.e., those most suitable for strategic airlift, are least capable upon arrival. The more capable mechanized or armored forces place a severe drain on our strategic airlift and must be moved and supported primarily by sealift; this problem can be ameliorated in some theaters by prepositioning.

The exact configuration and mix of the forces we might employ outside of NATO is not preordained, but we must recognize the increasing sophistication and firepower capability of the land forces, designed on the Soviet mold, that might be confronted. This reality dictates that we plan for the deployment of some divisions with more firepower and ground mobility than our infantry divisions currently possess. These forces cannot deploy as quickly as light divisions, but their greater capability once in the theater offsets their higher demands on strategic lift. We are now taking steps to improve the responsiveness of our ground forces to non-NATO contingencies. These initiatives are described in detail in Chapter 6.

B. Forces

1. Composition

The basic composition of our land forces is essentially unchanged from last year: a total of 28 divisions, of which 19 are active (16 Army and three Marine Corps) and nine are Reserve Components (eight Army National Guard and one Marine Corps). These divisions--as well as the separate, non-divisional combat units shown below--represent the muscle of our land force capability and are backed by a comprehensive training and support base that enables us to man, operate, and maintain this force structure.

2. Disposition

Chart 3-1 shows the current location of all active and reserve divisions. In addition to the major units shown, the Marine Corps maintains a reinforced brigade of the Third Marine Division in Hawaii and a relatively modest ground defense force (built around a reinforced rifle company) at Guantanamo Bay, Cuba. The Army has forward deployed in Europe a brigade from each of three CONUS-based divisions. Army force structure also contains a significant number of separate brigades and regiments that are not identified with parent divisions. These separate Army forces are deployed as follows:

Active Units

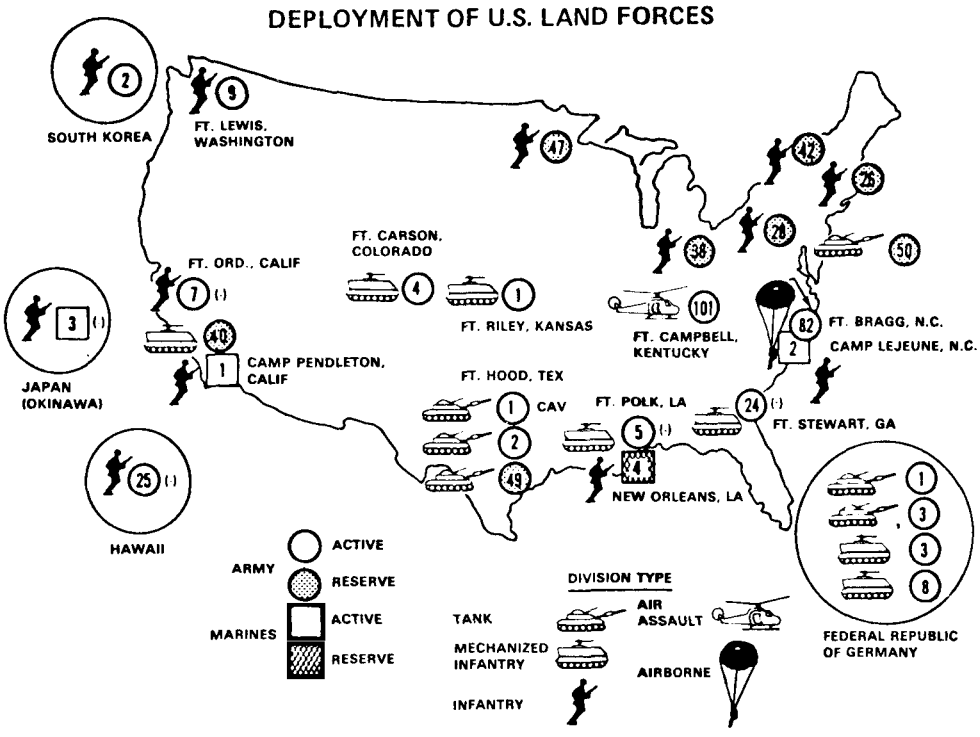
CONUS	Europe	Other
1 Infantry Brigade	2 Armored Cavalry Regiments	1 Infantry Brigade (Alaska)
1 Armored Brigade	1 Infantry Brigade (Berlin)	1 Infantry Brigade (Panama)
1 Armored Cavalry Regiment		
1 Cavalry Brigade (Air Combat)		

Reserve Units

CONUS

12 Infantry Brigades
9 Mechanized Infantry Brigades
4 Armored Brigades
4 Armored Cavalry Regiments

CHART 3-1



II. PROGRAM DESCRIPTION

A. Objectives

Our basic objectives for structuring and equipping U.S. ground forces have not changed significantly in recent years. Our major long-term goal is to improve the combat capability of our ground forces by:

-- enhancing force structure;

-- improving responsiveness to both NATO and non-NATO contingencies;

-- improving the sustainability of our forces, not only in Europe, but in other theaters worldwide; and

-- improving the effectiveness of individual equipment through modernization.

B. Initiatives

The program initiatives intended to accomplish these objectives during the five-year program (FY 1982-1986) are discussed below. Some of them have begun; others are still being defined. They are all complemented by the continuing modernization effort described later in this chapter.

1. Enhanced Force Structure

The five-year program includes the following changes in force structure designed to improve the combat capability and anti-armor potential of U.S. land forces:

a. The Army will activate a total of 12 additional "heavy" maneuver battalions as follows: FY 1982--one tank; FY 1983--one tank and two mechanized infantry; FY 1984--four tank and one mechanized infantry; and FY 1985--two tank and one mechanized infantry.

b. The Army will continue its plan to increase the density of 155mm self-propelled artillery in the force by changing the structure of Europe-based battalions. Each of three batteries in these battalions will be configured with eight howitzers instead of six. These improvements will be implemented in FY 1983.

c. The Army will activate an attack helicopter battalion in Europe, substantially increasing the U.S. anti-armor helicopter force there.

d. The Army will enhance its intelligence and warning capability by activating six divisional Combat Electronic Warfare Intelligence (CEWI) battalions, four in FY 1982 and two in FY 1983.

e. In FY 1982, the Marine Corps will complete its artillery improvement plan to replace the 105mm towed howitzer in two of the three active divisions with the M-198 155mm towed howitzer.

2. Improved Responsiveness

Several initiatives that will improve our ability to deploy U.S. land forces throughout the world are continuing. Selected CONUS-based active and reserve units will receive increased emphasis.

a. The Army program calls for equipping the 9th Infantry Division with modern anti-armor weapons and high technology systems in order to improve that division's combat power, with minimal adverse impact on its strategic mobility. The 9th Infantry Division will essentially be a test-bed for evaluating new technology approaches to balancing combat power and strategic mobility.

b. Prepositioning of equipment and supplies for CONUS-based Army and Marine Corps units in the European theater and the Indian Ocean will improve responsiveness by reducing the strategic mobility required to move our land forces to areas of crisis. These programs are described in detail in Section II, Chapters 6 and 7.

3. Improved Sustainability

The FY 1982-1986 program provides funds to achieve, by the end of the FY 1986 funded delivery period, an inventory of war reserve munitions adequate to:

-- preserve our current ability to support U.S. and Republic of Korea (ROK) forces;

-- increase munitions to enhance the sustainability of U.S. forces in Europe; and,

-- sustain U.S. forces in a non-NATO contingency.

In addition to these sustainability efforts, much of the inventory will be modernized at the same time. As a result, retention of some older, but less effective ammunition will provide an additional increment of sustainability.

4. Force Modernization

Within constrained funds, the Army is undertaking a significant modernization program; the Marine Corps' effort is more modest. A general transition of major Army programs from development to procurement is currently underway. The XM-1 tank, the Infantry Fighting Vehicle (IFV) and the Cavalry Fighting Vehicle (CFV), the Multiple Launch Rocket System (MLRS), the BLACKHAWK utility/transport helicopter, the 155mm cannon-launched guided projectile, COPPERHEAD, the M9 Armored Combat Earth-mover, and the surface-to-air missile PATRIOT are just some of the programs entering service within the Army. The Marine Corps is monitoring many of these developments and may fund selected acquisition in the future. Near-term Marine Corps acquisition funding is concentrated on procurement of M-198 155mm howitzers to replace the 105mm howitzers in the direct support artillery battalions of Marine divisions, and on new procurement of, and a service life extension program for, the LVTP-7 amphibious assault vehicle. Both the Army and Marine Corps are investigating the feasibility of using light armored vehicles to improve the capability of our light ground forces without increasing the need for already constrained strategic lift.

The following section outlines major land force acquisition programs in the FY 1982 budget by functional area.

a. Close Combat

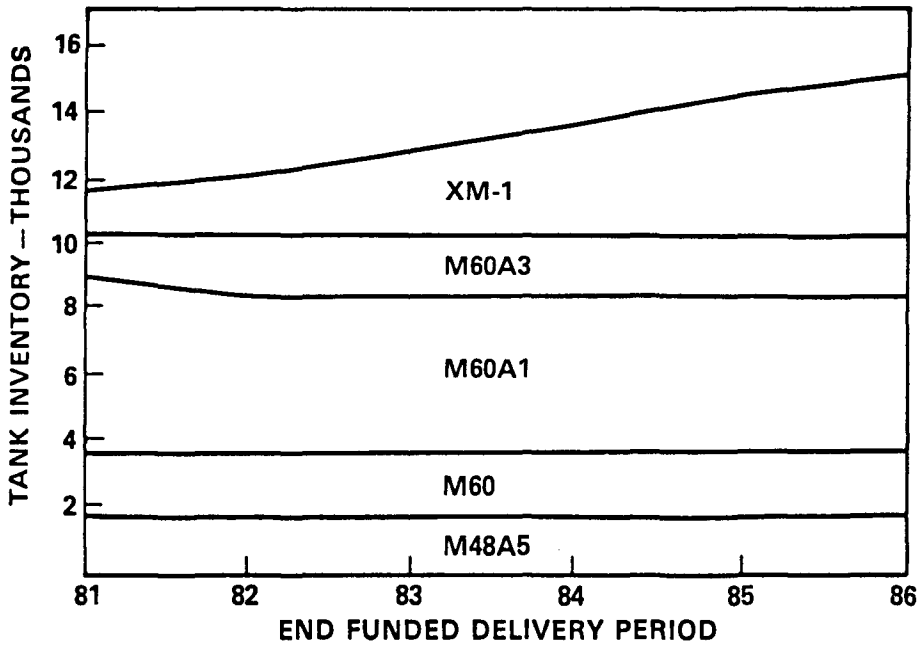
Providing a capability for our land forces to defeat all potential enemies in close combat continues to be a major effort within the overall Defense program. Soviet emphasis on improved armored systems has required us to develop and procure systems capable of defeating enemy armor while providing our soldiers increased survivability, firepower, and tactical mobility on the modern battlefield. Accordingly, the XM-1 tank, the Fighting Vehicle System (FVS), and other enhanced anti-armor weapons continue to receive the highest priority in funding our land forces.

(1) Tanks

At the end of the FY 1981 funded delivery period, our 105mm gun tank inventory will be 73 percent of estimated requirements. The proposed program will increase this figure to 82 percent by the end of the FY 1983 funded delivery period. Chart 3-2 shows the Army's primary tank assets projected through FY 1986.

CHART 3-2

U.S. ARMY TANK INVENTORY



(a) XM-1

Procurement of the XM-1 main battle tank began in FY 1979. FY 1981 funding is sufficient to achieve a 30/month production rate. FY 1982 funding will permit the rate to increase to 60 tanks per month by September 1983.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	51.8	51.6	29.1	13.6
Procurement:				
Quantity	309	360	569	627
$ Millions	717.8	1,147.5	1,346.8	1,448.0

(b) M-60 Series

M-60 production will cease by the end of FY 1981 as the XM-1 production rate is established. We will continue to upgrade existing M60A1s to the M60A3 configuration through FY 1981.

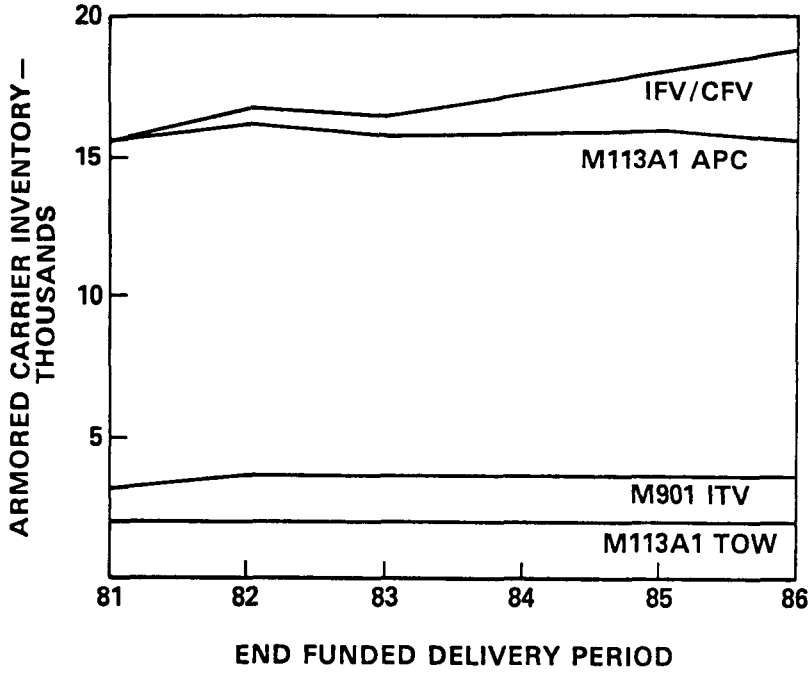
	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Procurement:				
Quantity	106	--	--	--
$ Millions	111.0	--	--	--
Modification:				
Quantity	296	147	--	--
$ Millions	135.4	75.3	11.7	--

(2) Armored Carriers

The Soviet effort to increase the quantity and lethality of its land combat systems has emphasized the need for U.S. combat vehicles offering increased survivability. The present M113 family of vehicles provides protection against small arms and artillery fragments. The ITV and FVS provide the capability to defeat Soviet armor while offering increased protection to troops and equipment. Chart 3-3 shows the Army's armored carrier asset position projected through FY 1986.

CHART 3-3

U.S. ARMORED CARRIER ASSETS



(a) M113 Series Armored Personnel Carriers

Procurement of the Turret Modification Kits for the M901 Improved TOW Vehicle will be completed in FY 1981. Existing M113 personnel carriers are undergoing three vehicle improvement modification programs: dieselization, improved suspension, and improved cooling.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Modification:				
$ Millions	35.1	32.0	30.4	33.0

(b) IFV/CFV (formerly MICV)

The Infantry/Cavalry Fighting Vehicle (IFV/CFV) will replace the M113A1 in mechanized, tank, and cavalry units. Its main armament consists of the TOW anti-tank missile and a 25mm automatic dual-feed cannon (BUSHMASTER). Its introduction permits these units to engage armored vehicles effectively while improving their battlefield survivability and mobility. The IFV will carry nine men, and the CFV will carry five. We expect delivery of the first vehicles in May 1981.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	34.6	42.1	57.9	45.4
Procurement:				
Quantity	100	300	464	427
$ Millions	226.4	469.2	693.1	652.0

(c) LVT

Beginning in 1982, the Marine Corps plans to procure the first increment of 329 additional amphibious assault vehicles (product-improved version) to support wartime prepositioning requirements. Concurrently, the Marine Corps will continue a service life extension program to increase the operational reliability, maintainability, and durability of its current LVT-7 fleet.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Procurement:				
Quantity	--	--	30	118
$ Millions	--	8.0	52.0	106.3
Modification:				
Quantity	--	25	393	379
$ Millions	10.5	32.5	178.6	159.7

(d) Light Armored Vehicle (LAV)

In 1982, the Marine Corps plans to initiate procurement of light armored vehicles to provide increased ground mobility and firepower for the forces.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	--	9.4	47.4	27.8
Procurement:				
Quantity	--	--	72	108
$ Millions	--	--	37.2	65.2

(3) Anti-Armor Weapons

TOW

In 1982, the Army and Marine Corps plan to procure the TOW anti-tank missile with an improved warhead and guidance system. Concurrently, existing missiles will be retrofitted with improvements. The improved version of the TOW system will be capable of defeating the advanced technology armor.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Procurement:				
Quantity	6,260	12,000	12,000	12,000
$ Millions	28.7	81.1	99.1	100.1
Modification:				
$ Millions	25.6	106.1	110.3	58.9

(4) Tactical and Support Vehicles

(a) High Mobility Multipurpose Wheeled Vehicle (HMMWV)

The Army, Marine Corps, and Air Force will begin selective replacement of tactical vehicles in the 1/4-ton to 1 1/4-ton range with the HMMWV. This single family of 1 1/4-ton vehicles will have a common chassis with derivative configurations that will satisfy the functional needs of combat, combat support, and combat service support missions. A lightly armored version will replace the current TOW carrier in light infantry forces.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	1.3	2.8	3.1	2.8
Procurement:				
Quantity	--	--	656	2,912
$ Millions	--	--	20.1	73.7

(b) Heavy Expanded Mobility Tactical Truck (HEMTT)

The Army plans to continue procurement of a new series of 10-ton tactical trucks for use in a variety of combat and combat support units. The family of vehicles includes cargo, POL tanker, tractor, and wrecker versions, and will support the Multiple Launch Rocket System (MLRS) and PATRIOT and PERSHING II missile systems.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Procurement:				
Quantity	10	284	379	677
$ Millions	2.6	54.7	69.4	132.1

b. Helicopters

The helicopter provides an added degree of mobility and firepower to our land forces. Improved technology and materials have increased helicopter power-to-weight ratios and have reduced vulnerability. However, the

intensity of the modern battlefield still calls for special tactics to minimize combat losses. The primary objective of our helicopter programs is to modernize our force of attack and transport helicopters.

(1) COBRA-TOW (AH-1S)

The AH-1S, armed with the TOW anti-armor missile, is the current attack helicopter system. This fleet has been formed by procuring new AH-1Ss and modifying AH-1G gunships. Funds were provided in FY 1981 both to complete the new production program and to continue the conversions. A fleet of 1000 AH-1Ss is now projected to be completed in FY 1983. At that time there will be a residual of approximately 60 AH-1Gs. Current plans do not envision converting these airframes.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	.9	8.5	20.1	8.6
Procurement:				
Quantity	12	17	--	--
$ Millions	29.5	44.5	--	--
Modification:				
$ Millions	276.4	124.5	36.0	133.3

(2) UH-60A BLACKHAWK

BLACKHAWK was designed to replace the UH-1 (HUEY) in selected combat support, air cavalry, and aeromedical evacuation units. The planned Army buy of 1,107 helicopters may be reduced due to cost growth. BLACKHAWK entered the force in November 1979.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	2.3	5.0	4.2	3.1
Procurement:				
Quantity	94	71	78	90
$ Millions	380.7	412.3	463.7	462.2

(3) Advanced Attack Helicopter (AH-64)

The AH-64 advanced attack helicopter is being developed as the Army's attack helicopter of the future. This highly capable weapon system will have a day/night, adverse weather capability and will be able to operate in severe climatic conditions. The AH-64 will be armed with a 30mm gun, 2.75" rockets, and the HELLFIRE missile system. The Army program calls for procurement of 536 AH-64s. FY 1982 funds will initiate production.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	176.0	172.9	94.0	--
Procurement:				
Quantity	--	--	8	44
$ Millions	--	50.8	365.5	554.1

(4) HELLFIRE Missile System

HELLFIRE is a helicopter-fired anti-tank missile system designed for use on the AH-64. The weapon has a semi-active laser seeker designed to home on laser-illuminated targets. It represents a significant improvement over the TOW missile in speed, range, and lethality. Production will begin in FY 1981.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	61.0	45.0	24.8	19.7
Procurement:				
Quantity	--	--	502	1,213
$ Millions	--	21.0	96.5	120.7

c. Air Defense

Our air defense of ground forces must ensure that ground elements have freedom of maneuver, that all critical elements of combat power are preserved, and that key combat support resources located throughout the battlefield

are protected. Air defense requires a balanced mix of complementary weapons (i.e., guns and missiles of complementary capabilities) to defeat the growing number of improved-capability hostile aircraft, helicopters, remotely piloted vehicles, and missiles, and to complicate the enemy's tactical planning and execution. Our weapon systems must have mobility commensurate with the demands of a dynamic combat environment. Air defense fire units must be capable of massing to protect priority assets.

(1) STINGER

STINGER, a man-portable system now in production, will soon begin to replace REDEYE. In addition, an improved seeker will be fielded.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	18.8	5.9	4.3	4.5
Procurement:				
Quantity	2054	1703	2535	2782
$ Millions	89.4	90.1	162.2	216.3

(2) DIVAD Gun

The Army plans to equip 11 active divisions with the DIVAD day/night, track-mounted air defense gun to protect the armored and mechanized forces from attack by armed helicopters and high performance aircraft.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	25.7	65.2	30.6	--
Procurement:				
Quantity	--	--	--	24
$ Millions	--	140.0	100.0	194.4

(3) CHAPARRAL

CHAPARRAL, the short-range air defense missile organic to most of the Army active divisions, will remain in service into the 1990s. Procurement funds are provided to replace those rocket motors reaching the end of their

shelf-life and to modify the CHAPARRAL system with forward-looking infrared (FLIR) to allow engagement of targets at night. Development funding is provided for a guidance system with high resistance to infrared countermeasures.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	6.1	23.2	20.1	14.6
Procurement:				
Quantity	--	--	--	--
$ Millions	3.2	44.4	4.4	4.5
Modifications:				
$ Millions	16.1	39.4	61.9	3.7

(4) Improved HAWK

Developments designed to improve the capability of HAWK systems to operate effectively in an environment of enemy electronic countermeasures (ECM) continue. Funds are also provided for replacement missile motors, RAM, and system performance modifications.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	9.9	7.9	30.2	38.6
Procurement:				
Quantity	197	--	--	--
$ Millions	32.5	30.1	20.3	29.1
Modification:				
$ Millions	71.6	31.3	24.1	50.5

(5) PATRIOT

PATRIOT is a mobile long-range system capable of conducting multiple simultaneous engagements.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	128.7	52.0	32.6	33.0
Procurement:				
Quantity	155	130	130	377
$ Millions	396.0	448.7	486.1	678.6

(6) ROLAND

ROLAND is an all-weather, short-range system designed for use against low-altitude targets. FY 1982 and FY 1983 funds will complete the production program and will continue government in-house and contractor logistics efforts in support of training base and initial unit deployment requirements.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	11.3	12.8	--	12.4
Procurement:				
Quantity	410	400	--	--
$ Millions	299.7	413.3	65.0	60.0

(7) RAPIER

RAPIER is a United Kingdom-designed all-weather, short-range air defense system. Funds are provided to procure RAPIER fire units for defense of seven U.S. bases in the United Kingdom. We will procure the system and pay for contractor maintenance and spares. The United Kingdom will pay for manning and training of the units. The exact number of units to be procured has not yet been determined.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Procurement:				
Quantity	--	--	TBD	TBD
$ Millions	--	90.0	95.2	142.3

d. Artillery Fire Support

The Soviets have made considerable improvements in their artillery systems, surface-to-surface tactical missiles and rockets, and associated target acquisition and fire control systems. Soviet doctrine calls for significant support of ground maneuver, with high concentrations of indirect fire. Our ground forces are generally outgunned by Soviet artillery. Planned artillery acquisition is aimed at redressing this imbalance.

(1) Multiple Launch Rocket System (MLRS)

MLRS is a high-rate-of-fire general support artillery rocket system to supplement cannon artillery fire. MLRS is planned to be operational in FY 1983.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	70.2	65.6	39.1	34.1
Procurement:				
Quantity	1,374	2,340	2,496.3	25,968
$ Millions	61.9	115.2	184.0	410.9

(2) M109A2 Howitzer

We are procuring additional M109A2 self-propelled 155mm howitzers, the mainstay of U.S. artillery. These weapons will be used to improve the capability of our forces in Europe and CONUS.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Procurement:				
Quantity	96	--	--	--
$ Millions	45.6	--	--	--

(3) M198 Howitzer

The M198 155mm towed howitzer will replace the M114A1 155mm towed howitzer currently used in direct support battalions in infantry and Marine divisions and active force corps artillery. It will also replace the M101A1

and M102 105mm towed howitzers now used in direct support battalions of infantry and Marine divisions and separate brigades. The M198 has 50 percent greater range and better reliability than the existing M114A1.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Procurement:				
Quantity	74	120	109	--
$ Millions	21.8	38.2	40.6	--

(4) COPPERHEAD

COPPERHEAD is a 155mm laser-guided projectile designed to improve the capability of artillery against armored targets. IOC is scheduled for FY 1982.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding
Development:			
$ Millions	9.0	6.1	3.4
Procurement:			
Quantity	2,100	4,300	4,729
$ Millions	71.2	122.1	127.5

(5) Ground Laser Locator Designator (GLLD)

GLLD is a laser range-finder that illuminates/designates targets for COPPERHEAD and other guided projectiles, laser-guided bombs, and HELLFIRE.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	3.6	--	--	--
Procurement:				
Quantity	80	90	120	120
$ Millions	26.5	21.1	46.8	33.4

(6) Modular Universal Laser Equipment (MULE)

MULE is a precision laser designator/range-finder that illuminates/designates for all surface and air-delivered laser-guided projectiles. The system has a North-Finding capability.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Procurement:				
Quantity	--	--	57	81
$ Millions	--	--	21.3	21.5

(7) Target Acquisition

The Standoff Target Acquisition System (SOTAS) is under development. It will allow us to locate moving targets using a radar mounted in an H-60 helicopter. In addition, remotely piloted vehicles are being developed to locate targets, adjust artillery fire, and designate targets for laser-guided weapons.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	115.9	110.3	131.2	113.7

(8) Fire Control

The Advanced Field Artillery Tactical Data System will improve the current TACFIRE system, in order to maintain its effectiveness into the 1990s. Initial efforts will improve TACFIRE communications management and will be followed by improvements to the remote devices at the forward-observer and fire-support officer locations. The third phase will reduce the size and weight of the Fire Direction Center. Another improvement in the fire support area is the Battery Computer System, now in early procurement. This small computer provides firing data for individual guns in a battery, thus enhancing battery survivability by enabling optimal use of protective terrain.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	--	3.6	6.1	12.2
Procurement:				
$ Millions	14.6	36.2	46.7	29.8

(9) Marine Integrated Fire and Air Support System (MIFASS)

MIFASS is a system to control and coordinate air, naval gunfire, artillery, and mortar assets employed in support of maneuver element commanders.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	14.5	13.7	7.2	2.5
Procurement:				
Quantity	--	--	--	--
$ Millions	--	--	--	--

e. Artillery Ammunition

Ammunition procurement in FY 1982 will continue building our inventories of improved conventional munitions (ICMs), rocket-assisted projectiles (RAPs), propelling charges for the new long-range weapons, and scatterable mines. A total of $591.7 million is requested for FY 1982 to procure these items for 155mm and 8-inch artillery. This amount includes the following items:

Type Round	USMC		Army	
	$ Millions	Quantity	$ Millions	Quantity
155mm improved conventional munitions	39.2	76,000	104.6	233,000
155mm rocket-assisted projectiles	38.5	51,000	21.5	30,000
155mm scatterable mines	11.6	5,000	133.6	41,000
155mm propelling charges	10.9	72,000	79.9	554,000
8-inch propelling charges	2.9	22,000	30.9	106,000
8-inch rocket-assisted projectiles	9.4	6,000	45.9	31,000
8-inch improved conventional munitions	2.7	2,000	60.1	46,000

f. Chemical Warfare (CW) and Nuclear, Biological, and Chemical (NBC) Defense

Our CW planning places primary emphasis on the protection of our forces. The program for development of protective equipment includes improved individual clothing, therapy, and prophylaxis against chemical agents, as well as improved decontamination equipment, collective protection for vehicles and shelters, CW agent detection devices, and training systems.

Bilateral negotiations with the Soviet Union, which began in 1977, continue toward the goal of a comprehensive, verifiable agreement. In the absence of adequate agreement with the Soviets to eliminate the threat of chemical warfare, and in view of the improving Soviet CW capabilities, we must also maintain a credible chemical warfare retaliatory capability to ensure that there are no real or perceived advantages to the Soviets in initiating a chemical attack. Towards this end, we are requesting $5.3 million in FY 1982 for maintenance of the deterrent stockpile. In addition, $3.2 million in MILCON funding provided in FY 1981 permits us to retain the option to construct a binary-agent munition facility. (A binary munition consists of two chemical agents that are of low toxicity as long as they remain separated, but become lethal when combined. These agents would be mixed and become effective during the munition delivery phase.)

g. Tactical Communications, Signal and Electronics Intelligence

(1) Ground Mobile Forces (GMF) Satellite Communications

The GMF program is designed to improve communications link reliability and to minimize the effects of terrain on tactical communications. The Army, Air Force, and Marine Corps will procure several hundred of the various types of transportable terminals, as well as supporting equipment.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development: $ Millions	15.1	10.8	15.6	26.5
Procurement: $ Millions	35.2	81.0	75.1	79.3

(2) Joint Tactical Communications Program (TRI-TAC)

Under the TRI-TAC program, all the Services are procuring interoperable and standardized tactical communications systems that are more reliable, less susceptible to intercept, and more rapidly deployable than existing equipment.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development: $ Millions	104.0	71.6	106.5	123.4
Procurement: $ Millions	50.0	133.9	196.9	227.3

(3) Single Channel Ground and Airborne System VHF (SINCGARS-V)

The SINCGARS-V program will provide secure, electronic counter-countermeasures (ECCM) capable VHF radios to replace current vehicular, manpack, and aircraft tactical VHF radios. Some 200,000 radios are to be procured for all Services at an estimated cost of $1.07 billion.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development: $ Millions	20.5	15.7	15.5	9.1
Procurement: $ Millions	--	--	--	13.6

(4) Intelligence (SIGINT) Sensors

The Army is currently deploying a new ground-based SIGINT sensor, the AN/MSQ-103 TEAM PACK. This sensor is a mobile non-communications collection system that will be organic to the Combat Electronics Warfare and Intelligence (CEWI) units in Army divisions.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development: $ Millions	1.0	1.6	2.2	4.7
Procurement: $ Millions	18.0	23.9	5.5	--

(5) Electronic Combat Jamming Systems

Additional track-mounted MLQ-34, TACJAM, VHF communications jammers will be provided to deployed divisions for disruption of enemy combat communications. Low-cost, jeep-mounted "Applique Jammers" are projected to augment Army jamming capability. The Army has requested $11 million to procure ALQ-136 jammers.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Procurement:				
$ Millions	21.4	62.7	46.8	--

III. CONCLUSION

The initiatives and programs described in this Chapter are all intended to improve our land forces; the measures by which we evaluate this improvement may vary: increased firepower, improved sustainability in combat, greater responsiveness, or improved weapons effectiveness. These initiatives are competing for the finite resources available for the manning, equipping, training, and sustaining of our land forces. Our goal is to balance these programs in a way that produces the most effective credible force possible. I believe that our efforts are bearing fruit.

CHAPTER 4

NAVAL FORCES

I. BASIS FOR PLANNING

Strong and balanced Navy forces are essential to our national defense posture. The proposed program strikes a balance among enhancement of near-term readiness, maintenance of adequate force levels, and fleet modernization that will ensure the effectiveness of our forces in the future. Our Navy remains the best in the world.

A. Programmed Force Levels

1. Changes in Fleet Size

The fleet today numbers about 540 ships--including active, reserve, and naval fleet auxiliary forces. While that represents about half the number of ships the Navy deployed ten years ago, the drop in tonnage is far less (about 20 percent) because larger, more capable ships have replaced smaller, individually less capable ships. Based on the Navy's current force projections, which reflect both best estimates for new-ship deliveries and retirement dates for individual ships through the mid-1980s, we expect the total operating forces to grow to about 590 ships by 1985 and remain at roughly that level through 1990.

2. Carrier Battle Groups

Construction of CVN-71 and the carrier service life extension program (SLEP) will permit the United States to maintain an inventory of 12 modern carriers in active status through the turn of the century. To maintain a sustained presence in the Indian Ocean, we have decided to preserve the USS CORAL SEA as a routinely deployable carrier for at least the next several years.

3. Amphibious Forces

Our amphibious forces are currently capable of lifting the assault echelon for 1.15 Marine Amphibious Forces (MAFs), of responding to simultaneous contingencies in the Atlantic and the Pacific with Marine Amphibious Brigade-sized forces, and of maintaining three forward-deployed battalion-sized Marine units and a fourth intermittently.

4. Surface Combatants

We buy a mix of surface combatants in order to remain responsive to a wide range of threats: cruisers and destroyers to operate with carrier battle groups and other elements in higher-threat areas, frigates to protect convoys and other groups of ships that will operate in areas where the threat is less severe.

5. Underway Replenishment (UNREP) and Support Forces

The majority of our UNREP ships support carrier battle groups. Therefore, decisions affecting the number of carriers would have a proportional

effect on the UNREP force structure. For the foreseeable future, the trend toward civilian-crewed UNREP ships assigned to the Military Sealift Command (MSC) can be expected to continue.

6. Attack Submarines

The current program will result in a force of more than 90 nuclear-powered attack submarines by FY 1984. They will accomplish anti-submarine warfare (ASW) barrier and sea denial roles, as well as other missions (including employment in forward areas and the provision of direct support to carrier battle groups).

B. Force Structure

The U.S. General Purpose Naval Forces for FY 1981 and FY 1982 are summarized in Table 4-1.

TABLE 4-1

Naval General Purpose Ship Force Levels 1/
(End FY 1981 and FY 1982)

	Active Fleet		Naval Reserve Force		Naval Fleet Auxiliary Force		Total Ship Operating Force	
	FY 81	FY 82	FY 81	FY 82	FY 81	FY 82	FY 81	FY 82
Aircraft Carriers	12	13					12	13
Surface Combatants								
Cruisers	27	27					27	27
Destroyers	82	84	9	5			91	89
Frigates	79	84		4			79	88
Submarines								
Nuclear Attack 2/	82	91					82	91
Diesel	5	3					5	3
Patrol Combatants	1	6					1	6
Amphibious Warfare Ships	59	60	6	6			65	66
Mine Warfare Ships	3	3	22	22			25	25
Mobile Logistic Ships	56	56	2	2	15	14	73	72
Fleet Support Ships	15	15	6	6	19	19	40	40
Other Ships 3/	7	6	—	—	—	—	7	6
TOTAL	428	448	45	45	34	33	507	526

1/ Includes all ships other than those assigned to strategic and mobility forces programs.
2/ Includes ex-POLARIS SSBNs converted to SSNs.
3/ Includes miscellaneous auxiliaries and combatants.

In addition to the ships listed in Table 4-1, another 79 ships have been authorized by Congress but will not be delivered prior to the end of FY 1981:

TABLE 4-2

General Purpose Forces Ships Authorized but not Delivered Prior to the End of FY 1981

Aircraft Carriers	2
Destroyers	3
AEGIS Guided Missile Cruisers	4
Guided Missile Frigates	31
Amphibious Ships	1
Nuclear-Powered Attack Submarines	20
Auxiliaries*	15
Patrol Combatants	3
TOTAL	79

* Includes eight TAGOS ocean surveillance ships.

The average age of the active fleet will be 14.6 years at the end of FY 1981. The average age for selected categories of ships is shown in Table 4-3.

TABLE 4-3

Average Age of the Active Fleet (End FY 1981)

Aircraft Carriers	20.3
Cruisers	14.2
Destroyers	14.0
Frigates	9.7
Nuclear-Powered Attack Submarines	12.2
Amphibious Ships	14.5
Mine Warfare Ships	26.8
Auxiliaries	19.8

Aircraft are key elements of our integrated ASW defenses. Equipped with modern sensors and weapons, they are highly effective against today's threat.

TABLE 4-4

ASW Squadrons
(End FY 1982)

	Active	Reserve	Total
P-3	24	13	37
S-3	11	--	11
SH-3	11	--	11
LAMPS MK I	6	--	6

C. Objectives for FY 1982-1986

The main naval force objectives in the five-year defense program are:

-- improving fleet readiness, air defense capabilities, and anti-submarine warfare capabilities;

-- maintaining forces for worldwide presence and crisis management;

-- strengthening offensive striking power and sustainability; and,

-- upgrading mine warfare posture.

II. PROGRAM DESCRIPTION

A. Improving Fleet Air Defense Capabilities

To meet the growing Soviet threat, we will continue the procurement of CG-47 class ships with the AEGIS weapon system, the procurement and installation of improved self-defense systems, and the backfit of improved anti-air warfare (AAW) systems on existing cruisers and destroyers. Programmed improvements for E-2C early warning aircraft and the PHOENIX air-to-air missile weapon system are essential to keep pace with the increased threat. 1/

1. AEGIS Ships

The current five-year defense program includes procurement of 16 CG-47 class ships with AEGIS, which will give us 20 AEGIS ships by 1990. AEGIS, with phased-array radar and automated control systems, will substantially increase the air defense firepower of our carrier battle groups against coordinated BACKFIRE raids and anti-ship missile saturation attacks. Because of the importance of AEGIS

1/ Carrier-based aircraft and their contributions are covered in Section II, Chapter 5, Tactical Air Forces.

to fleet air defense, we already have initiated several product improvements, such as the new Vertical Launch System, that will improve AEGIS' engagement rate, launcher reliability, and mission flexibility.

2. CG and DDG Modernization

To increase our air defense capability against the projected ASM saturation threat, we are modernizing existing cruisers and destroyers. These include conversion of TERRIER cruisers to the SM-2 missile and the follow-on New Threat Upgrade Program for both TERRIER and TARTAR cruisers and DDG-993s.

3. DDGX

As a follow-on to the modernized CGs and DDGs, we are examining a new class of surface combatant, the DDGX. We are conducting studies to define the best design of the ship and AAW weapon system. The current shipbuilding program specifies a 1986 start for the DDGX.

4. Self-Defense Systems

The modernization of surface ship self-defense will continue in FY 1982 with procurement and installation of the PHALANX Close-in Weapon System; installation of the NATO SEA SPARROW Missile System (NSSMS) on carriers, DD-963s, and mobile logistic support ships; and installation of the AN/SLQ-32 electronic warfare system. The improved SEA SPARROW missile (RIM-7M) is also programmed for backfit in NSSMS installations.

The AN/SLQ-32 electronic countermeasures equipment is now installed in combatant ships. We are requesting funds to develop modifications that will increase its capabilities in area electronic warfare. We also have requested funds to develop countermeasures to increase protection against anti-ship missiles.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
AEGIS-Armed Cruisers				
$ Millions	820.2	1768.2	2144.4	2112.3
Continued Development of AEGIS Ship Air Defense System				
$ Millions	53.2	37.7	51.1	46.9
Procurement of STANDARD Missiles				
$ Millions	192.5	309.4	460.5	586.5

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Procurement of PHALANX Close-in Weapons System (CIWS)				
$ Millions	126.1	151.9	167.2	144.9
Procurement of SEA SPARROW Missiles (RIM-7M)				
$ Millions	5.1	25.6	61.9	104.9

B. Improving Anti-Submarine Warfare Capabilities

We have maintained our technological lead in ASW over the Soviets. However, the recent emergence of several new classes of Soviet submarines (the ALFA class among them) indicates that we must pursue a broad range of initiatives to ensure our superiority. The most important ASW programs are listed below.

1. ASW Surveillance Systems

Our fixed underwater surveillance systems make use of modern technology to improve their already impressive capabilities.

Mobile surveillance systems provide needed tactical and strategic flexibility at relatively low cost. We have released funds for construction of the first three TAGOS SURTASS ships. Funds for five additional ships were appropriated in FY 1981. We are requesting authorization to construct four more towed array ships in FY 1982, and another six over the remainder of the FYDP period.

2. Attack Submarine Programs

Despite Soviet developments in this area, our submarines, particularly the LOS ANGELES (SSN-688) class attack submarines, remain the finest attack submarines in the world today. Congress has authorized construction of 37 688-class nuclear submarines, and we are requesting six more in the FY 1982 Five-Year Shipbuilding Program.

Our sensors and weapons have been a major factor in maintaining our tactical edge over the Soviets. We have started development of a Submarine Advanced Combat System (SUBACS), which includes new sensor and weapon control systems and advanced computer hardware and software that will integrate existing and proposed equipment. The SUBACS will go to sea in new construction submarines and will be designed so it can backfit into our LOS ANGELES class submarines.

Last year I discussed the need to develop a lower cost, capable attack submarine to maintain a submarine fleet of the size we desire. In order to evaluate the competing designs more fully, we are requesting that authorization for a new class submarine be delayed from FY 1983 to FY 1985. Meanwhile, we will continue to incorporate those features that reduce construction costs on our SSN-688s.

We will continue to pursue a building policy that, together with the SSBN construction program, will maintain two nuclear submarine shipbuilding sources.

3. Maritime Patrol Aircraft (P-3s)

The combination of P-3s and undersea surveillance systems provides the Navy with its most effective rapid-response system for area ASW, particularly prior to hostilities. In addition, P-3s equipped with HARPOON missiles provide a highly effective, rapidly employable method of attacking Soviet surface ships.

We will continue P-3C production at a reduced rate of six per year, pending restructure of the longer-term modernization program for the force. A recent Navy study concluded that, with adequate overseas basing, the P-3 would be more cost-effective than a new-design Long-Range Air Anti-Submarine Warfare System, if current missions are retained. Therefore, the long-term modernization of the current force will focus primarily on P-3 airframe/avionics options to take advantage of the open production line. However, our longer-range plans in this area are not yet firm.

To provide occasional surveillance in remote areas, the Navy has initiated a program to provide an inflight refueling capability for P-3Cs. The Navy has reprogrammed $6.3 million in FY 1980 funds to start the program.

4. Surface Warship Tactical Towed Array Sonar (TACTAS)

The most important surface ship ASW development in a generation is the advent of tactical towed array sonars (TACTAS). With procurement funding completed in FY 1981, the SQR-18A is midway through its backfit onto 35 Knox-class (FF-1052) ships. TACTAS' long-range acoustic detection performance will enhance our ASW capabilities by providing increased ranges of detection.

An advanced TACTAS, the SQR-19, is in engineering development and is intended for installation on SPRUANCE, OLIVER HAZARD PERRY, TICONDEROGA, and KIDD class ships. The SQR-19 represents a substantial improvement in surface ship ASW capability over the SQR-18A.

5. LAMPS

Our studies, confirmed by development testing, continue to indicate that the LAMPS MK III system, now designated the SH-60B, is needed to exploit fully the long-range detections predicted for the SQR-19 tactical towed array sonar. The LAMPS MK III system is in full development with an IOC of FY 1984, and all five prototype test vehicles are now flying. Full weapon system operational tests will

begin in early 1981. Due to recent program cost measures and resulting affordability problems, we have requested funds in the FY 1982 budget to procure the first eight production SH-60Bs rather than the 18 units previously planned. We still plan, however, to retain a total program of 204 helicopters.

6. Torpedo Programs

a. MK-46

Because the existing MK-46 torpedo will not meet the submarine acoustic and countermeasures threat through the early 1980s, we have budgeted for a new version called the Near-Term Torpedo Improvement Program (NEARTIP). By procuring both new torpedoes and modification kits to convert older MK-46s to NEARTIP versions, we will rapidly improve our lightweight torpedo capability.

b. Advanced Lightweight Torpedo (ALWT)

We have requested funds to continue advanced development for a new torpedo, the ALWT.

c. MK-48

We have a two-part program to upgrade our MK-48 submarine-launched torpedo by expanding its operating envelope and improving the torpedo's capabilities.

d. ASW Standoff Weapon

The ASW Standoff Weapon will replace the aging SUBROC system. It will be used to attack enemy submarines operating outside the effective range of the MK-48 torpedo.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Procurement of SSN-688 Class Nuclear Attack Submarines				
$ Millions	849.3	1059.0	642.9	719.0
Procurement of P-3 Patrol Aircraft (including HARPOON backfits)				
$ Millions	221.4	322.1	323.4	400.2

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Procurement of SH-60 Light Multi-Purpose Systems				
$ Millions	--	106.5	636.8	1083.7
Procurement of SQR-18 Towed Array Sonar Back-fit Program, SQR-19 Towed Array Sonar Development				
$ Millions	22.7	8.9	10.4	--
Development of ASW Standoff Weapon (SOW)				
$ Millions	7.0	19.3	25.5	51.0
Acquisition and Conversion of MK-46 ASW Torpedoes				
$ Millions	99.4	62.1	88.5	95.5
Procurement of MK-48 ASW Torpedoes, Procurement of ADCAP Modification kits				
$ Millions	118.5	102.0	26.1	87.4
Development of Advanced Lightweight Torpedo (ALWT)				
$ Millions	60.0	80.7	83.1	77.5
Procurement of SURTASS				
$ Millions	34.8	196.0	175.5	149.4
Development of Improved SOSUS (Sound Ocean Surveillance System)				
$ Millions	46.2	59.0	59.0	66.3

C. Improving Offensive Capabilities

The Navy also is pursuing a number of initiatives that will improve our capabilities in anti-surface ship warfare and will enhance our offensive power.

1. TOMAHAWK Cruise Missile

The TOMAHAWK cruise missile will enable our forces to strike naval targets on land as well as at sea and will allow our surface and submarine units to carry the fight to the enemy over long distances. The Navy plans to procure TOMAHAWK in both the anti-ship and land-attack variants, and it will be deployed on both surface ships and submarines.

2. HARPOON

We will continue to procure and to deploy the HARPOON anti-ship missile. The HARPOON missile provides our forces with a highly effective standoff capability against enemy combatant and merchant ships.

3. Gun Developments

Conventional gun projectiles can attack many targets less expensively than missiles. But the successful employment of naval guns requires precise fire control radar tracking. We are pursuing two programs to improve our current deficiencies in this area.

a. SEAFIRE

We have requested funding to continue development in FY 1982 of the SEAFIRE electro-optical fire control system, which allows target detection by magnified television and by infrared thermal imaging.

b. Guided Projectiles

To increase the accuracy of our guns and to reduce the number of missed rounds, we have requested funding for advanced development of 5-inch semi-active laser-guided projectiles (SAL GP). The SAL GP will exceed the ranges of current 5-inch projectiles and will achieve improved accuracy. SEAFIRE's laser range-finder will be fully compatible with the SAL GP.

4. Ocean Surveillance and Over-the-Horizon (OTH) Targeting Support

As the Soviets continue to deploy systems employing long-range, high-speed standoff weapons, the need for precise and timely location information about threats has become more acute. We are concentrating our efforts on surveillance sensor integration to provide our forces with the information they need.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Procurement of TOMAHAWK Missile				
$ Millions	30.2	191.8	128.1	187.6
Procurement of HARPOON Anti-Ship Missile				
$ Millions	151.0	221.7	232.0	222.7
Development of SEAFIRE Electro-Optic Fire Control System				
$ Millions	10.9	10.7	17.8	17.0
Development of Laser-Guided Projectiles				
$ Millions	11.0	21.1	3.3	.8

D. Forces for Worldwide Presence and Crisis Management

1. Carrier Battle Groups

The two-carrier battle groups we are maintaining in the Indian Ocean area have been provided through a drawdown of forces in other areas. However, we will continue the policy of distributing our forward-deployed naval forces as necessary to protect U.S. interests.

2. Amphibious Programs

By the end of this century, all of the landing craft and most of the amphibious ships currently in use will reach the end of their service lives. To hedge against this block obsolescence, we are developing programs to enable us to continue to meet our objective of lifting the assault echelon for 1.15 Marine Amphibious Forces (MAFs).

We have requested funds to start procurement of the Landing Craft Air Cushion (LCAC). LCAC will provide high-speed ship-to-shore capability, will increase, by a factor of four, the amount of coastline accessible to landing troops, and will reduce the vulnerability of amphibious ships by letting them launch from beyond the range of most shore-based defenses.

We are requesting funding for three LCACs in FY 1982. Final force level decisions, however, will depend on test results, refined cost estimates, and the findings of the ongoing assessment of our total amphibious capability.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Procurement of Aircraft Carriers (CVN)				
$ Millions	2102.0	5.8	20.4	1.0
Development and Procurement of Air Cushion Landing Craft (LCAC)				
Development: $ Millions	16.4	16.6	5.3	5.3
Procurement: $ Millions	--	42.0	76.1	88.8
Procurement of LSD-41				
$ Millions	41.0	356.7	1.5	3.3

E. Escort and Support Forces

1. Surface Combatants

Surface combatant force levels are expected to increase until the mid-1980s because of the deliveries of the DD-963, DDG-993, and the FFG-7 class warships. However, the DD-931/945 and the DDG-31 classes are all scheduled for retirement during the middle and late 1980s; the DDG-2, DDG-37, FF-1040/1052, and CG-16/26 classes will begin to reach the end of their expected service lives in the 1990s. Projected block retirements of these older classes will require continued new ship construction to prevent a serious reduction in our surface combatant force capabilities by the early 1990s.

Because of the growing complexity and costs of our new ships, a mix of both highly capable, more expensive ships (CG-47) and moderately capable, less expensive surface combatants (FFG-7) is being requested. The DDGX, which is to be capable of operating in a carrier battle group and is planned to augment the CG-47, is scheduled for initial authorization in FY 1986. When introduced, the DDGX, together with the CG-47, DDG-993, and DD-963 classes, is expected to provide an effective response to the projected Soviet threat.

a. USS OLIVER HAZARD PERRY Class Guided Missile Frigates (FFG-7)

Authorization of funding for an additional FFG-7 is requested in FY 1982. This program is required for sea lane defense as well as other operations in ocean areas where the threat is less concentrated.

b. USS SPRUANCE Class Destroyer (DD-963)

The 31-ship, DD-963 class destroyer program is nearing completion. The last ship of this class is scheduled for completion in FY 1983. We plan to equip the DD-963 class ships with the SQR-19 TACTAS and LAMPS III systems to increase their ASW effectiveness.

c. New Class Frigate (FFX)

We are continuing to work on the design of a new ASW frigate (FFX). However, the scheduled development of the first ship has slipped to FY 1984 because of lack of progress in ship definition. This less costly ship should be able to augment the FFG-7 in low-threat areas. We currently plan to buy the FFX to strengthen our Naval Reserve.

2. Underway Replenishment and Support Ships

The Navy continues to face a serious underway replenishment and support ship aging problem despite several new construction programs. About 41 of these ships are over 25 years old.

a. Fleet Oilers

The greatest UNREP shortfall is in fleet oilers. These ships carry fuel to the multi-product ships that maintain station with the carriers. USS CIMARRON (AO-177) was commissioned in January 1981. Four more fleet oilers in this class are expected to be commissioned before the end of FY 1982. We are now planning to buy seven fleet oilers (T-AOs) in the FY 1982-1986 period, to be manned by Military Sealift Command personnel. The first T-AO is being requested in FY 1982.

b. Salvage Ships

Last year we added four salvage ships (ARS) to the shipbuilding program, with the lead ship scheduled for delivery in FY 1984. This year a fifth has been added, and we are requesting funds for the second and third ships. These ships will incorporate required new habitability and environmental upgrades. Combined with the three salvage and rescue ships, these ARSs will provide a force sufficient to maintain one ship continuously forward-deployed in the Mediterranean and an other in the Western Pacific.

c. Cable Ships

When the T-ARC cable ship approved in the FY 1979 program is delivered in FY 1983, the Navy will have three cable repair ships. Eventually, we will need at least two more. An additional T-ARC is programmed in FY 1986 in the five-year shipbuilding plan.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Procurement of Guided Missile Frigates (FFG-7)				
$ Millions	1071.7	1578.0	576.1	64.4
Development of Frigates (FFX)				
$ Millions	--	--	15.6	11.6
Procurement of Fleet Support Ships				
$ Millions	141.7	118.1	377.1	99.8
Conversion of Ships for Fleet Support				
$ Millions	--	--	30.0	413.5

F. Mine Warfare Programs

As the Soviet Union's seagoing capability has expanded, so has our interest in employing mine warfare to exploit the geographical barriers confronting the Soviets. Additionally, to counter the significant Soviet offensive mining capability, we are developing cost-effective mine countermeasure forces that include new ship and helicopter designs capable of clearing ports, major sea lines of communication, and amphibious operating areas.

1. Mines

Offensive mines provide a means of sea control that can be exerted close to port entrances, in geographic chokepoints, or in open ocean barriers to deter surface ship or submarine movement. Three mine types constitute the future family of U.S. offensive mines.

a. QUICKSTRIKE -- Four types of shallow-water bottom-mines;

b. Submarine-Launched Mobile Mine (SLMM) -- A shallow-water bottom-mine, for covert deployment by submarines, that employs a converted torpedo; and

c. CAPTOR ASW Mine -- A deep-water ASW mine designed to launch the MK-46 lightweight acoustic homing torpedo at a submerged submarine. CAPTOR procurement has been at a low level since FY 1976, while development and testing

were conducted to correct performance deficiencies. Procurement funds were not requested in the FY 1981 budget because test results showed that CAPTOR failed to provide the high level of effectiveness we had sought. Subsequent testing has demonstrated that recent modifications have corrected its performance deficiencies. The FY 1982 budget requests money to continue production of CAPTOR.

2. Mine Countermeasure (MCM) Forces

The three active ocean minesweepers (MSOs) and 22 Naval Reserve Force MSOs are reaching the end of their service lives. Part of the MSO shallow-water capability is being assumed by mine countermeasure helicopters, seven of which were lost in the Iran rescue mission. To deal more effectively with the Soviet deep-water mine threat, we have placed in the five-year shipbuilding plan 13 MCM ships incorporating improved minesweeping, hunting, and neutralization systems. The first of these is funded in FY 1982.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development and Procurement of QUICKSTRIKE Mines				
Development: $ Millions	9.5	7.3	7.1	5.3
Procurement: $ Millions	5.4	9.9	21.7	--
Procurement of Submarine-Launched Mobile Mines (SLMM)				
$ Millions	--	--	11.7	24.4
Development and Procurement of CAPTOR Mines				
Development: $ Millions	4.0	5.6	3.0	3.0
Procurement: $ Millions	64.0	87.1	90.8	188.2
Procurement of Mine Countermeasure Ships				
$ Millions	--	--	100.6	--

G. Improving Fleet Readiness

Readiness has been given priority consideration in the preparation of this year's budget request.

1. Materiel Readiness

Our new ships are larger, more capable, and more complex. Charts 4-1 and 4-2 give some indication of this technological growth, which increases maintenance demands on a per-hull basis at all three levels of maintenance (unit, intermediate, and depot). We have requested adequate funding to sustain current levels of fleet materiel readiness and essentially to eliminate the ship overhaul backlog by the end of FY 1984. We continue to pursue improved organizational maintenance at the shipboard level.

CHART 4-1

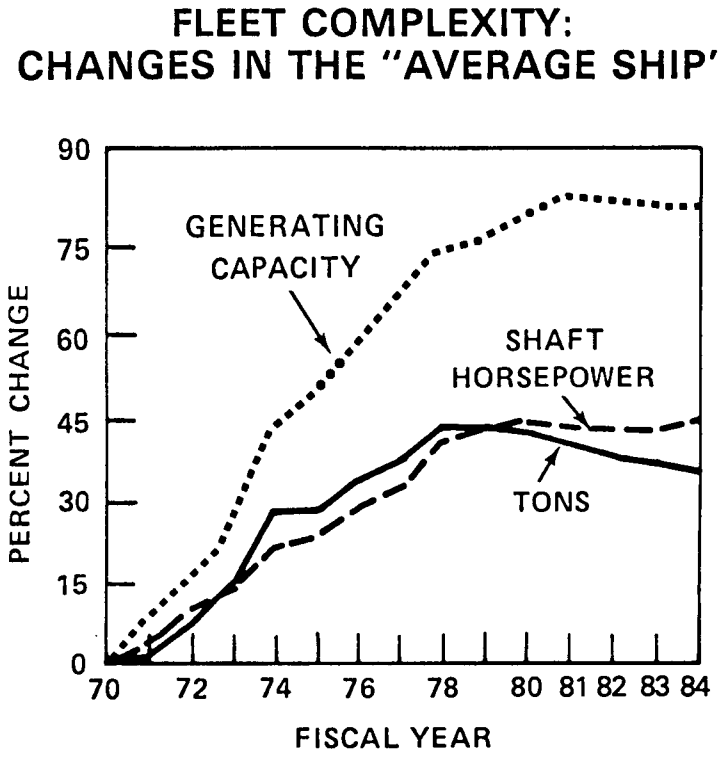
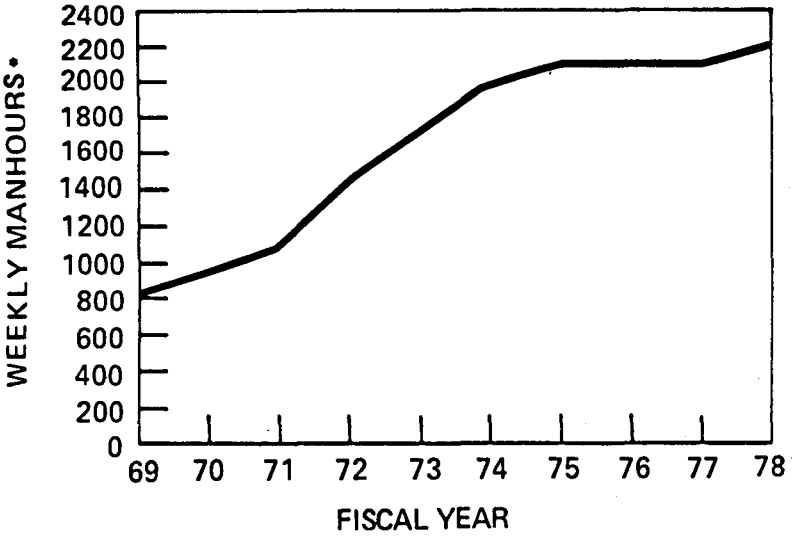


CHART 4-2

AVERAGE WEEKLY MANHOURS PER HULL REQUIRED FOR SURFACE SHIP PREVENTIVE MAINTENANCE



*CONDITION THREE UNDERWAY (NORMAL STEAMING)

We have requested over $2 billion for procurement and rework of peacetime operating spares in order to achieve 85 percent supply system responsiveness for both shipboard and aviation needs by FY 1986.

Our programs will implement planned increases in intermediate echelon capability and capacity to maintain the fleet. These upgrade programs for intermediate maintenance activities (IMAs) include training of shipboard personnel rotating ashore in the use and repair of complex hardware and equipment, procurement of more and better test equipment, and continued contract support to fill shortfalls in IMA capacity.

We plan to invest nearly $800 million over the next five years in shipyard modernization that will contribute to increased long-term readiness. We also are emphasizing other naval shipyard productivity improvements.

The budget request also includes funding for several weapon maintenance programs. In FY 1982, we predict that we will achieve an asset readiness objective of an average 85 percent for all ammuntion, missiles, and torpedoes.

We have also included increases in materiel programs such as engineering technical services, test equipment for surface ships, and technical publications in response to readiness initiatives identified by fleet commanders.

2. Training Readiness

As I reported last year, the contribution of training to readiness is very difficult to measure. Only in combat can the real results of our training program be properly assessed. Surrogates for training readiness are ship steaming hours and aircraft flying hours.

For FY 1982, the steaming days per quarter programmed and desired are:

Fleet	Programmed	Desired
2	31	39
6	44	50
3	27	32
7	57*	67
TOTAL AVERAGE	40	47

* Includes one CVBG in the Indian Ocean.

While the programmed levels do not fully meet the desired goals of the fleet commanders, we believe they are adequate to support our current peacetime needs.

Aircraft flying hours may also be used to estimate the level of training, which is closely related to readiness. This year's budget provides 86 percent of the actual flying hours and simulation time required to support the Department of the Navy's tactical aircraft primary combat mission. This 86 percent PMR represents an appropriate balance between peacetime readiness and other needs.

We will continue to maximize the use of simulators to provide effective, low-cost training. Simulators allow personnel to experience many situations we would be unable to duplicate outside of high-risk or combat conditions. They also allow us to reduce ship and aircraft fuel costs, while still providing acceptable training for our forces.

III. CONCLUSION

The FY 1982-1986 Shipbuilding Program is described in Table 4-5.

TABLE 4-5

FY 1982 Shipbuilding Program

TYPE OF SHIP	1982	1983	1984	1985	1986	FY 82-86 Five Year Total
TRIDENT (Ballistic Missile Submarine)	1	1	1	2	1	6
SSN-688 (Attack Submarine)	1	1	1	1	2	6
FA-SSN (Attack Submarine)	0	0	0	1	0	1
CV (Aircraft Carrier) SLEP 1/	0	1	0	1	0	2
CG-47 (Guided Missile Cruiser)	2	2	4	4	4	16
DDGX (Guided Missile Destroyer)	0	0	0	0	1	1
FFG-7 (Guided Missile Frigate)	1	0	0	0	0	1
FFX (Frigate)	0	0	1	2	3	6
T-AO (Oiler)	1	0	2	2	2	7
MCM (Mine Countermeasures Ship)	1	0	4	4	4	13
ARS (Salvage Ship)	2	1	1	0	0	4
T-AGOS (SURTASS)	4	3	3	0	0	10
T-ARC (Cable ship)	0	0	0	0	1	1
T-AK (Cargo Ship Conversion)	0	0	1	0	0	1
T-AKX (MPS)	1	1	2	2	2	8
T-AKX (RO/RO MAINE CLASS) 2/	1	2	0	1	0	4
T-AGS (FBM Support Ship Conversion)	0	0	2	0	0	2
T-AKRX (SL-7 Conversion) 3/	2	3	3	0	0	8
T-AH (Hospital Ship Conversion)	0	1	0	0	0	1
T-AFS (LYNESS) 3/	1	0	0	0	0	1
NEW CONSTRUCTION SHIPS	14	9	19	18	20	80
NEW SHIP ACQUISITIONS	2	2	0	1	0	5
CONVERSIONS	2	5	6	1	0	14

1/ SLEP - Service Life Extension Program.
2/ Includes ship acquisition and conversion.
3/ Assumes acquisition with FY 81 funding.

CHAPTER 5

TACTICAL AIR FORCES

I. PROGRAM BASIS

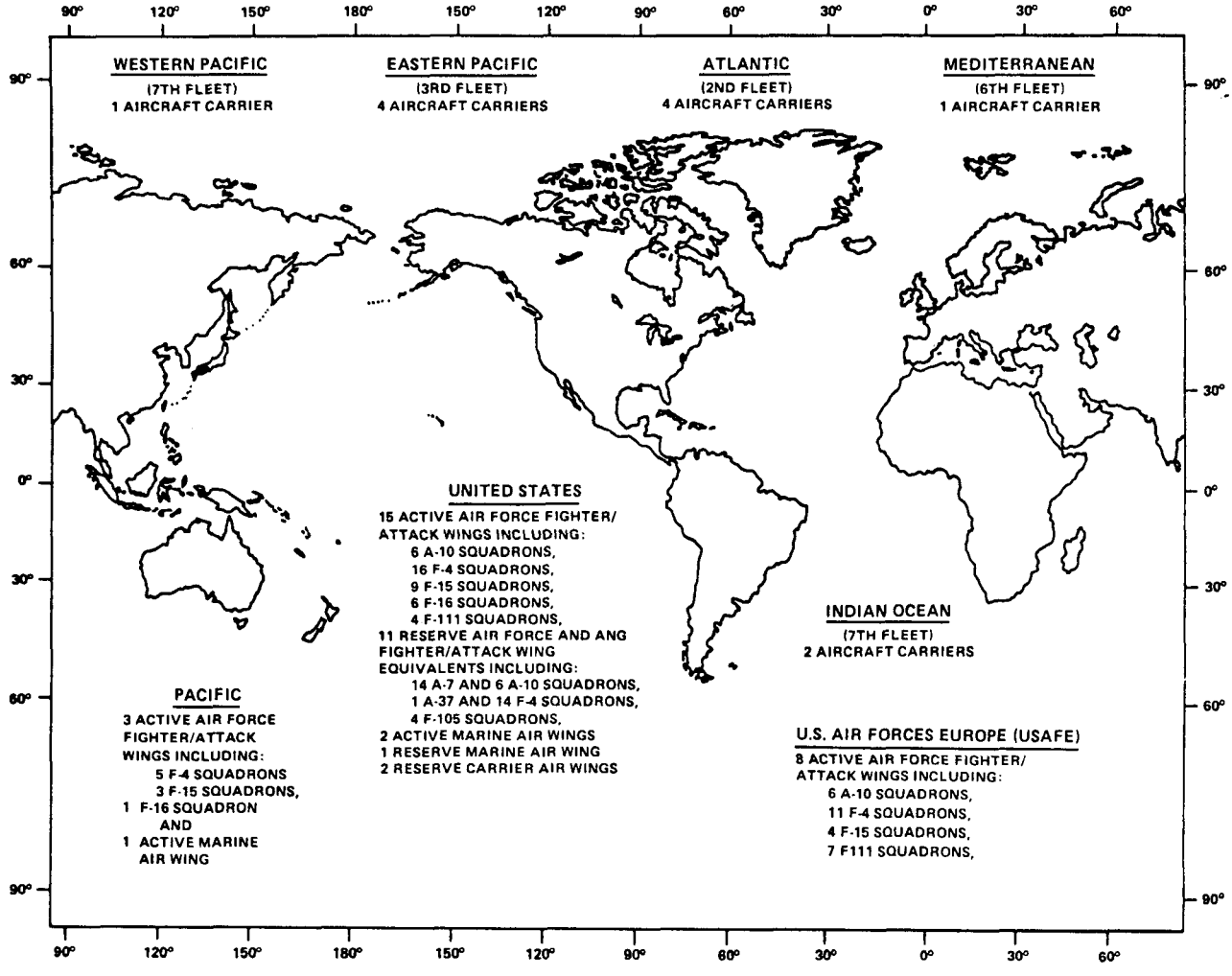
Land- and sea-based tactical air forces control friendly airspace and support our ground and sea forces in the execution of their missions. Accordingly, tactical air forces perform close air support, counter-air, nuclear strike, and interdiction missions. These forces are equipped with fighter aircraft, and attack aircraft, as well as combat support aircraft that perform airborne warning and control, tactical reconnaissance, electronic warfare, and defense suppression.

A. Force Structure

The deployment of U.S. tactical air forces is shown in Chart 5-1.

CHART 5-1

Deployment of U.S. Tactical Air Forces



1. U.S. Air Force Tactical Air Forces

The Air Force fighter/attack force structure consists of 26 active wings and the equivalent of 11 reserve wings. Each wing normally contains three squadrons of 24 aircraft each. Combat support units are generally grouped into squadrons of 18 to 24 aircraft. By 1984, all 26 of the active wings will have full complements of aircraft. We expect to have the equivalent of nearly 14 reserve wings by FY 1985.

In addition to fighter and attack forces, the active and reserve components of the Air Force operate the following types and numbers of special purpose tactical squadrons: Electronic Warfare (2), Reconnaissance (14), Tactical Air Control (11), and Special Operations Force (7).

2. U.S. Navy and Marine Corps Tactical Air Forces

We plan to maintain 12 active Navy carrier air wings and two reserve wings throughout the planning period, plus three active Marine air wings and one reserve wing. Unlike Air Force wings that generally consist of only one type of aircraft, Navy and Marine Corps air wings are task-oriented and include many types of aircraft.

A typical active carrier air wing consists of the following types and numbers of aircraft:

Aircraft Type	Function	Squadrons	Aircraft
F-4, F-14 (TARPS)	Fighter (Reconnaissance)	2	24
A-7, A-18	Light Attack	2	24
A-6, KA-6D	Medium Attack, Tanker	1	14
S-3A	ASW (Fixed Wing)	1	10
SH-3H	ASW (Rotary Wing)	1	6
EA-6B	Electronic Warfare	1	4
E-2C	Airborne Early Warning	1	4
TOTAL		9	86

A notional active Marine Corps air wing would consist of the following elements:

Aircraft Type	Function	Squadrons	Aircraft
F-4, F-18	Fighter	4	48
A-4, A-18, AV-8A	Light Attack	2-3	46
A-6	Medium Attack	1-2	17
KC-130	Tanker/Transport	1	12
EA-6B	Electronic Warfare	1	5
RF-4	Reconnaissance	1	7
OV-10	Observation	1	12
AH-1	Attack Helicopters	1	24
CH-53, CH-46, UH-1	Transport/Utility Helicopters	6-7	131
TOTAL		18-21	302

B. Objectives for FY 1982-1986

The FY 1982-1986 Defense Program sustains many initiatives begun in previous years to improve the quality and quantity of U.S. tactical air forces. This year's program emphasizes:

-- increasing combat readiness;

-- modernizing the active and reserve components of the Air Force, Navy, and Marine Corps;

-- enhancing defense suppression, C^3, and C^3 countermeasures; and

-- improving target acquisition, surveillance, warning, and reconnaissance activities.

II. PROGRAM DESCRIPTION

Major emphasis will be placed on the following areas over the next five years.

A. Increasing Combat Readiness

Maintaining the combat readiness of our aircrews and their increasingly complex equipment, while building and modernizing our tactical air forces, has become an exceedingly difficult challenge. One of our major objectives in this budget and five-year program period is to improve combat readiness. This is a difficult task that involves personnel, support structure, spare parts, munitions, and the basic complexity of our modern tactical fighters. For obvious reasons, our most capable, technologically advanced aircraft are also those that are the most difficult to maintain in terms of men and materiel. Because of high demands for spares, our peacetime stocks are often exhausted and components have to be withdrawn from wartime reserve stocks or cannibalized from other aircraft to allow our aircrews to fly needed training missions.

For the short term, we have increased both the Air Force and Navy operations and maintenance accounts to improve the readiness of our people as well as to stop the deterioration of our physical plants. Maintenance and spares are funded in FY 1982 to increase the mission capable rates for the Air Force and for the Navy. The Air Force is funded to eliminate its depot maintenance repair backlog by FY 1985. In addition, funding has been increased for aviation spares in FY 1982 and 1983, depot-purchase equipment maintenance, flying hours, and munitions.

To improve our readiness over the longer term, we must direct our technology towards obtaining weapon systems that can be bought in greater quantities, can be supported adequately in the field, can be more easily maintained, and will be more reliable and available for both peacetime and wartime uses.

B. Modernizing the Active and Reserve Components of the Air Force

While our active Air Force wings currently do not have their full complement of aircraft, they have increased from an equivalent of 22.75 wings in FY 1979 to 23.1 wings in FY 1980 through deliveries of new A-10s, F-15s, and F-16s. By FY 1984, we expect that all 26 wings will be fully equipped. Between FY 1979 and FY 1984, the Air Force will have introduced 700 new fighter and attack aircraft into combat units and will have phased out about 470 older aircraft. This translates into seven new A-10 squadrons, three new F-15 squadrons, and 18 new F-16

squadrons. Over this same period, the average age of our active force aircraft will increase from 8.2 years to 8.7 years--reflecting the retention of older aircraft used to strengthen the force. By FY 1986, 67 percent of our active combat units will be equipped with A-10s, F-15s, and F-16s.

We now plan to produce only 687 A-10s, instead of our planned buy of 825. This means that FY 1981 is the final year of A-10 procurement. To accommodate this reduction from our original planned buy, we have had to reduce the number of A-10s in combat units from 504 to 468 aircraft. F-16 procurement has been slowed to 96 per year, down from 180 last year. We will continue to buy F-15s through FY 1983 and will complete the planned buy of 729 aircraft. Besides the 402 F-15s combat-coded for tactical use, two additional 18-aircraft squadrons will be assigned to CONUS air defense--one in FY 1982 and the other in FY 1985. The tactical air force structure will be maintained by retaining two combat squadrons of F-111Ds and some F-4s longer than previously planned. Chart 5-2 shows the composition of our active fighter/attack force.

The reserve components of the Air force will also be expanded and modernized, although not as fast as previously planned. The reserves now have 11 equivalent tactical air wings and are building to a full 14 air wings in FY 1988. Even though we are phasing out older and less efficient aircraft, the average age of our reserve aircraft will increase from 12.7 years currently, to 15.5 years by 1985, reflecting the reduction in planned A-10 procurement and the slowing of F-16 procurement. By FY 1988, 19 percent of the Reserves and Air National Guard will be equipped with A-10s and F-16s. Changes in the reserve force structure are shown in Chart 5-3.

CHART 5-2

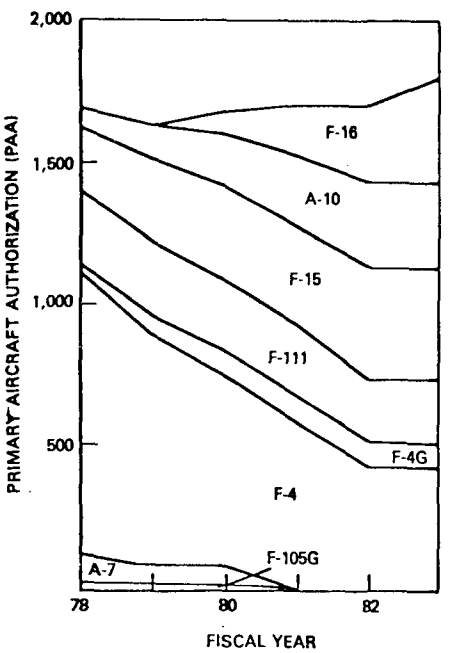
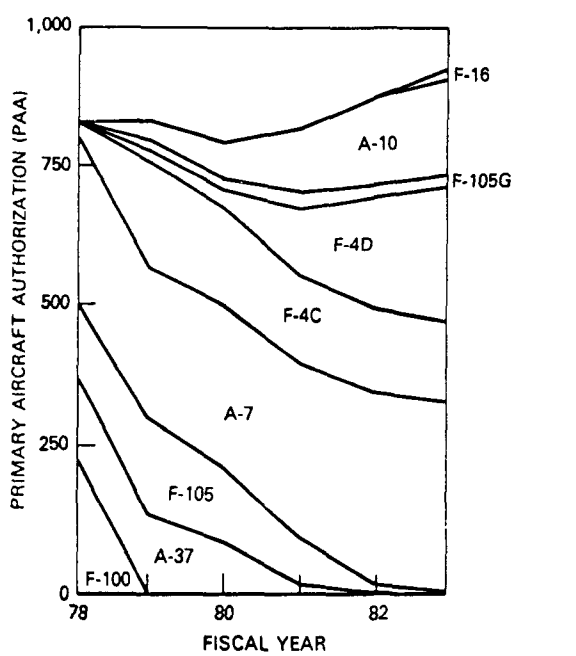


CHART 5-3



The Air Force has increased funding for the AIM-7 and AIM-9 air-to-air missile programs. By FY 1986, we will completely satisfy our air-to-air missile inventory objectives. As a follow-on to the AIM-7, we are also funding AMRAAM, our advanced medium-range air-to-air missile. AMRAAM, with its increased speed and range, combined with a capability for launch and maneuver, look-down, shoot-down, and multiple target attack, will provide the tactical advantage required to meet a numerically superior threat in the 1985-2005 time period.

Details of the Air Force's modernization program are as follows:

1. F-15 (EAGLE) -- The Air Force's all-weather air superiority fighter. Procurement of the planned total of 729 will be completed in FY 1983.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	2.5	11.1	24.8	21.1
Procurement:				
Quantity	60	42	30	18
$ Millions	1,060.3	1,080.0	904.8	543.4

2. F-16 (FIGHTING FALCON) -- An air superiority fighter that complements the F-15 and also serves in the ground attack role. We plan to procure 1,388 of these multi-purpose aircraft through FY 1990. The planned integration of the AMRAAM will give the F-16 an all-weather capability in its air-to-air role.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	29.6	42.2	43.0	42.0
Procurement:				
Quantity	175	180	96	96
$ Millions	1,659.9	1,953.3	1,647.6	1,679.7

3. A-10 (THUNDERBOLT II) -- A low-cost, extremely effective, anti-tank, close air support aircraft. This aircraft's main armament is the proven 7-barrel GAU-8 30mm gun, mounted internally. The last of a total of 687 are being procured in FY 1981.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	17.8	13.6	9.4	4.6
Procurement:				
Quantity	144	60	--	--
$ Millions	912.6	525.5	12.1	--

4. IIR MAVERICK Anti-Armor Air-to-Ground Missile -- An updated version of the current TV-guided MAVERICK, the IIR MAVERICK uses an imaging infrared seeker for guidance. Missile development is expected to be completed in 1981.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	50.9	36.3	10.9	5.4
Procurement:				
Quantity	--	--	490	3,660
$ Millions	--	--	204.2	357.7

5. GBU-15 -- A large, modular, guided glide weapon designed for low-altitude standoff delivery against high-value ground targets in a hostile air defense environment.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	--	8.9	9.8	14.4
Procurement:				
Quantity	35	65	240	250
$ Millions	16.1	20.7	51.3	51.3

6. Advanced Medium Range Air-to-Air Missile (AMRAAM) -- This new, all-weather, fire-and-forget air-to-air missile will use its own radar to home autonomously on the target. Funding comes from Navy and Air Force sources.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	54.4	47.7	143.2	163.5

7. AIM-7F/M (SPARROW) -- An all-weather air-to-air missile. Initial procurement of AIM-7Ms started in FY 1980. This model has greater ECM resistance and look-down/shoot-down capability than the "F" model.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	1.4	3.1	--	--
Procurement:				
Quantity	1,320	910	1,060	1,430
$ Millions	125.5	142.6	152.7	181.5

8. AIM-9L/M (SIDEWINDER) -- An infrared guided air-to-air missile. "M" model procurement is planned to start in FY 1981. This model has improved background and countermeasure capabilities.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	1.4	.6	--	--
Procurement:				
Quantity	2,050	260	480	1,920
$ Millions	86.9	46.3	59.2	128.8

9. Anti-Armor Aircraft Guns -- Starting in FY 1982, 520 30mm gun pods will be procured. These pods can be used on a wide variety of aircraft, such as the F-4 and A-7D/E, to give them a low-cost, lethal, anti-armor capability.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	--	--	12.0	1.0
Procurement:				
Quantity	--	--	12.0	180
$ Millions	5.0	12.9	43.0	54.4

10. LANTIRN -- This system integrates data from laser and FLIR sensors to locate and classify ground targets, and to cue airborne anti-armor weapons. If development is successful, LANTIRN will allow single-seat aircraft to operate at night and under some adverse weather conditions.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	40.3	56.5	77.4	64.5
Procurement:				
Quantity	--	--	--	51
$ Millions	--	1.0	15.9	118.3

11. Tactical Aircraft Modifications -- This account funds aircraft changes to correct problems identified during development and initial operational use, including changes that enhance the capability of existing aircraft. Significant items include: A-10 inertial navigation system; F/RF-4 radar warning receiver upgrade; F-15 update modifications; F-16 update modifications; INS improvements; and F-4G Performance Update improvements.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Modifications:				
$ Millions	397.2	554.0	582.8	630.3

C. Modernizing the Active and Reserve Components of the Navy and Marine Corps

One of the Navy's top priorities in the FY 1982-1986 programming period is to maintain its force structure, while simultaneously modernizing a major

segment of its inventory. Charts 5-4 and 5-5 show the changes in force structure, if the planned aircraft procurement program is executed. We currently plan to buy 674 Navy tactical fighter and attack aircraft, or an average of 135 aircraft per year. This means that by FY 1986, yearly Navy procurement will exceed normal yearly inventory losses.

CHART 5-4

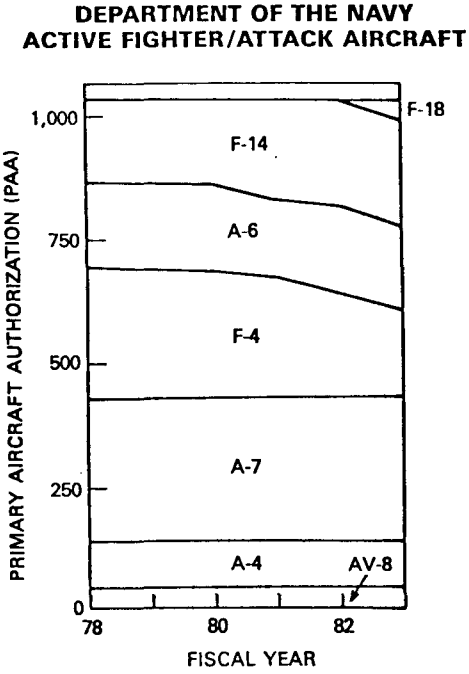
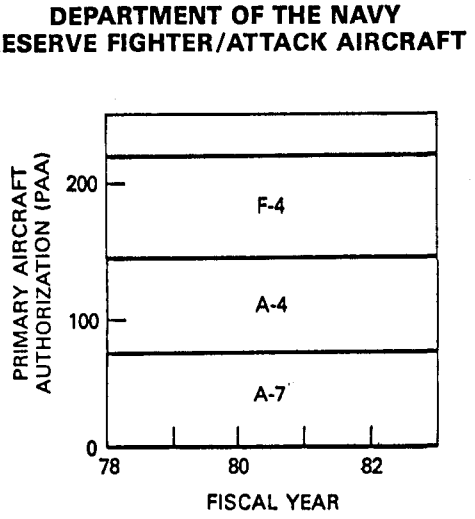


CHART 5-5



The key to this program is the F/A-18. We evaluated many alternatives in preparing the proposed program, including one that cancelled the F/A-18. Although the costs of this aircraft have risen, the F/A-18 remains the most practical solution to the Navy's modernization problem. We intend to make steady increases in procurement of this versatile aircraft, from 58 in FY 1982, increasing steadily to 209 in FY 1986. When this program is completed in the 1990s, all 24 Navy light attack squadrons and all 12 Marine Corps fighter squadrons will be equipped with this aircraft. We also expect to equip six Navy fighter squadrons with the F-18 and to replace Marine Corps AV-8As and A-4Ms with F/A-18s. This program will permit later-model F-4s to be transferred to the Reserves, replacing older aircraft. However, we also will continue R&D on the AV-8B V/STOL aircraft as a possible complement to the A-18 for the Marine Corps.

Both the Navy and Marine Corps plan on introducing the F-18 into fighter squadrons in FY 1983 and into light attack squadrons in FY 1984. This will allow the Navy to arrest the aging of the active fighter and light attack forces. By the late 1980s, Navy and Marine Corps reserve fighter and light attack aircraft will also need replacement. The then-mature F/A-18 might be an attractive alternative for these reserve units at that time.

Details of the Navy's modernization program are as follows:

1. F-14 (TOMCAT) -- An all-weather fighter that can be armed with six PHOENIX missiles to protect carrier battle groups.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	--	10.2	12.1	15.2
Procurement:				
Quantity	30	30	24	12
$ Millions	766.3	914.1	903.7	645.6

2. F-18 (HORNET) -- A multi-purpose aircraft that will replace F-4s in fighter units; will replace AV-8As, A-4s, and A-7s in light attack squadrons; and will serve as a new tactical reconnaissance aircraft.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	310.3	132.1	151.4	32.0
Procurement:				
Quantity	25	53	58	84
$ Millions	1,119.7	1,917.5	2,285.0	2,589.2

3. A-6E INTRUDER -- Continued procurement of this all-weather/night attack aircraft will allow us to maintain current force levels and will permit the continuing conversion of older A-6s to KA-6 tankers.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	5.4	7.7	10.1	22.4
Procurement:				
Quantity	6	12	4	4
$ Millions	157.5	252.1	166.4	168.8

4. AIM-7F/M (SPARROW) -- An all-weather, semi-active radar-guided air-to-air missile. The "M" model, initially procured in FY 1980, has greater ECM resistance and look-down/shoot-down capabilities than the "F" model.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Procurement:				
Quantity	240	770	905	1,185
$ Millions	63.0	147.4	132.4	177.4

5. AIM-9L/M (SIDEWINDER) -- The latest version of this infrared guided missile has improved background and countermeasures capabilities.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	8.5	1.8	--	--
Procurement:				
Quantity	320	220	310	485
$ Millions	21.5	44.6	24.2	54.4

6. AIM-54 A/C (PHOENIX) -- The "C" model of this long-range, all-weather, air-to-air missile entered production in FY 1980 and has improved ECCM features. It is intended primarily for long-range attack of bombers before they can launch cruise missiles against ship targets.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	38.0	37.3	30.8	11.1
Procurement:				
Quantity	60	210	72	220
$ Millions	108.3	162.4	162.4	232.8
Modification:				
$ Millions	4.0	4.1	8.0	31.4

7. Tactical Aircraft Modifications -- This account funds changes to correct problems or to enhance capabilities. Significant items include A-6 inertial navigation, re-wing, and target recognition and attack multi-sensor (TRAM); A-7 FLIR sensor and TF-41 engine; and F-14 TF-30 engine and AWG-9 programmable signal processor.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Modification:				
$ Millions	245.0	284.0	399.3	641.3

D. Enhancing Defense Suppression, C^3, and C^3 Countermeasures Capabilities

The proposed five-year program offers a balanced mix of lethal and non-lethal systems to counter effectively the Warsaw Pact's growing capability in this area. Our ability to degrade enemy air defense, to disrupt and destroy their command, control, and communications systems, and to protect our own communications flow can have a significant effect on any air campaign. Details of the Navy, Marine Corps, and Air Force programs in this area are as follows:

1. High Speed Anti-Radiation Missile (HARM) -- This advanced air-to-ground missile is scheduled to become operational in FY 1983, although procurement quantities have been reduced slightly. This is a joint Navy and Air Force program.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	65.5	65.3	13.2	6.0
Procurement:				
Quantity	--	80	--	535
$ Millions	--	103.8	--	275.7

2. Precision Location Strike System (PLSS) -- An Air Force system designed to locate, identify, and guide strikes on enemy air defense emitters in all weather conditions from standoff ranges.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	15.0	14.9	83.1	77.7

3. EF-111A -- A modified F-111 designed to jam enemy radars is scheduled to be operational in FY 1983. This is an Air Force program.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development				
$ Millions	--	--	14.5	19.2
Modification:				
Quantity	3	12	12	9
$ Millions	105.5	272.4	264.3	202.7

4. EA-6B (PROWLER) -- This sophisticated Navy and Marine Corps electronic support aircraft degrades enemy defenses by jamming their radars. It will be procured through FY 1986.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	--	1.7	--	--
Procurement:				
Quantity	6	6	2	2
$ Millions	182.0	227.9	147.8	161.1

5. Airborne Self-Protection Jammer (ASPJ) -- This advanced Navy/Air Force program will provide many of our tactical aircraft with an internal electronic countermeasures system.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	19.2	39.1	36.5	30.9

6. ALQ-131 Electronic Countermeasures Pods -- These jammer pods provide self-protection for Air Force aircraft not scheduled to receive the ASPJ.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Procurement:				
Quantity	120	147	78	49
$ Millions	98.1	113.5	72.1	53.7

7. Joint Tactical Information Distribution System (JTIDS) -- A secure, jam-resistant, digital information system for tactical use with a tentative IOC in the late 1980s. This program is funded by all the Services. The United Kingdom will use JTIDS on NIMROD and TORNADO aircraft.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	59.0	111.6	172.3	215.2
Procurement:				
$ Millions	--	--	27.3	--

8. Low Cost Expendable Harassment Vehicle (LOCUST) -- This joint U.S./FRG lethal defense suppression program is expected to have an IOC of FY 1985.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	4.7	5.6	8.7	5.3
Procurement:				
Quantity	--	--	--	12000
$ Millions	--	--	7.3	43.3

9. Communications Jamming Platform (COMPASS CALL) -- A modified C-130 designed to jam enemy communications.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	6.0	9.8	12.3	9.8
Procurement:				
$ Millions	40.1	53.6	22.8	19.6

10. SEEK TALK -- A jam-resistant voice communications modification for aircraft and ground systems to enable voice communications in a jamming environment. This is an Air Force program.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	11.8	41.9	49.9	2.0
Procurement:				
$ Millions	--	--	--	--

E. Improving Target Acquisition, Surveillance, Warning, and Reconnaissance Capabilities

The location, identification, and destruction of enemy air defenses and other ground targets is important to effective tactical air operations and, ultimately, to the outcome of the battle. Our capabilities in this critical area are improved through the following programs:

1. E-3A (AWACS) -- This aircraft is equipped with a long-range, look-down radar with substantial jamming resistance. It provides the Air Force with improved surveillance, warning, and control capabilities for use in CONUS air defense and in tactical theaters of operations.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	41.2	63.0	53.8	63.6
Procurement:				
Quantity	3	2	--	4
$ Millions	327.2	272.0	--	552.8

2. E-2C (HAWKEYE) -- This aircraft provides the Navy with the airborne early warning and command and control capabilities needed for sea control and wartime air defense missions.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Development:				
$ Millions	11.1	19.3	19.2	16.1
Procurement:				
Quantity	6	6	6	6
$ Millions	201.6	240.4	270.9	261.9

3. TR-1 -- This Air Force aircraft, a derivative of the U-2, is designed to provide continuous, all-weather surveillance of the battle area. The airframe is also common to the PLSS mission. Funding includes PLSS aircraft and associated TR-1 ground processing facilities.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Procurement:				
Quantity	2	4	4	4
$ Millions	44.2	125.3	117.4	128.1

CHAPTER 6

RAPID DEPLOYMENT FORCES

I. PROGRAM BASIS

A. Introduction

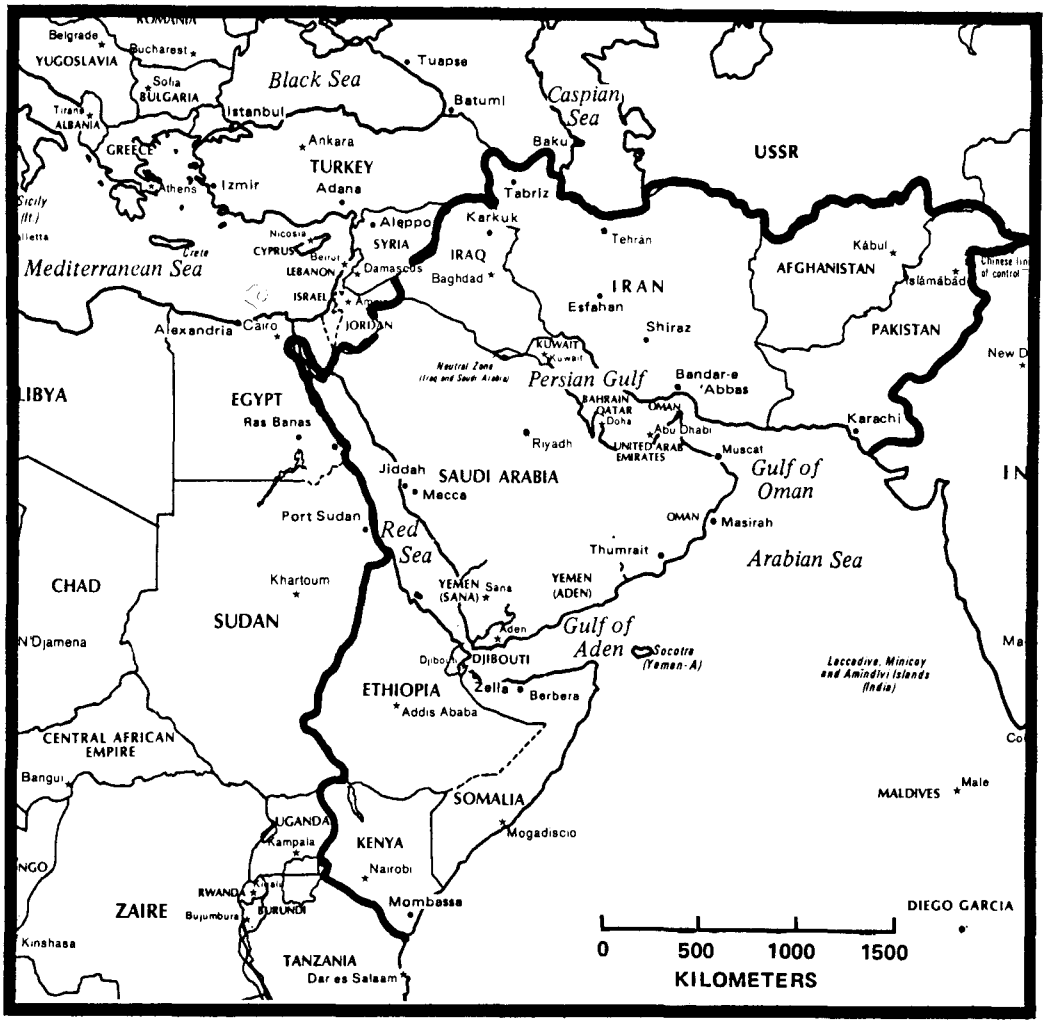
The Rapid Deployment Forces (RDF) consist of a four-service reservoir of forces suitable for use in a wide range of non-NATO contingencies. Given a particular contingency, a Rapid Deployment Joint Task Force (RDJTF) would be tailored for the mission at hand from forces in this reservoir. Currently, an RDJTF might range in size from a small Ranger unit to several Army and Marine divisions supported by air and naval forces. Plans call for the RDF to build continuously for the next several years, adding both Army and Marine divisions with an appropriate complement of air and naval forces. The additional forces to be made available for the RDF will come from those currently oriented toward NATO.

We created no additional combat forces in establishing the RDF; the forces already existed, as did some limited planning to use them in non-NATO contingencies. However, we have made major structural and organizational changes to improve the quality of our planning and the effectiveness of the forces, particularly in joint-service operations. We also have begun major related initiatives involving mobility systems, access to and improvement of bases, exercises, and specialized support. Our focus has been on Southwest Asia, as defined in Chart 6-1.

The Headquarters (HQ) RDJTF became operational on March 1, 1980. It is located at MacDill AFB in Tampa, Florida, along with the Readiness Command (REDCOM) and the Joint Deployment Agency (JDA). We created the HQ RDJTF to consolidate in one dedicated organization the responsibility for: (1) developing operational plans for likely contingencies, particularly in Southwest Asia; (2) maintaining adequate capabilities and readiness, through the Services, specifically for RDJTF contingencies; (3) exercising and improving capabilities (under the auspices of REDCOM for CONUS exercises); and (4) serving as an effective advocate for change--in procedures, capabilities, and force structure. During peacetime, HQ RDJTF is subordinate to HQ REDCOM and controls no operational forces. However, in a crisis, a command element from HQ RDJTF would control operational forces assigned to the tailored RDJTF, and the Commander, RDJTF, might report to any of several unified commands or directly to the National Command Authority through the Joint Chiefs of Staff. The choice of the command relationship would depend on the nature and location of the crisis.

CHART 6-1

SOUTHWEST ASIA



The HQ RDJTF has now been hard at work for about a year. The effects of its efforts on our readiness may not be visible in a casual assessment because, as noted earlier, no new combat forces have been created. However, the improvements are real and extremely important. The POSITIVE LEAP exercise held in the first half of 1980, and other subsequent exercises, tested our ability to conduct coordinated four-service RDF operations involving multiple unified commands. We uncovered numerous problems that are now being solved, and we high-lighted the need for specialized support. Many of the programs discussed in Section II of this Chapter are initial steps towards resolving RDJTF problems. Although it is inappropriate to discuss details of operational plans in this document, the quality of planning for RDF missions has been greatly improved by virtue of the organizational changes, the lessons learned from the exercise program, and the diligent efforts of the individuals involved.

B. Force Structure

As mentioned initially, the RDJTF in peacetime is really a headquarters, with access to a reservoir from which appropriate forces can be drawn in time of crisis. The forces in the reservoir ordinarily are assigned to unified, specified, or CONUS-based commands. In principle, of course, all of our general purpose

forces are in some sense available for RDF missions. However, as a practical matter, we have designated a core reservoir of forces that have the RDF role as one of their primary missions. Most operational planning and training for the RDJTF centers on this reservoir of forces. The components designated for this reservoir will change over time. Currently, this pool of forces includes Army and Marine divisions, Air Force tactical fighter wings, Marine Aircraft Wings, Carrier Battle Groups (CVBGs), and necessary support forces.

The particular elements of the RDF that would be deployed in a given situation would depend on the nature and size of the threat, the rate at which the crisis and hostilities developed, our mobility assets, and our ability to support and resupply deployed forces. At present, we are much more limited in our mobility systems and support capabilities than we will be in a few years. We are currently examining what would be needed in order to improve our RDF capabilities by the end of FY 1982. Meeting this objective will require us to increase funding for readiness, mobility, and sustainability, and to improve our planning, use of warning, and opportunities for mobilization. It will also require emergency measures to ameliorate some special support problems.

C. Objectives and Problems

1. Contingency Planning

As discussed in Section I of this Report, the possible contingencies are many and varied, even for Southwest Asia alone, and it would be unwise to plan exclusively for any one scenario. In small-scale conflicts, the United States may play a low-level role involving advisory teams, Special Forces, and logistics, all of which require a broad range of specialized capabilities, including language skills and experience in working with regional forces. The largest plausible scenario, however, is by no means merely a scaled-up version of the lesser ones.

Our near-term planning has considered a number of potential non-Soviet contingencies where a relatively small RDJTF would be adequate. Nonetheless, most of our Southwest Asia planning must be--and has been--concerned with the threat of a possible large-scale Soviet invasion in the Persian Gulf region. The primary mission of the RDF is, of course, to deter any further Soviet aggression in Southwest Asia. However, if deterrence fails, the RDJTF must be prepared to fight the Soviets, either as a self-contained force or in concert with regional and perhaps other concerned allies as well.

2. Capabilities Needed

Building capabilities for conflict in Southwest Asia is a relatively new experience for the United States. Consequently, we are faced with a broad range of unfamiliar but vital issues. Our Southwest Asia strategy calls for each of the following:

- -- the presence of significant combat forces (e.g., CVBGs and amphibious forces);
- -- designated RDF combat forces with training, equipment, and doctrine suited to likely contingencies (e.g., mountain and desert warfare);

-- support forces tailored for Southwest Asia and structured for time-phased deployment;

-- mobility capabilities for both inter-theater and intra-theater movements;

-- overflight rights, as well as access to and improvement of en route bases and facilities, in order to support large-scale airlift and sealift operations;

-- access to and improvement of regional airfields and ports in order to permit large-scale deployments in time of crisis;

-- prepositioning of stocks at regional facilities or on maritime prepositioning ships; and

-- secure land, air, and sea lines of communication by which to deploy and resupply our forces.

In addition to these challenges, I emphasize that because much of our focus has been previously oriented to Europe, where there is a highly developed infrastructure and substantial host-nation support, we need to develop support units of several types that would be needed in the austere environment of Southwest Asia. Furthermore, we may need to enhance our strategic lift capability to deploy these forces to Southwest Asia, especially if there were simultaneous crises in Southwest Asia and elsewhere.

Clearly, then, we have multiple problems--all of which we are now addressing. Although the details are classified, our principal goals can be stated here:

a. to improve strategic mobility and to provide adequate prepositioning; and

b. to provide support and resupply to sustain forces in Southwest Asia.

As is widely recognized, airlift is critical for the immediate deployment of initial light forces, and it may also be critical for intra-theater movements of forces and supplies. However, it is less widely recognized that most of the projected improvement in strategic mobility will result from sealift programs (maritime prepositioning and fast sealift). Indeed, by the mid-1980s, sealift will dominate our mobility capability. This underscores the importance of being able to protect our sealift, primarily from Soviet submarines and naval aviation. In addition, we must continue to seek access to those facilities necessary to enhance our operational capabilities. Our current initiatives along this line are described in the next section of this Chapter.

II. PROGRAM DESCRIPTION

A. RDF-Related Programs

It is impossible to estimate precisely the total cost of the RDF, because so many of its elements are embedded in our overall force structure. For example, charging the C-X to the RDF is a matter of judgment, for even though the C-X is an important part of our long-term RDF plans, it also represents a major addition to our mobility forces generally. Nonetheless, numerous initiatives are in fact programmed that will enhance the capabilities of the RDF.

B. Facility Access Initiatives

1. En Route Bases, Facilities, and Overflight Rights

Our ability to airlift an RDJTF to Southwest Asia would depend on en route facilities for refueling, and to a lesser, but still important extent, on overflight rights. During the last 18 months, we have pursued these issues with several nations and have achieved positive results. In some cases, we sought not only access, but also permission to improve facilities and infrastructure. By agreement with the United Kingdom, we are upgrading facilities at Diego Garcia.

2. Regional Facilities in Southwest Asia

In no case are we seeking to create a new U.S. base, per se, in Southwest Asia. Rather, the purpose is to improve facilities we might use in crises or exercises, and to arrange for prompt access when needed. Egypt has offered to permit U.S. access to its facilities at Ras Banas on the Red Sea. We also have reached an agreement with Oman permitting us to improve selected facilities for our use. These improvements include upgrading of runways, taxiways, and aprons, and construction of support facilities for personnel and maintenance. Omani facilities could be very important for sea control and support of naval forces because of their critical strategic location. Additionally, the Government of Kenya has agreed to allow U.S. forces access to air and port facilities at Mombassa. The most recently concluded agreement is with Somalia--one that gives us access to Mogadiscio as well as to Berbera, a good port near the strategically important outlet of the Red Sea at the Bab Al Mandeb.

We will rely on CVBGs and sea-based Marine forces for our peacetime presence. We expect to have a carrier presence in the Indian Ocean, at least for the foreseeable future. We are making progress in gaining access to regional facilities that will help support our peacetime presence and permit the surge of RDF forces if necessary.

C. Mobility Systems

The RDJTF will benefit enormously from our current mobility programs, and we expect to see improvements in our stategic mobility for RDF contingencies. Chapter 7 describes these programs in more detail.

D. Equipment, Structure, and Training

An RDJTF may have to operate in both mountain and desert terrain in Southwest Asia. The forces needed could vary from mobile light infantry to mechanized units. Both the Army and Marine Corps are evaluating lightweight equipment and streamlined structures in order to increase the strategic mobility of our ground forces while minimizing degradation of their combat power. Because we believe that exercises are essential for operational readiness, we have begun a wide range of RDF-oriented exercises (e.g., POSITIVE LEAP, BRIGHT STAR) and have programmed funds for special out-of-country RDJTF exercises. The November 1980 BRIGHT STAR exercise of Army and Air Force units in Egypt is a recent example. Each of the separate Services is also emphasizing RDF-related training. Table 6-1 summarizes some recent RDF-related exercises.

TABLE 6-1

Selected RDF-Related Exercises

Exercise	Fiscal Year	Location	Description
POSITIVE LEAP	FY 80	Ft. Bragg, NC	Command Post Exercise (CPX) and Limited Field Training Exercise (FTX)
GALLANT KNIGHT	Annual	Ft. Bragg, NC	CPX/FTX; RDJTF Specific
BRIGHT STAR	FY 81	Persian Gulf Area	Joint Service CPX/FTX; RDJTF Specific

E. Support

The possibility of conflict in Southwest Asia argues that we should move as rapidly as possible in filling certain critical gaps in our support forces. Particularly important is finding ways to meet requirements for special equipment and for transporting supplies over lengthy land LOCs. Because RDF support requirements are so important and so demanding, we currently are examining a range of near- and mid-term options, including: ways for our allies to assume a greater share of the support burden in NATO; upgrading reserve units to permit them to deploy more quickly and reliably; and regional prepositioning.

F. C^3I Support

There is a critical need for effective communications, command, and control of the RDF at each stage of an assigned mission: predeployment, deployment, and employment. As a result, we have provided substantial enhancements to Service C^3I capabilities, in both FY 1980 and FY 1981. Furthermore, to ensure that we are meeting the needs of the RDF, we have recently undertaken a comprehensive study to determine RDF support requirements, including C^3I. We expect that many of these requirements will become FY 1983 budget initiatives.

III. SUMMARY

Events of the past 18 months have made clear the need for the United States to play the major role in protecting the interests of the industrialized democracies in Southwest Asia. Part of our response has been to create, from existing resources, the Rapid Deployment Forces--a small yet flexible pool of forces suitable for use in diverse conflicts. Organizational restructuring and modified planning have greatly improved our readiness. We have structured a set of RDF-related programs, as descibed in this chapter, to resolve or reduce current problems by providing for: access to en route and regional facilities and bases; overflight rights; prepositioning on land and sea; enhanced airlift and sealift capabilities; appropriate steps with respect to armament, munitions, and spare parts; POL sources, storage, and distribution; water production, storage, and distribution; engineering support; C^3 equipment; an enhanced sea-based peacetime presence in the region (primarily using CVBGs and Marines in amphibious ships); and, importantly, joint exercises with U.S. forces and regional allies. The tone of this chapter is optimistic--and to fulfill this attitude, these important programs will have to receive priority and be executed.

CHAPTER 7

MOBILITY FORCES

I. PROGRAM BASIS

Mobility forces move people, equipment, and supplies during initial deployment from peacetime to wartime locations, provide sustaining support for employed forces, and redeploy those units responding to shifting demands of combat. Mobility programs often involve choices among military and civilian airlift and sealift resources, as well as the prepositioning of supplies and equipment near likely conflict locations. Airlift, while fast and flexible, is more expensive. In addition, some supplies and equipment can be moved only on very large aircraft, while others are not air-transportable at all. Sealift and prepositioning afloat, while also flexible, cannot provide a sufficiently rapid response in some situations. Land-based prepositioning, an attractive option in Europe and Korea, is relatively inflexible and, for political reasons, may be less desirable in other regions. Moreover, prepositioning in a large number of potential conflict locations would be expensive.

A. Mobility Objectives

Our long-term goal is to be able to support simultaneously full-scale deployments to Europe and to other potential trouble spots. We would wish to meet both the inter-theater and intra-theater demands of such a dual contingency, and we plan to make substantial progress toward this demanding and rather elastic goal by the mid-1980s.

1. European Reinforcement

The possibility of a major conflict in Europe following rapid mobilization of the Warsaw Pact forces remains the single most demanding contingency for U.S. forces, short of a worldwide conflict with the Soviet Union. To meet this threat, our mobility objectives call for, by FY 1986, the capability to place six Army divisions, and their supporting units, in the Central Region, to deploy a brigade-sized Marine Air-Ground Task Force (MAGTF) to Norway, and to position 80 tactical fighter squadrons with minimum essential support to locations throughout Europe--all within 10 days of our decision to mobilize.

2. Non-NATO Contingencies and Simultaneity

Any deployment to cope with a non-NATO contingency would reduce the mobility forces available for NATO reinforcement and would also present its own unique challenges. Augmentation by civil air and sea carriers, particularly those of our NATO allies, might be minimal to nonexistent, and deployment distances might be formidable. Denial of overflight rights, minimal intermediate support, and austere reception basing could create a colossal set of operational problems. The numbers and types of forces to be moved are less certain than in a NATO contingency, because of the great range of possible scenarios. The level of the challenge would depend on whether Soviet forces were involved, and how far the scene was from the United States and from the USSR. Nevertheless, as the concept of Rapid Deployment Forces (RDF) emerges more clearly, objectives become somewhat

easier to define. By the end of the program period, we want to be able to deploy RDF ground forces to Southwest Asia at a steady rate (with essential support), and several tactical fighter wings and B-52Hs (together with sustaining supplies and follow-on support) within one month, assuming no mobility assets were required for a simultaneous NATO contingency.

B. Problem Areas

Existing U.S. mobility forces cannot meet all the deployment objectives we have set for FY 1986. Our force-sustaining capability in a NATO war appears adequate, given access to sealift resources (around 400 vessels) from our NATO allies as well as our own ships. But our early capabilities in either a NATO conflict or a smaller contingency elsewhere are too austere for us to be complacent.

A recent DoD mobility study, conducted at Congressional request, identified significant shortfalls in a simulated NATO reinforcement effort, in a response to a Persian Gulf crisis, and in a simultaneous scenario. Our mobility forces program is oriented towards remedying these shortfalls and increasing our ability to meet a lesser non-NATO contingency without unacceptably degrading our NATO capability.

C. Force Mix

Obviously, a wide variety of programs could be structured to meet these objectives. In choosing the components of our proposed program, our primary concern was to select systems that can respond quickly enough to meet the threat. After that, selection involved tradeoffs among costs, vulnerability, the speed with which various systems could be procured, and the flexibility of each system to respond to contingencies other than those used for program planning.

In a European reinforcement effort, we rely on sealift to provide the bulk of the follow-on forces and support; but sealift could not respond quickly enough to meet the threat in the early days following mobilization. Of the remaining mobility options, both airlift enhancement and prepositioning would reduce existing mobility shortfalls at about the same cost (for articles delivered within the first 10 days) and could be implemented by about the same date. Neither is inherently more vulnerable. Because airlift offers more flexibility, we are emphasizing airlift enhancements, but there are clear upper bounds on the number of existing and available airframes. Because new airlift is both very costly and not available in the near term, and because sealift is too slow, prepositioning is an attractive option for a European scenario.

Movement of the RDF generates a whole new set of decision parameters. Land-based prepositioning options are very limited. Choosing the right mix of airlift, fast sealift, and maritime prepositioning is largely a matter of relative costs, and, in this instance, costs relate directly to responsiveness. Fast sealift, the least costly option, could deliver division-size forces from the CONUS, with support, in two to four weeks following a deployment decision; maritime prepositioning ships could deliver the same elements in about one to two weeks; and airlift, the most expensive option, could respond within a few days. However, rapid response is the key to successful employment of the RDF in most scenarios. Therefore, it is clear that we must have more airlift, complemented by fast sealift, to meet the global challenges to our national interests.

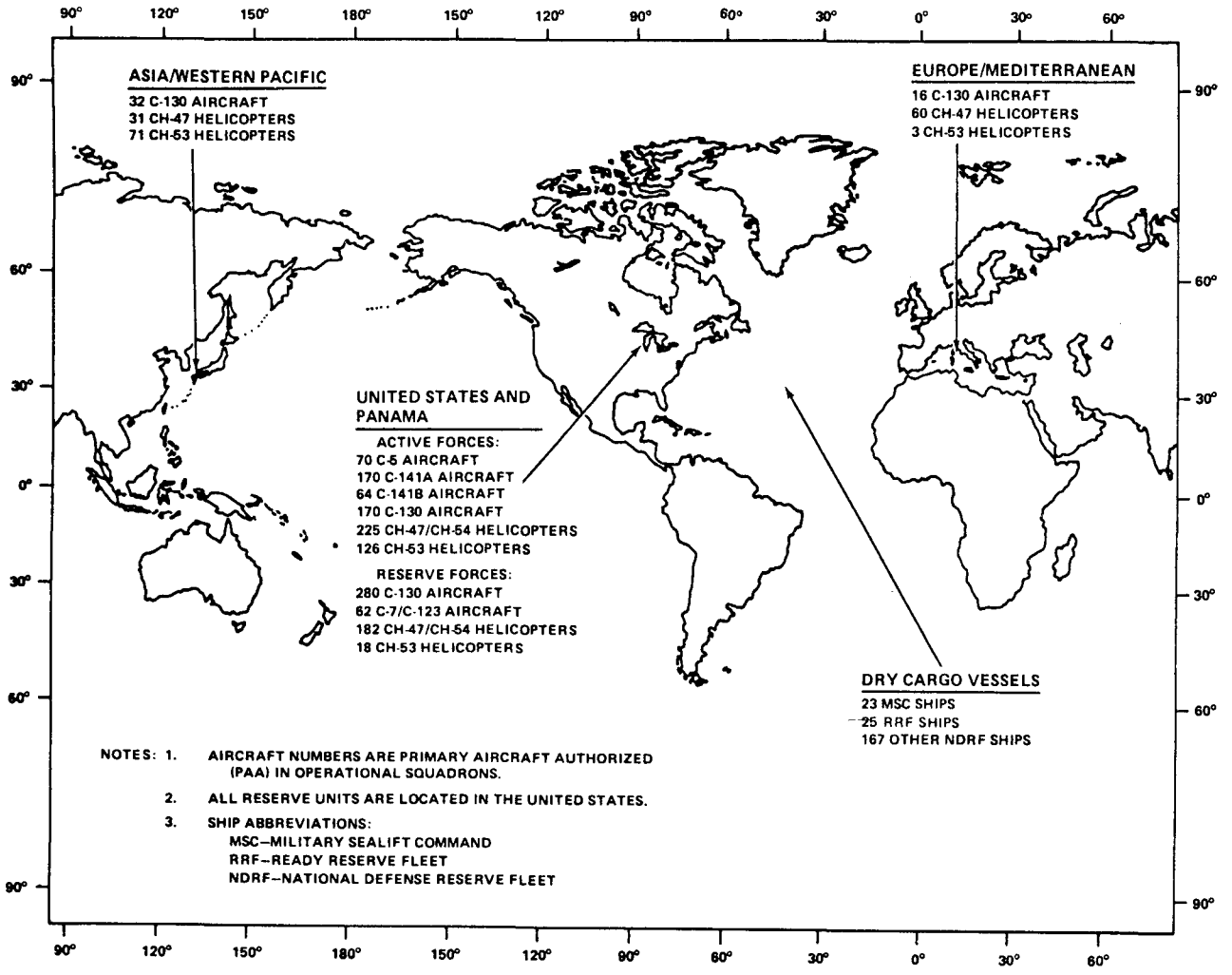
II. PROGRAM DESCRIPTION

A. Force Structure

The peacetime location of our mobility forces changes from day to day, because they regularly fulfill the transportation demands of our forward-deployed forces as well as essential training requirements. Chart 7-1 shows the normal basing of our major organic mobility assets. Not shown are the civil assets committed to DoD use in time of war or national emergency: the Civil Reserve Air Fleet (CRAF), consisting of 231 passenger aircraft and 111 cargo-carrying aircraft, and the U.S. Flag Merchant Fleet containing 280 dry cargo ships. Of these vessels, 170 are available by charter or government contract under the Sealift Readiness Program, which operates at no direct cost to DoD.

CHART 7-1

Normal Basing of U.S. Mobility Assets



B. Assistance from Allies

For years, we have counted on the use of the ships of our NATO allies for reinforcement of Europe. Within the last year, our NATO allies, excluding France, have also committed 55 of their long-range cargo-capable aircraft for this purpose. Discussions are now underway to determine if additional aircraft could also be earmarked for European reinforcement. The NATO Civil Aviation Planning Committee is also exploring, for the first time, the possibility of using for NATO reinforcement some of the over 300 long-range passenger aircraft now operated by our European allies. While U.S. civil carriers can offer sufficient passenger lift, a similar European program would use resources otherwise uncommitted, and would increase our ability to meet the goals of simultaneity.

C. Airlift Improvements

Current airlift improvement programs take maximum advantage of opportunities for modernization and more effective use of existing assets to limit the need for procurement of new aircraft. Nevertheless, we must procure additional airlift aircraft if we are to meet our overall objectives.

1. C-5 Wing Modification

Correcting structural deficiencies in the wings of the C-5A, which are limited in use because of a 7,100-hour safety limit, will extend the service life of the aircraft by 30,000 hours. Production line operations scheduled from FY 1982 through FY 1987 will result in the modification of all 77 aircraft, thus preserving the only available aircraft for transporting outsize Army equipment, such as the XM-1 tank and the Infantry/Cavalry Fighting Vehicle.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Modernization
C-5 Wing Modification				
Development:				
$ Millions	13.0	11.0	15.9	13.7
Procurement				
Quantity	4	12	18	18
$ Millions	87.7	166.7	248.1	292.2

2. C-141 Stretch/Refueling Modification

Scheduled for completion in June 1982, stretching the C-141 fleet will increase the lift capability of each aircraft by about 30 percent, while minimizing additional operating, training, and manning costs. The air refueling option adds enormously to our capability to respond to a distant contingency when en route basing and overflight rights may be limited.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
C-141 Stretch/Refueling Modification				
Quantity	124	33	--	--
$ Millions	134.0	119.1	47.0	--

3. Increased C-5 and C-141 Utilization

Our present inventories of spare parts and levels of aircrew manning will not permit attainment of the wartime utilization goal of these aircraft. To meet our goal, we are purchasing additional spares and increasing the Reserve Associate C-5 crew ratio to 2.0 crews per aircraft by end of FY 1984.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Increased C-5 and C-141 Utilization				
Parts Procurement:				
$ Millions	--	60.2	347.6	281.9

4. Civil Reserve Air Fleet (CRAF) Enhancement

By compensating U.S. civil airlines for the additional procurement and operating expenses of purchasing cargo-convertible, wide-bodied aircraft, we are increasing our wartime airlift potential at about 10 percent of what it would cost DoD to procure and operate comparable military aircraft. This important program received a valuable boost when the first such contract was signed in August 1980. Although the market for candidate aircraft is currently slack, we expect, as the economic climate improves and new financing initiatives are explored, both increased interest and at least five new offers if current options are exercised this year. Substantial FY 1982 funding is essential to sustain commercial airline interest in participation.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Civil Reserve Air Fleet (CRAF) Enhancement				
Quantity	3	5	6	7
$ Millions	38.6	39.8	87.8	108.9

5. C-X Development

The evolution of modernized heavier weapon systems and the recent crises in Southwest Asia have brought more clearly into focus the need for a new airlift aircraft that will help meet the demands of simultaneity. This aircraft has become known as the C-X. When operational, the C-X is expected to carry, over intercontinental distances, the full range of military equipment, including the new XM-1 tank and other outsize cargo that now can be airlifted only by the C-5. The C-X will also be capable of operating into austere airfields, greatly improving our ability to respond to global contingencies.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
C-X Development				
$ Millions	--	34.6	252.0	375.1

6. Helicopter Modernization

Modernization of the Army's fleet of CH-47 helicopters to the "D" configuration will increase operational capability, will improve reliability and maintainability, and will lower operating costs so that these aircraft can satisfy the Army's expected medium-lift requirements until the year 2000. Procurement of CH-53E heavy-lift helicopters, with double the effective payload of earlier versions, will enhance Marine Assault Force ship-to-shore movements and subsequent operations ashore.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
CH-47 Modernization				
Development				
$ Millions	22.5	0.6	--	--
Procurement				
Quantity	--	9	8	16
$ Millions	81.8	199.3	150.0	222.5
CH-53 Procurement				
Quantity	15	14	--	--
$ Millions	209.8	207.7	253.9	228.3

7. Aerial Tankers

The KC-10 Advanced Tanker/Cargo Aircraft will support long-range, non-stop deployments of tactical fighter and strategic airlift forces. The current program calls for purchase of 12 aircraft. Modification and re-engining of our aging fleet of KC-135s would increase operational effectiveness, while reducing air and noise pollution, with substantial fuel savings. However, a very considerable investment would be required, so the KC-135 re-engining effort is currently being reassessed.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
KC-10 Procurement				
Quantity	4	6	--	--
$ Millions	194.8	327.0	--	--

D. Sealift Improvements

Although it takes several weeks after a decision to mobilize for traditional sealift to deliver forces and supplies, sealift is an important element in projecting and sustaining U.S. forces. Programmed initiatives place emphasis on more rapid response and early availability.

1. Fast Sealift

Our mobility objectives call for developing the sealift capability to move at least one mechanized division and accompanying support to a trouble spot such as the Persian Gulf faster than is now possible with sealift obtained from the civil sector. Such sealift should be readily available at appropriate ports, should be capable of rapid loading and unloading, and must be able to travel at high speeds. The acqusition and conversion of eight high-speed (33 knot) SL-7 containerships will provide a more rapid response for the Army's mechanized forces. This program will provide the capability to deliver a mechanized division plus some non-divisional support and initial supplies to the Persian Gulf in 20 to 26 days, or to the front line in Europe in 15 days.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
SL-7 Fast Sealift				
$ Millions	--	(285.0)*	216.4	232.8

* FY 1982 and outyear programs assume purchase of the 8 SL-7 ships with FY 1981 funds apportioned for acquisition of cargo ships.

2. Ready Reserve Fleet

Selected ships from the National Defense Reserve Fleet (NDRF) are placed in a special readiness status so they can be available for loading within 10 days. Currently, there are 25 such ships in the Ready Reserve Fleet (RRF), with a total of 28 programmed by the end of FY 1981. Plans are to build the RRF to 43 ships, six of which will be tankers, by FY 1986. In addition, the readiness of 10 RRF ships has been advanced to make them available on berth, ready for loading within five days.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Ready Reserve Fleet				
Quantity	2	3	7	6
$ Millions	8.0	10.8	12.1	11.2

E. Prepositioning

To reduce the high demand for airlift and, at the same time, to counter significant Warsaw Pact numerical advantages in the first few days of their mobilization, we are continuing to exploit the advantages of land-based prepositioning, with particular emphasis on NATO's Central Region and Northern Flank. Additionally, two maritime prepositioning initiatives are now in progress.

1. Prepositioned Overseas Materiel Configured to Unit Sets (POMCUS)

At the present time, we have POMCUS in Europe for four divisions--the last set of which is now being completed--and numerous non-divisional supporting units. Establishment of POMCUS for two additional divisions will begin in FY 1982, although storage facility construction will not be completed until mid-1983. Successful completion of these sets will depend both on continued host nation support (especially acquisition of storage sites in Belgium and the Netherlands and funding under the NATO Infrastructure Program) and on procurement of adequate equipment.

There has been considerable concern that, because of equipment shortages due to inadequate funding, forming these sets could reduce the Army's ability to respond to non-NATO contingencies, and could delay the modernization and reduce the fill of reserve units. This year we added substantially to the Army's five-year plans for the procurement of items that are in short supply. Nevertheless, for some years to come, we will not have enough of some items to fill all inventories. Consequently, we must assign priorities for available equipment. Our proposed programs will provide a 10-division force for initial defense in Europe--a capability fully justified in light of the Warsaw Pact threat--and eight active Army and Marine divisions for subsequent reinforcement or for other contingencies--a capability that should be adequate for most non-NATO contingencies.

2. USMC Land-Based Prepositioning

To achieve our strategic reinforcement objectives in Norway, we have included funds in the budget for procurement and prepositioning of initial increments of POL, ammunition, and unit equipment for a Marine Amphibious Brigade in Norway. These initiatives are intended to provide the theater commander with highly mobile, fast-reacting forces, specifically tailored in light of the threat, environmental factors, and method of deployment. Continued host nation political acceptance and funding support are key elements in the full implementation of these important programs.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
USMC Land-Based Prepositioning				
$ Millions	--	5.2	27.8	30.6

3. Near-Term Prepositioning Ships (NTPS)

Recent events in Southwest Asia have underscored the need for the capability to project power to the Indian Ocean region. The NTPS program augments our reinforcement capability in this area without adding political burdens or further compounding the demands on naval forces. Consisting of breakbulk, roll-on/roll-off, and tanker ships controlled by the Military Sealift Command, the program reduces sealift response time and also provides a test-bed for future development of the larger long-term maritime prepositioning effort. Last July, we positioned seven NTPS ships at Diego Garcia.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Near-Term Prepositioning Ships (NTPS)				
$ Millions	--	93.1	104.9	113.3

4. Maritime Prepositioning Ships (MPS)

The long-term MPS program is specifically intended to increase the U.S. capability to respond rapidly to a crisis with a force having considerable firepower, mobility, and anti-armor capability. It entails prepositioning USMC equipment and 30 days of supplies for three brigade-sized MAGTFs in commercial

shipping manned by civilian crews. In time of crisis, fixed-wing aircraft will be flight-ferried, and troops, helicopters, and some small amounts of equipment not suitable for prepositioning will be airlifted to the objective area. Response time would be 10 days or less, depending on the amount of warning. Our goal is to preposition one MAGTF by the end of FY 1983, another by FY 1985, and a third by FY 1987.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
Maritime Prepositioning Ships (MPS)				
T-AKR Conversions* $ Millions	--	--	93.9	173.8
T-AKR 14 Class Construction $ Millions	--	33.0	243.5	222.0

* Includes acquisition costs.

CHAPTER 8

NATO PROGRAMS

I. PROGRAM BASIS

While NATO's importance in deterring hostile assaults on Western security interests is unquestioned, its long-term effectiveness is threatened by the steady buildup of Soviet military capability over the past 20 years. The United States has taken the lead in pressing NATO to improve its war-fighting potential in all areas and to accelerate selected programs already planned to meet key deficiencies. NATO also considers it in the basic interests of the Alliance that members use their best efforts to help achieve peace and stability in Southwest Asia.

A. NATO Long-Term Defense Program (LTDP)

The NATO Long-Term Defense Program--a key U.S. initiative adopted at the 1978 Washington Summit to address selected deficiencies in forces, equipment, and procedures--represents a major expansion of NATO cooperative defense planning through its emphasis on improving both individual and collective capabilities. The ten priority categories of the LTDP are:

-- enhanced readiness;

-- rapid reinforcement;

-- strengthened European reserve forces;

-- improvements in maritime capabilities;

-- integrated air defenses;

-- command, control, and communications;

-- electronic warfare;

-- rationalized procedures for armaments collaboration;

-- measures to promote logistics coordination and to increase war reserves; and

-- theater nuclear modernization.

B. Post-Afghanistan Measures

The December 1979 Soviet invasion of Afghanistan added new urgency to Allied efforts, under the LTDP and other cooperative programs, to increase the deterrent and defense capabilities of NATO. Allied military authorities developed a set of priority measures, drawn from country force goals and the LTDP, which they recommended for early acceleration (Phase I). These measures--which focus on war

reserve ammunition stocks, electronic warfare, air defense, and nuclear, biological, and chemical defense--were accepted by Ministers at the May 1980 Defense Planning Committee (DPC) meeting for early action (i.e., within 12 months).

Afghanistan also raised the possibility that U.S. forces would have to be deployed in support of U.S. and Western interests beyond the NATO treaty area. NATO examined the impact of such U.S. force deployments and drew up a broad list of measures that would help offset their impact and ensure the maintenance of a credible allied posture. These measures address force readiness, reserve mobilization, war reserve stocks, reinforcement airlift, maritime defense, host nation support, and military aid to Turkey and Portugal. These Phase II proposals were adopted for early implementation by Ministers at the December 1980 DPC meeting.

II. PROGRAM DESCRIPTION

A. Rationalization/Standardization/Interoperability (R/S/I)

Calendar year 1980 witnessed significant progress in these very complex and difficult fields, which involve national political attitudes, economic interests, and military sensitivities. In particular, important progress was made on our three-way approach of Memoranda of Understanding, Families of Weapons, and Dual-production, as well as in other cooperative programs.

1. General Procurement Memoranda of Understanding (MOUs)

The common theme underlying this initiative is the elimination of "buy national" restrictions and the opening of markets to reciprocal competition. In 1980, bilateral MOUs were signed with Denmark and Turkey, bringing to 11 the number of such agreements with NATO countries. Negotiations are nearing completion with Greece.

2. Families of Weapons

The families of weapons concept of cooperative weapons development offers the single most comprehensive approach to the rationalization of Alliance research and development activities. The potential for savings is enormous, and the progress to date is very encouraging. This innovative new concept involves early identification of weapon system development requirements in various military fields and agreement on a division of responsibilities for development. This initiative takes into account national expertise, establishes an equitable distribution of agreed tasks, and reduces duplication of efforts. In August 1980, after two years of negotiation, the first family of weapons MOU--for air-to-air missiles--was signed by the United States, the United Kingdom, and Germany. France has signed as an observer. The Europeans will develop a short range missile, while the United States will develop the Advanced Medium-Range Air-to-Air Missile (AMRAAM). Discussions with France, Germany, and the United Kingdom continue on a family of Anti-Tank Guided Weapons (ATGW), following the signing in March 1980 of an MOU for exchange of information on third-generation ATGW systems concepts and technology. The U.S. Army is reviewing the requirement for the man-portable system, while a European consortium has begun concept development on a vehicular-mounted system. Discussions also are underway on a family of advanced naval mines and a family of air-to-ground munitions.

3. Dual-production

Dual-production of weapon systems can reduce unnecessary duplication in both research and development. Under this approach, a nation that has developed a system useful to others in the Alliance would permit other nations or a consortium of nations to produce the entire system or portions of it.

Key dual-production programs include:

a. F-16 Fighter Aircraft

The F-16 program satisfies NATO mission requirements for a light-weight, high performance, multi-mission fighter that can perform a wide range of tactical air warfare tasks. Four European governments--Belgium, Denmark, the Netherlands, and Norway--are participating with the United States in the F-16 Multinational Fighter Program. The European participants are not only procuring F-16 aircraft, but are also teamed with the United States for the co-production and co-assembly of F-16s. The basic procurement program calls for the development/production of 650 U.S. and 348 European F-16s. Standardization between U.S. Air Force and allied F-16s is closely coordinated through the F-16 Multinational Configuration Control Board. In addition to U.S. plans to procure a larger number of F-16s than called for in the original agreement, the Netherlands is considering acquisition of an additional 111 F-16s in a follow-on program. The United States and the Netherlands have reached agreement on the specific co-production arrangements associated with the initial segment (22 aircraft) of the Dutch follow-on buy. The U.S. and European air forces have recently completed 18 months of successful joint operational tests and tactics development efforts.

b. AIM-9L SIDEWINDER Air-to-Air Missile

This missile is under production in Europe by a four-nation, German-led consortium (Germany, Norway, Italy, and the United Kingdom).

c. ROLAND Air Defense System

This all-weather, short-range air defense system is being produced in the United States under license from France and Germany. Joint testing has been conducted and a Joint Improvement Program has been initiated to simplify engineering change procedures. ROLAND is the most significant European system to be adopted by the United States.

d. PATRIOT Surface-to-Air Missile

Six European nations have signed an MOU with the United States for the purpose of acquiring PATRIOT as a replacement for NIKE HERCULES as a high-altitude air defense system. The NATO PATRIOT Management Office is conducting a survey of European production capability to determine whether the system can be produced in Europe.

e. 120mm Tank Gun

In 1978, the United States selected the German 120mm smooth-bore tank gun for future incorporation into the XM-1 tank. The gun will be

produced in the United States on license from Germany. Initial delivery of the XM-1 equipped with the 120mm gun is currently scheduled for late 1984.

f. Multiple Launch Rocket System (MLRS)

This NATO Cooperative Project, under a July 1979 MOU, includes U.S. development of the basic system, with British and French financial contribution, and German development of a scatterable mine warhead. In a declaration of intent signed in July 1980, the four nations agreed to negotiate a supplemental MOU to establish a joint development program for a terminally guided, anti-armor warhead. The four participating nations are also negotiating a production supplement to the basic MOU.

g. Forward-Looking Infrared Seeker for Missiles (MOD FLIR)

Germany will co-produce this module, which can be employed in a number of systems, both for its own use and for sale to other nations.

h. MAG 58 Machine Gun

This armor machine gun has been adopted by the U.S. Army for the M48, M60, and XM-1 tanks, as well as for the IFV/CFV. Following procurement of an initial quantity from Belgium, the weapon will be produced in the United States by a subsidiary of the Belgian manufacturer.

i. Squad Automatic Weapon (SAW)

Following competitive evaluation of several candidates, the U.S. Army selected the Belgian FN MINIMI (XM 249) to proceed to the maturation phase in its squad automatic weapon program. A procurement decision is scheduled for early 1982.

j. M-483 155mm Artillery Round

The Netherlands and the United States signed an MOU in October 1980 that will lead a European consortium to produce this round. Germany, Italy, and the United Kingdom have already joined the consortium, and other European NATO allies are expected to join in the future.

k. STINGER Surface-to-Air Missile

Discussions are underway with Germany on the subject of an MOU for European production of this air defense system, which can be carried by an individual soldier.

l. Multi-functional Information Distribution System (MIDS)

Six NATO nations recently finished a year-long study of MIDS candidate technologies and possible operational applications as a potential communications-navigation-identification system for NATO. The basic candidate is the U.S. Joint Tactical Information Distribution System (JTIDS), which will be

operational aboard U.S. and NATO AWACS forces in mid-1983 and will soon enter full-scale development for other U.S. tactical platforms. Follow-on NATO activity will focus on development for the military requirement and on NATO Standardization Agreements (STANAGs) for both equipment (MIDS) and the associated message standard (Link 16).

4. Other Cooperative Programs

a. NATO Airborne Early Warning and Control (AEW&C) Program

The largest single commonly funded project ever undertaken by NATO nations, this program is the most significant cooperative acquisition effort the Alliance has achieved to date. The NATO AEW&C Program includes Alliance acquisition of 18 E-3A AWACS aircraft; the United Kingdom's "in-kind" contribution of 11 NIMROD aircraft; modifications to make a number of European ground radar and communications sites compatible with the AEW&C aircraft; and upgrading of several European air base facilities to accommodate the NATO AWACS aircraft. The interoperable "mixed force" of NATO-owned E-3As and the United Kingdom's NIMROD aircraft will greatly increase Alliance detection, warning, and control capabilities to defend against low-altitude air attacks. The NATO AEW&C force will achieve an initial operational capability in 1982.

The procurement contract for NATO's acquisition of 18 E-3As has been signed, and preparations for the main E-3A base at Geilenkirchen, Germany, are well underway. The first NATO E-3A is expected to be flown to Germany by March 1981 for installation of mission avionics. In anticipation of delivery of the first operational aircraft to NATO in early 1982, crews from many Alliance nations already are training in the United States to learn how to maintain, fly, and operate the E-3A system.

This unprecedented 13-nation cooperative program is a clear demonstration of the vitality and commitment of the Alliance members to work together to improve defense capabilities. With the NATO AEW&C force in place, NATO will gain distinctive advantages in all-altitude surveillance, warning, and control, and will be in an enhanced position to deny a surprise air attack capability to Warsaw Pact forces.

b. NATO SATCOM Gapfiller

In the satellite communications area, NATO recently determined that a space segment gapfiller was needed to span the period from mid-1983 to mid-1987. This gap intervenes between the potential availability of the NATO III satellites now in orbit and the expected operational date of the next generation of NATO satellites. To fill this potential gap, NATO agreed to procure from the United States one additional NATO III satellite, with an option for a second. Procurement action is underway. The NATO program will be mutually beneficial since it provides another possible resource for national use under emergency conditions in accordance with NATO and U.S. contingency arrangements.

c. Tactical Command and Control

EIFEL/DISTEL I is a tactical air offensive command and control system that will enhance our abilities to conduct a sizeable air campaign in central Europe. Procurement of the German EIFEL/DISTEL system by the United States will represent a major improvement in interoperability. We have encouraged our Allies to install the same system in the control center in the Netherlands so that all offensive air command and control in the Central Region will be performed on a common, fully interoperable system.

d. NATO Air Command and Control System (ACCS)

ACCS is a very large new program that will integrate all of the offensive and defensive C^3 for air operations in NATO. It will tie together the NADGE, NAEW, MIDS, NIS, offensive air C^2, and weapon systems in one large, coherent command and control structure. NATO is currently completing organizational revisions in order to increase the management effectiveness of the program, and is forming an engineering team to design and develop the ACCS. Initiation of the program is expected in early 1981.

e. JP-233 Program

The United States and the United Kingdom have been participating in a joint program to develop a low-altitude airfield attack weapon system (called JP-233). When costs are measured against performance capabilities, no other available alternative has been found to be as cost-effective as JP-233. This is a significant R/S/I cooperative program, not only because of its military potential, but also because it is the only cooperative project in which an allied nation is performing all of the development work. The United Kingdom views U.S. participation in this program as an important demonstration of U.S. commitment to cooperative development programs with Alliance partners. The program was in full-scale engineering development with completion expected on schedule in mid-1984, but unfortunately, the Congress deleted the appropriation for JP-233 from the 1981 DoD budget. Unless reversed, that decision will force us to terminate our participation in the program in Spring 1981.

f. U.S. RAPIER Acquisition

In an innovative step, the United States will procure RAPIER air defense systems for the protection of undefended U.S. air bases in the United Kingdom, while the United Kingdom will man and operate the RAPIER systems. U.S. air bases in the United Kingdom, which would be heavily used for early deploying tactical air operations, must be protected from low-altitude attack. The arrangement may prove to be precedent-setting for NATO in that a host nation would provide manning for the operation of air defense at U.S. facilities. As executive agent, the U.S. Air Force is currently negotiating an MOU with the United Kingdom on this program. Negotiations on the MOU are expected to be completed in early 1981.

g. Enhanced Mutual Logistics Support

One of the primary problems we have faced in improving the ability of NATO's forces to train and to fight effectively has been the inability of U.S. forces to exchange logistics support easily with our NATO allies. In August 1980, the President signed into law the NATO Mutual Support Act of 1979, which overcomes many of the inhibiting restrictions of the Defense Acquisition Regulation and the Arms Export Control Act. This action solved many of the immediate logistics exchange problems we have experienced in dealing with NATO countries. It is anticipated that this new legislation will materially enhance the logistics readiness of the U.S. forces deployed in Europe and adjacent waters.

5. NATO Armaments Planning and Cooperation

a. Periodic Armaments Planning System (PAPS) and NATO Armaments Planning Review (NAPR)

The PAPS trial, currently underway within NATO, is a test of cooperative procedures in the pre-feasibility and feasibility phases of the life cycle of weapon systems. PAPS will provide a means of encouraging cooperation at an early point in system development.

The NAPR, which was approved by the Conference of National Armaments Directors in October 1979, is based on national armament replacement schedules and military assessment of the required level of standardization by the major NATO Commands. Results of analyses will assist nations in identifying opportunities for cooperation.

B. Host Nation Support (HNS) Initiatives

In conjunction with our overall effort to improve Alliance defense--especially in light of possible diversion of U.S. reinforcements to Southwest Asia--we have pressed our NATO Allies to increase the amount of host nation support they would provide to U.S. forces in wartime. Obtaining additional HNS has long been a high priority effort, as we consider our forces allocated to Europe to be considerably short of the logistic support they would need to conduct sustained operations of the intensity envisioned in that theater. However, if the United States had to deploy ground and air forces to Southwest Asia (where logistic demands would be greater and reasonably assured levels of local support would be far less), there could be even fewer U.S. support forces (per unit of remaining combat power) available in Europe. Consequently, our need for HNS in Europe has increased dramatically.

Our NATO Allies were already promising us large amounts of HNS and now we are asking them for more. Negotiations to this end have been in progress for over a year and are progressing well.

C. European Military Construction and the NATO Infrastructure Program

Current U.S. policy is that construction of military facilities required in Europe and elsewhere in the NATO area qualify for allied common funding under

the NATO Infrastructure Program to the maximum extent practical. NATO infrastructure funding eligibility normally applies to those military facilities that are for total NATO common use, for joint use by designated NATO forces of two or more countries, or for sole use of designated NATO forces from one country for the fulfillment of assigned NATO missions. The last usage, in particular, is supported by a wide range of facilities on NATO airfields, where one or more squadrons of tactical or combat supporting transport units are stationed or designated for deployment in times of crisis or war.

There are 14 major categories of infrastructure. Within them, common funding is applied to a wide variety of NATO requirements, including such facilities as hardened aircraft shelters, war headquarters, automated C^3, NATO Integrated Communications Systems (NICS), air defense, prepositioned ready storage for reinforcing forces, petroleum storage facilities and pipeline systems, missile launch sites, secure nuclear warhead storage, naval support storage and supply bases, and certain NATO training facilities for multinational use.

The cost of each NATO infrastructure project is shared by all of the 13 NATO nations having committed military forces (excludes Iceland). Sharing is increased to 14 nations where France participates, such as the air defense category, or by exception on other selected projects. The program is managed by the nations through NATO international staffs and permanent national representatives on active NATO committees in permanent session. These procedures are carried out on the basis of collectively developed criteria and agreed rules, under which program financial ceilings and national cost shares also are negotiated, normally for five-year periods, but mid-term reviews and revisions have been necessary recently due to inflation and expanding requirements.

The most recent agreement on cost shares was reached in May 1979. The changes in country percentage contribution since 1950 are shown in Table 8-1.

TABLE 8-1

COST SHARING FORMULAS

SLICES	PAST									CURRENT	
	I	II-VII	VIII-XI	XII-XV	XVI-XXV		XXVI-XXX [1]			XXXI-XXXV	
	COST SHARING APPROVED IN										
	1950	JUN 1960 [2]	FEB 1957	FEB 1961	JAN 1966 [3]	SEP 1966 [3]	MAY 1975 Normal [4]	MAY 1975 Normal [3]	MAY 1975 Special [4]	DEC 1979 [4]	DEC 1979 [3]
COUNTRY	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Belgium	13.18	5.462	4.39	4.24	4.61	5.30	5.5520	4.8215	5.5520	5.5912	4.8446
Canada	--	6.021	6.15	5.51	5.48	6.31	6.3132	5.4825	6.3132	6.3578	5.5087
Denmark	--	2.767	2.63	2.87	3.07	3.54	3.7012	3.2142	3.7012	3.7273	3.2296
France	45.46	15.041	11.87	12.00	13.16	--	--	13.1580	--	--	13.2209
Germany	--	--	13.72	20.00	21.86	25.18	26.3585	22.8902	26.3585	26.5446	22.9996
Greece	--	0.750	0.87	0.67	0.65	0.76	0.7932	0.6888	0.7932	0.7932	0.6888
Italy	--	5.681	5.61	5.97	6.58	7.58	7.9313	6.8877	7.9313	7.9873	6.9206
Luxembourg	0.45	0.155	0.17	0.17	0.18	0.20	0.2115	0.1837	0.2115	0.2130	0.1846
Netherlands	13.64	3.889	3.51	3.83	4.23	4.87	5.1026	4.4312	5.1026	5.1386	4.4524
Norway	--	2.280	2.19	2.37	2.59	2.98	3.1197	2.7092	3.1197	3.1417	2.7222
Portugal	--	0.146	0.28	0.28	0.30	0.35	0.3701	0.3214	0.3701	0.2011	0.2011
Turkey	--	1.371	1.75	1.10	1.10	1.26	1.3238	1.1497	--	0.8045	0.8021
United Kingdom	27.27	12.758	9.88	10.50	10.42	12.00	11.9950	10.4167	11.9950	12.0797	10.4665
United States	--	43.679	36.98	30.85	25.77	29.67	27.2279	23.6452	28.5517	27.4200	23.7583
TOTAL	100.00	100.000	100.00	100.00	100.00	100.00	100.0000	100.0000	100.0000	100.0000	100.000

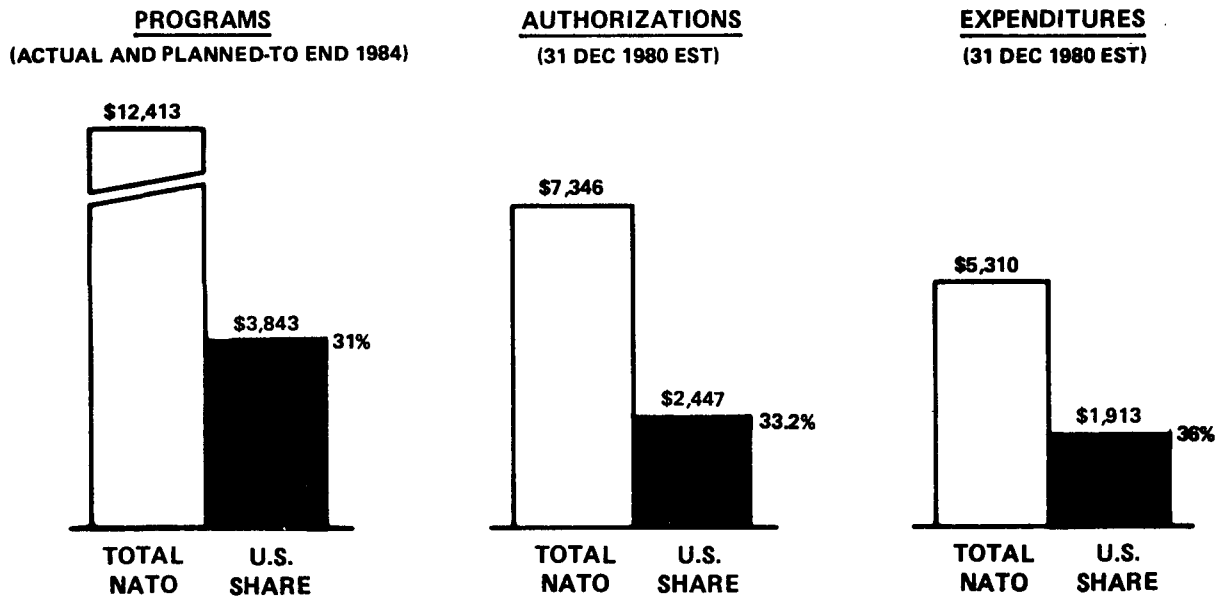
1/ Inclusion of U.S. Special Program reduces U.S. Share to 21.56 percent.
2/ This formula replaces the shares previously applied in Slices II, III, IVa, and IVb to VII.
3/ With France.
4/ Without France.

All NATO deliberations about infrastructure projects involve ultimate cost-sharing by each NATO country participating in the common funding, so all related decisions must be unanimous. Should any contributing country not agree, approval is thereby blocked or deferred until the objection is resolved. However, the give-and-take aspects involved normally result in timely resolution of the problem.

The total NATO capability made possible by this common funding arrangement is far greater and more balanced militarily than it would be if individual nations were required to proceed independently. (Chart 8-1 displays the U.S. share of total NATO funding.)

CHART 8-1

INFRASTRUCTURE FINANCIAL SUMMARY 1951-1984
PROGRAMS THROUGH SLICE XXXV; AUTHORIZATIONS AND EXPENDITURES
(IN $ MILLIONS)



During the last two years, infrastructure planning and programming have been tied more and more closely to the new and updated demands of the LTDP. One tangible result is NATO establishment one year ago of the Reinforcement Support Category, which permits common funding of storage facilities for equipment prepositioned in Europe, in ready-for-issue unit sets, for NATO-committed reinforcing forces, and for storage of sustaining ammunition supplies and war reserve equipment. We are proceeding rapidly with related U.S. projects; some already exist, and others are being programmed or are now under construction.

We have been making a concerted effort in recent years to streamline the procedures through which we plan, program, and budget funds for U.S. construction in Europe--both national and NATO-funded. Our efforts have been focused on improvements in:

-- sorting out U.S. and NATO priorities for construction projects and services needed by the U.S.;

-- determining proper sources of funding (NATO, U.S. national, or host nation support);

-- ensuring phased coordination between NATO-funded facilities and U.S.-funded facilities that do not qualify for common funding;

-- providing advance notice to NATO commands and host nations of our NATO infrastructure and U.S. national military construction requirements and priorities;

-- setting annual goals for, and seeking expeditious recoupments of funds from, NATO projects previously prefinanced by the United States; and

-- considering NATO Military Commanders' priority statements and project lists in evaluating the composition of U.S. programs and project priorities.

Both the level and the rate of programming NATO-funded infrastructure are increasing. The five-year (1980-1984) program ceiling agreed to by the NATO DPC and the North Atantic Council in May 1979 is almost 85 percent higher than that agreed to for the previous five years, but heavy inflation has sharply reduced its effect in real terms. Because there are high priority requirements far beyond the amount agreed upon, and because common funding is the surest way to meet the requirements of all NATO countries, the United States is actively supporting a SACEUR and SACLANT request for allied agreement to a substantial increase in the agreed ceiling at the mid-term of the five-year program.

Even though inflation is taking its toll, the rate of funding for these military facilities is increasing. The increased rate of project execution is reflected in the annual financial authorizations listed in Table 8-2. This acceleration is also reflected in the increasing level of our annual requests to support projects for implementation and in the increasing financial provisions made available by the Congress to meet the current U.S. share of 27.4 percent.

Despite our interest in qualifying more U.S. construction in Europe for common funding, many requirements, such as barracks and logistics projects to improve the quality of life and working environment for U.S. and allied military personnel, do not qualify. As NATO nations have different views about the nature, need, and extent of such facilities, we have found that such non-operational requirements are better funded either nationally or bilaterally. This also makes it possible to concentrate the infrastructure common funds on those operational facilities required to carry out NATO missions in wartime, which is the purpose of the Infrastructure Program.

TABLE 8-2

STATUS OF INFRASTRUCTURE AUTHORIZATIONS BY CATEGORY ($000)

BY CATEGORY	AUTHORIZATIONS DURING FY 1979 ACTUAL (1)	FY 1980 ACTUAL (2)	FY 1981 (ESTIMATE) (3)	FY 1982 (ESTIMATE) (4)	UNITED STATES SHARE DURING FY 1979 ACTUAL (5)	FY 1980 ACTUAL (6)	FY 1981 (ESTIMATE) (7)	FY 1982 (ESTIMATE) (8)
Airfields	95,562	154,370	293,405	342,230	22,949	58,366	67,327	100,982
Communications	87,650	66,283	129,404	139,404	23,050	30,252	39,096	51,483
War Headquarters	75,225	109,304	156,177	156,177	21,009	38,252	36,653	51,340
POL Facilities	41,401	36,106	60,794	60,797	11,323	16,229	16,252	19,943
Naval (Fleet) Facilities	35,965	32,473	60,321	60,321	9,836	14,670	22,458	27,796
Warning Installations*	49,611	56,260	116,344	162,152	13,569	20,162	29,460	53,297
Training Installations	6,431	6,957	11,204	11,204	1,759	3,129	2,760	3,610
SAM Sites	21,850	16,491	29,689	29,689	5,976	4,812	7,806	10,207
SSM Sites	8,634	8,365	--	--	5,177	2,914	--	--
SAS Sites	--	--	--	10,000	--	--	--	3,286
Forward ST STS/MISC	89,390	154,603	193,680	243,680	24,894	48,653	41,596	80,094
Special Interst Projects	32,484	33,510	44,049	44,049	8,884	12,611	11,132	12,000
Currency Adjustment	34,225	--	--	--	10,000	--	--	70,000
Reinforcement Sup. Cat.	--	1,689	1,825	3,000	--	631	460	962
TOTAL	578,428	676,416	1,096,892	1,262,703	158,426	250,681	275,000	415,000

D. NATO Common Training

Common training can strengthen the collective capabilities of NATO. It has a direct and beneficial influence on the development of common military doctrine and military procedures, unified command and control arrangements, cooperative logistics support, and standardized weapons and equipment. A major example is the joint jet pilot training program just approved by the NATO Defense Ministers in December. It will begin at Sheppard Air Force Base, Texas in October 1981. This project will be the largest truly cooperative training program undertaken by NATO, with the 12 participating NATO nations sharing costs and providing staff and instructor pilot personnel. The program, which utilizes U.S. facilities and German and U.S. training aircraft on a cost-sharing basis, will initially train about 240 jet pilots and 80 instructor pilots and will eventually produce about 320 jet pilots and 110 instructor pilots per course.

To encourage common training, the members of the Alliance agreed to a reciprocal training arrangement known as STANAG 6002. The STANAG calls for the various members to open their training programs to other members, charging only those additional costs actually incurred because of the presence of other NATO trainees. This arrangement enables the Alliance to make the most effective use of the training facilities of the various members, avoiding needless duplication and providing a degree of common training that otherwise would not be possible.

Under existing law, the United States cannot comply fully with the terms of STANAG 6002. We must charge all but indirect costs and administrative surcharges for training provided to the NATO allies. These charges are fixed by prorating program costs among all trainees, U.S. and NATO, even though no additional costs are incurred by the inclusion of NATO trainees in existing U.S. programs. The inability of the United States to adhere to the incremental cost principle established by STANAG 6002 has been a source of irritation out of proportion to the modest sums involved.

To remedy this situation, we have proposed an amendment to Title 10 of the U.S. Code that would allow the United States to charge only true incremental costs under STANAG 6002. This legislation would also apply to Australia, New Zealand, and Japan. This proposed legislation is of the highest DoD priority. Its passage would not give the NATO countries, Australia, New Zealand, or Japan a free ride. Rather, they would pay whatever additional costs are incurred by the United States because of their trainees. In addition, passage of this legislation would assist our efforts to promote greater rationalization, standardization, and interoperability.

E. Sharing the NATO Defense Burden

The question of an equitable distribution of the burden of NATO's defense deserves serious attention. We have an obligation to the American people to be sure that the United States is not carrying an excessive proportion of the load. It is equally important to the vitality and effective functioning of NATO itself that the defense burden be fairly apportioned. Historically, alliances have become subject to internal fissures, and eventually cleavages, when some members began to believe that other members were not contributing adequately to the common security. Thus, while there is no question that an adequate NATO defense requires the commitment of substantial resources by all of the NATO nations, disagreement often arises over whether the burden is being shared equitably among the member nations.

Certain well-publicized indicators (e.g., share of gross domestic product (GDP) allocated to defense) suggest that the United States carries more than its fair share of the NATO defense burden. However, other indicators, several of which are not widely known, temper that view.

Long-range trends are important in any assessment of relative efforts within the Alliance. Throughout the 1970s, overall real defense spending by the Allies increased by an average of around two percent per year, while U.S. expenditures continued to decline until 1976. As a result, our share of total NATO defense spending (excluding inflation) fell from around 65 percent of the NATO total in the early 1970s to around 55 percent in recent years. Real aggregate allied spending increased about two percent in 1978, 2.5 percent in 1979, and--based on preliminary data--it should rise by about 1.9 percent in 1980. During the past decade, many of our allies also have been allocating a growing share of their budgets to capital expenditures.

Moreover, in assessing relative efforts, we need to consider outputs--forces--as well as inputs--defense spending. For example, a number of the European nations obtain their manpower through conscription. If we compute allied manpower costs at U.S. pay rates, non-U.S. NATO defense spending rises over 20 percent, with total defense outlays about equal to those of the United States. However, this figure averages in low-cost (Greece and Turkey) conscripts with others (Germany and the Netherlands) whose per-person cost approaches that of U.S. volunteers.

The United States does allocate a larger share of its GDP to defense than most of our allies. A good deal of the difference between U.S. and allied defense spending levels (and share of GDP allocated to defense) results from our providing most of the strategic and tactical nuclear resources of the Alliance--a role that, because of our non-proliferation policy, we are not anxious to share with our allies.

he Allies maintain approximately three million men and women on active duty, compared with about two million for the United States. If we include reserves that have specific assignments after mobilization, the allied total is over six million, in comparison to about three million for the United States. The Allies in peacetime provide 90 percent of the land forces and 75 percent of the aircraft deployed in Europe as a whole (the fraction is smaller for the Central Front). In the first 30 days of a mobilization, our allies would supply roughly two-thirds of NATO's aggregate ground combat power in the Center, and at any stage they would provide almost all of NATO's ground forces on the flanks.

National commitments cannot be measured in terms of defense outlays and resource commitments alone. Western Europe, not North America, is the potential battlefield in a conventional war. Our European allies contribute the entirety of their civil infrastructure to the potential war effort. The Allies also contribute a large chunk of their tax base to the NATO defense effort. The casernes occupied by U.S. troops, the airfields, and the other defense facilities in Europe all represent a contribution to the defense infrastructure that is denied commercial application and is excluded from the tax base. Germany alone foregoes an estimated $1 billion annually in rents and taxes for facilities occupied by U.S. forces.

The NATO Infrastructure Program is a good example of how burden-sharing has worked in practice within the Alliance. This commonly funded program has been in existence since the early 1950s, and it has provided many of NATO's operational military facilities, such as airfields, aircraft shelters, communication facilities, and air defense warning installations. Although we account for roughly half of the GDP of all Alliance nations combined, our contribution to the NATO Infrastructure Program in recent years has been on the order of only 20 to 30 percent. Moreover, we have in recent years obtained more in facilities than we have contributed, and we expect this favorable ratio to continue. As Alliance initiatives for NATO standardization and rationalization are implemented, we expect an increasing number of programs to be commonly funded through the NATO infrastructure or other formalized sharing arrangements.

Non-military economic assistance to underdeveloped countries is not included in the NATO definition of defense spending. Nevertheless, it is considered by a number of European allies as an important share of their contribution to world security and stability. Germany's large economic aid program for Turkey, for example, contributes significantly and directly to the Alliance's strength and well-being. If Official Development Assistance (ODA) as computed by the Organization for Economic Cooperation and Development is included as a contribution to international security, the disparity between U.S. and allied contributions is reduced. Norway spends 0.93 percent of GDP for ODA; the Netherlands, 0.93 percent; and Denmark, 0.75 percent, while the U.S. ranks much lower (above only Italy) with 0.20 percent of GDP devoted to foreign economic assistance.

F. The Three Percent Commitment

The goal of increasing each member's total defense spending "in the region of three percent per year in real terms" for the 1979-1986 period was adopted by NATO nations in 1977 in response to the steady improvements in Warsaw Pact--particularly Soviet--capabilities. NATO's objective is to obtain the

resources needed to ensure that Alliance capabilities--both conventional and nuclear--balance those of the Soviet Union and its satellites. Country performance in achieving the three percent increase has been uneven, but the United States continues its efforts to lead by both example and persuasion. Despite uncertain political and economic conditions in a number of countries, the Allies remain committed to meeting the three percent goal.

III. CONCLUSION

The success of NATO in deterring threats to the security of allied nations--in Europe, North America, or wherever our vital common interests are at stake--is central to the security of the United States. During my four years as Secretary of Defense, the U.S. Government has worked hard to restore Alliance defenses. In Summit meetings--first in London in 1977 and then in Washington in 1978--we and our NATO allies studied the threats and developed a detailed Long-Term Defense Program for essential improvements in 10 key areas. We also looked at the resources required to reach those goals and judged that, in the course of the next 10 years, if all members achieved a three percent real annual increase in their defense budgets, NATO could meet those goals as long as we also stretched ourselves to do the job as efficiently and effectively as possible.

We now face a new and grave challenge--which also must be met--in Southwest Asia. While the NATO military authorities have developed new measures for Allied action in the wake of Soviet aggression in Afghanistan, it is clear that the major part of the burden in meeting the security requirements of Southwest Asia necessarily will fall on the United States. We have already accomplished a great deal and plan to do more in meeting Southwest Asia needs. This effort will consume billions of U.S. defense dollars that would otherwise have gone towards improving defenses in Europe. The Allies must do more to maintain and improve Western defenses in Europe, to accommodate augmented infrastructure requirements, and to meet the increased host nation support needs of U.S. military forces, so that NATO's ability to contain the increasing Warsaw Pact threat is not eroded.

The evolving security situation in Europe and Southwest Asia and a radically changing strategic situation make even more essential the already urgent requirement for NATO to accelerate the achievement of its goals. In pursuing this objective, we are pressing hard for more equitable sharing of the common defense burden among the Allies, as well as for achievement of the three percent annual real increases in defense spending by member countries in order to help meet the force and equipment objectives agreed to in the LTDP. Indeed, we also are encouraging the Allies to accelerate implementation of the LTDP, the post-Afghanistan measures, host nation support, and a greatly expanded infrastructure program. Many of these measures are well under way; others are still in the formative stages. But we believe firmly that full implementation of these important programs will revitalize NATO and leave it better able to meet the grave challenges it is likely to face in the coming decades.

CHAPTER 9

SECURITY ASSISTANCE

I. PROGRAM BASIS

A. Introduction

We have consistently urged a greater and more flexible security assistance program. In the present international political and security environment, security assistance serves U.S. interests by strengthening the ability of our allies and friends to defend themselves against threats to their national security. By assisting other nations in meeting their defense needs, we, in turn, strengthen our own security.

B. DoD-Administered Programs

The Secretary of State has the statutory responsibility to determine the direction and extent of annual Security Assistance Programs and to provide overall supervision and control of each program. The Department of Defense administers the following programs:

1. Military Assistance Program (MAP)

MAP provides defense articles and services other than training to foreign governments on a grant basis. This particular program, which is more than thirty years old, is scheduled to be phased out at the end of FY 1981. Although the Administration is not proposing a MAP grant materiel program for FY 1982 and beyond, there are areas of the world where concessional military aid is needed; for example, such aid is included for Turkey in the FY 1982 budget. The MAP program as such includes $68.2 million to cover only continuing requirements for general costs and program termination costs.

2. Foreign Military Sales (FMS)

Excluding the Military Assistance Service Funded (MASF) grant program, FMS has been, since FY 1964, the major portion of our security assistance effort. The FMS program enables the Department of Defense to sell defense articles, services, and training to eligible foreign governments. At the end of CY 1980, some 99 countries and three international organizations were authorized to participate in this program. In FY 1980, FMS agreements totalled $15.3 billion and FMS deliveries equalled $7.7 billion. Total FMS sales are estimated at $15 billion for FY 1981 and the same amount for FY 1982.

3. Foreign Military Sales Financing

The U.S. government provides financing assistance in the form of direct loans or guaranteed loans, normally through the Federal Financing Bank (FFB), to foreign governments for the purchase of equipment or services from the

U.S. government or directly from contractors. In FY 1982, an FMS financing program of $3,780.9 million is being proposed for 44 countries. This includes a proposed program of $200 million in FMS direct credits to Turkey.

4. International Military Education and Training Program (IMET)

The Department of Defense, through the IMET program, provides training and training support to foreign personnel as grant assistance. In FY 1982, IMET is planned for students from 71 countries, eight more than planned for FY 1981. A $35.7 million program is being proposed for FY 1982. The new pricing procedures for IMET, approved by Congress for FY 1981 under an amendment to the Foreign Assistance Act (FAA), should increase significantly the number of students participating in the program.

C. Non-DoD Administered Programs

There are three other security assistance programs that are not administered by the Department of Defense, but complement the Defense-implemented programs.

-- Economic Support Funds (ESF), which are administered by the Agency for International Development under the direction of the Department of State, represent a form of economic assistance for countries in which the United States has a special political or security interest. ESF may be designated as either grant or loan assistance. In FY 1981, ESF totalled $2,024.5 million and this figure is expected to rise in the future as new programs and new requirements, such as the Indian Ocean facilities, are planned.

-- Peace Keeping Operations (PKO) funds are administered by the Department of State. PKO funds totalled $25 million in FY 1981, but we have asked for only $19 million in FY 1982 because of the scheduled phase-out of the Sinai Support Mission during that fiscal year.

-- The third form of security assistance consists of direct exports through commercial channels of items controlled by the Department of State's Office of Munitions Control, in accordance with the International Traffic in Arms Regulations (ITAR).

D. Statutory Authority

The Congress provides the statutory authority for MAP, FMS financing, IMET, and the other forms of security assistance in annual security assistance legislation, which is separate from legislation authorizing and appropriating funds for other DoD programs. Foreign military sales may be transacted on a cash basis, or may be financed with U.S. credits provided or guaranteed by security assistance appropriations. In credit transactions, the purchasing government reimburses the United States in full, normally with interest tied to current borrowing rates. The sole exception has been the "forgiveness" portion of the FMS credits, which requires no repayment and is authorized by statute for Israel. FMS concessional

direct credits, if approved by the Congress, would be reimbursed in full by the recipient countries, but at a much lower interest rate.

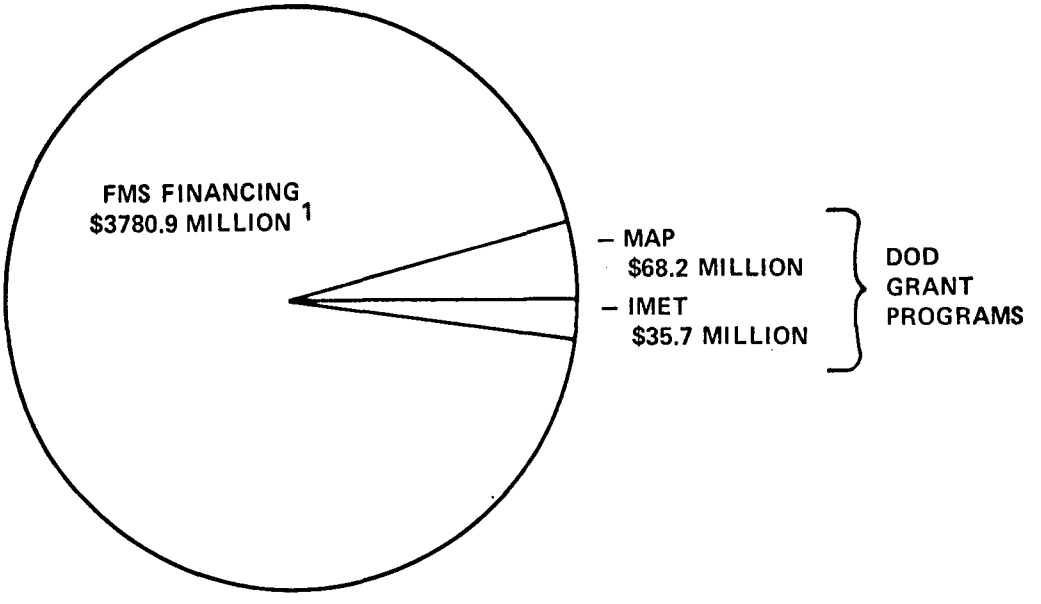
E. Trends in Security Assistance

As Charts 9-1 and 9-2 show, grant military aid represents a very small portion of the U.S. security assistance effort. In the past, grant assistance constituted a major share of our security cooperation program. With the scheduled phase-out of MAP at the end of FY 1981, the grant portion will be reduced further. In FY 1980, the MAP program amounted to $147.4 million and involved only four countries. The MAP program is projected at $144.4 million in FY 1981, and thereafter the program will cover only administrative and MAP termination costs previously noted. In FY 1982, these costs will total $68.2 million (of which an estimated $34.7 million will be reimbursed), after which they are expected to rise through FY 1985 to reflect inflationary trends.

Since FY 1964, foreign military sales have constituted the major part of our total security assistance. In FY 1980, FMS agreements totalled $15.3 billion, reflecting both the increased ability of foreign governments to purchase U.S.

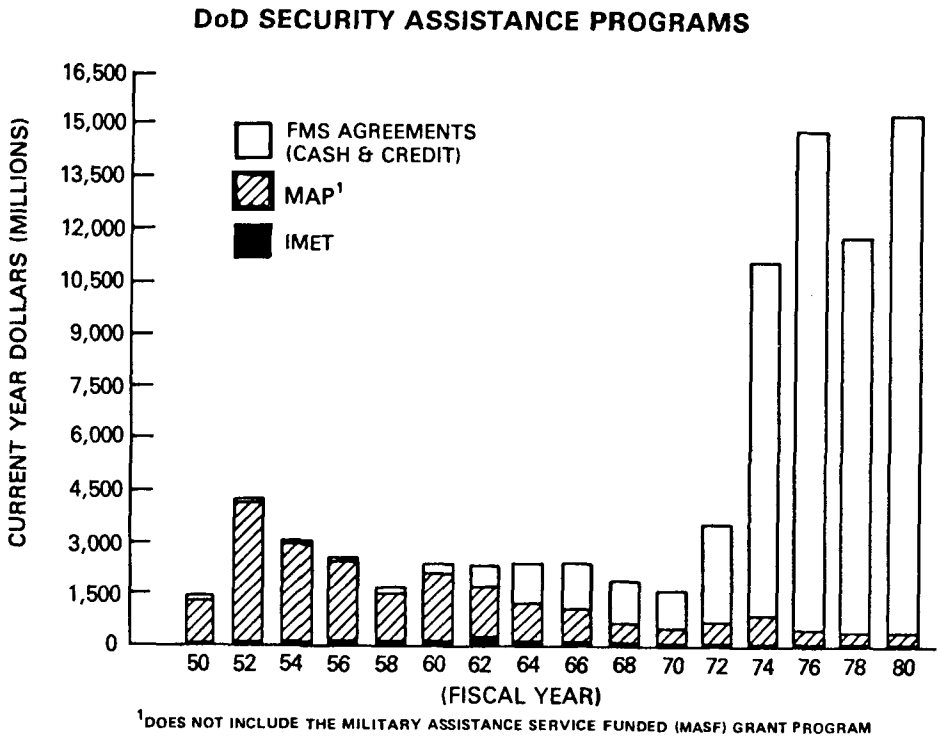
CHART 9-1

(RECOMMENDED)
RELATIVE PORTION OF DOD ADMINISTERED SECURITY ASSISTANCE PROGRAM FY 1982



1 THIS FIGURE INCLUDES THE PROPOSED $850 MILLION IN DIRECT CREDITS. IT DOES NOT INCLUDE FMS CASH SALES.

CHART 9-2



equipment, training, and services, and the concomitant decline in U.S. grant aid programs. This figure includes FMS purchases by exempt and non-exempt countries under the President's conventional arms transfer policy. Total FMS sales are estimated at $15 billion for FY 1981 and the same amount for FY 1982.

An FMS credit program of $3,780.9 million is being proposed for FY 1982, up from the projected $3,046.2 million for FY 1981. During the next three fiscal years, we project unadjusted FMS financing, including concessional aid, to be $3,659 million, $3,539 million, and $3,539 million, respectively. However, experience suggests that these projections will increase as requirements continue to grow.

Prior to FY 1981, IMET tuition was calculated on the basis of full direct and indirect costs, other than military pay and allowances. Under the FY 1981 legislation, IMET costs will include only those additional costs for foreign students not otherwise incurred for the training of U.S. personnel. This would facilitate a healthy growth in the number of foreign students. In FY 1981, the IMET program is projected at $28.4 million and is expected to increase to $35.7 million in FY 1982 with participation from 71 countries. The numbers of students and of participating countries are expected to grow after FY 1982.

F. Arms Export Control Board (AECB)

The Arms Export Control Board (AECB) was established to help manage the implementation of the International Security Assistance and Arms Export Control Act (ISA/AECA) of 1976, which integrates existing legislation on arms transfers, increases the security assistance oversight role of Congress, and specifies the procedures the U.S. government follows on arms transfer issues. The Board is composed of senior members of the Department of State, the Office of the Secretary of Defense, the Joint Chiefs of Staff, the National Security Council, the Arms Control and Disarmament Agency, the Agency for International Development, the Treasury Department, the Office of Management and Budget, the Commerce Department, and the Central Intelligence Agency. The Board is chaired by the Under Secretary of State for Security Assistance, Science, and Technology. The AECB functions in an advisory role to the Under Secretary of State, not in a decision-making capacity. Among other functions, it:

-- prepares the annual security assistance funding programs, budget submissions, and proposed program changes;

-- reviews security assistance plans and programs to ensure that they support U.S. policies, are fully coordinated with other policy instruments, and include human rights and arms control considerations;

-- reviews key transfers of defense articles and services to ensure that they are consistent with overall U.S. policies and objectives; and

-- provides for a systematic and comprehensive policy oversight of arms transfer issues.

II. DESCRIPTION OF REGIONAL SECURITY ASSISTANCE PROGRAMS

A. Western Europe and NATO

Europe (including the southern Mediterranean flank) is, after North America, the region of the world most vital to U.S. security interests. Our security assistance programs in Europe are intended to reinforce the shared Alliance goals of strengthening the defense capabilities of NATO and of assisting other friendly and neutral countries in maintaining their independence. In recent years, the political cohesiveness of the NATO alliance, especially the southern flank, has taken on added importance.

FMS cash sales continue to be the primary element of our security assistance effort among NATO allies. Within NATO, only Greece, Portugal, and Turkey participate in the IMET and FMS financing programs. We are proposing to assist Turkey through increased FMS credits at concessional rates in order to meet its armed forces modernization goals and to continue its NATO mission. In cooperation with NATO allies, we are willing to consider assisting Portugal in modernizing its naval forces. The FMS program operates to support NATO efforts toward standardization, rationalization, and interoperability. For example, through sales

of TRIDENT submarine-launched ballistic missile systems to Great Britain, anti-ship and air-to-ground missiles to Greece, and TOW launchers/missiles to Denmark, we strengthen the defensive capability of NATO allies in Central and Southern Europe.

Non-NATO countries in the European region--Austria, Finland, Ireland, Spain, Sweden, Switzerland, and Yugoslavia--also participate in security assistance programs through FMS cash sales. The U.S.-Spanish Treaty of Friendship and Cooperation, which will need to be renegotiated upon expiration in September 1981, commits us to a major security assistance role, including FMS credits and IMET. Illustrative sales to non-NATO countries include howitzers to both Austria and Switzerland and SEA SPARROW missiles to Spain. All are intended to assist friendly and neutral countries' continuing contribution to the security of Western Europe.

B. Middle East, Persian Gulf, Indian Ocean, Southwest Asia

Preserving the stability and security of countries throughout the region has become one of the most vital and sensitive interests of the U.S. government, and it will remain so for many years to come.

Our security relationship with regional states is a direct reflection of U.S. national interests, both near- and long-term. Our special relationship with Saudi Arabia is promoted by cash sales aimed at strengthening Saudi security through modernization of its armed forces. The largest share of Saudi purchases consists of military-related construction and services.

Our security assistance relationship with Israel reflects our continuing commitment to the security of Israel and its security importance in the region. This cooperative relationship is based on our long-term goal of promoting regional stability by means of a comprehensive peace settlement, including a resolution of the issue of Palestinian autonomy. Our growing assistance program with Egypt is likewise designed to encourage Egyptian leadership to continue the pursuit of peace with Israel and to assist in promoting regional stability and cooperation. It is also intended to facilitate the modernization of Egyptian armed forces so necessary after years of deterioration and decline. Recent sales to both countries include M-60 tanks, F-16 aircraft, and other (mostly ground and air) equipment and services.

We have sizable security cooperation programs with Jordan and Lebanon, as well as important ones with the Yemen Arab Republic and Persian Gulf states. Each program provides tangible evidence of our political and military support for regional stability and modernization in this dynamic region. Our security assistance program with Oman is based, in part, on Omani cooperation with our planning for Indian Ocean facilities access requirements. The sale of M-60 tanks to Jordan to improve its armor defense against hostile threats, of SIDEWINDER missiles to Oman to defend against hostile aircraft, and of Improved HAWK missiles to Kuwait to improve its air defense capability, are prime examples of our commitment to regional security.

The lingering crisis in our relation with Iran means continued suspension of our security assistance program, including the military items already paid for.

In the wake of the Soviet invasion of Afghanistan, our security assistance program and our concern for the security and stability throughout Southwest Asia and South Asia have increased. We are continuing to review our security assistance relationship with Pakistan in order to devise means for assisting that nation to defend itself against threats to its security. In South Asia, we continue to administer training programs for India, Bangladesh, Nepal, and Sri Lanka, and we have cash sales programs with Pakistan and India.

C. East Asia and the Pacific

The tensions and instabilities in parts of the region require a vigorous security assistance program. The continuing conflict in Southeast Asia has prompted friendly countries in the region to request increased security assistance to strengthen their defensive capabilities for handling internal and external threats. Against a background of mounting internal and regional tension, Thailand, Malaysia, the Philippines, Singapore, and Indonesia have each moved to buttress their armed forces. The sale of F-5E fighter aircraft to Singapore enables this friendly and moderate country to improve its air defense capability. The transfer of various defense equipment, including M48A5 tanks, to Thailand will increase its ability to defend against threats to its security.

The strategic location of the Republic of Korea and the threat posed by North Korea require us to assist the ROK through both qualitative and quantitative force improvements in maintaining their ability to deter external aggression. Continuing security assistance can help the ROK to achieve greater military self-sufficiency.

Japan, Australia, and New Zealand, exempt countries under the President's conventional arms transfer policy, continue to participate in FMS cash sales programs. Each country must maintain armed forces sufficiently strong to deter external threats and to play a major role in regional defense. The sale of a guided missile frigate to Australia, and the acquisition by Japan of SIDEWINDER missiles, PHALANX naval air defense systems, and HARPOON anti-ship missiles, illustrate the continuing security commitment to our allies in this region.

D. Africa

Historically, our security assistance to African countries has been modest and has emphasized IMET training. Africa's strategic location, its vast raw materials reserve, and the conflicts throughout the continent combine to make our security assistance program a significant element of bilateral relationships. Our planned increases in security assistance programs in Southern Africa are to assist newly-independent and emerging nations in the sub-region to adjust to fast-paced political change and to maintain stability in the face of persistent economic difficulties.

Recently-concluded agreements with Kenya and Somalia are linked to our requirements for access to facilities in the Indian Ocean region. Throughout the continent, we have security assistance programs that are intended to foster growth and internal stability, to promote both our influence and the security interests of friendly countries, and to demonstrate U.S. support for developing nations. The sale of F-5E aircraft to Kenya and a variety of aircraft including the OV-10A to Morocco, and the pending sale of the I-CHAPARRAL missile to Tunisia, are designed to improve these countries' self-defense capability for meeting threats to their security. Each program illustrates our growing security relationship with African nations.

We are proposing IMET programs with 25 countries and FMS financing programs with 13 countries in Africa. These programs are intended to increase our influence among leadership elements in these countries and to offer an alternative to Soviet influence.

E. Western Hemisphere

For years, our security assistance programs in Central America, South America, and the Caribbean areas consisted of modest levels of FMS financing and IMET. The pattern began to change in FY 1981 and will continue in FY 1982. Our assistance programs are focusing particularly on the Central American and the Caribbean sub-regions in response to growing pressures and tensions. The era of minimal-cost security on the southern flank of the United States is over.

The improvement of economic conditions in the region, the encouragement of democratic institutions, and the further development of professionalism among regional armed forces, remain the primary goals of our security assistance relationships to the South. Our major effort will concentrate on enabling Caribbean and Central American countries to cope with security threats, through enhanced maritime capabilities, armed forces improvements, and orderly economic development. In FY 1980, no major defensive equipment requiring formal Congressional notification was sold to countries in this region. However, if the regional security environment does not improve in the next few years, significant transfer of defense articles and services, and provision of IMET and FMS training may be required.

III. WORLDWIDE SECURITY ASSISTANCE CONTINGENCIES

U.S. national interests at times dictate that urgent foreign requests for military equipment be met by taking the equipment from U.S. force inventories. This may adversely affect U.S. force readiness. We are investigating a means of procuring high demand, short supply items in anticipation of these urgent foreign requirements in order to minimize the adverse affects on U.S. force readiness.

IV. CONCLUSION

(U) Table 9-1 summarizes by region, the FY 1980 actual, FY 1981 estimated, and FY 1982 recommended program costs. The table shows that a major portion of MAP costs are program management, administrative, storage, and termination costs; for

FY 1982, the entire proposed MAP program is budgeted for these general costs. For our FMS credit program, the Near East/ Persian Gulf/Indian Ocean/Southwest Asia region commands the largest portion of the actual, estimated, and recommended costs.

Security assistance will continue to play an important role in assisting friends and allies in meeting their essential defense requirements for the foreseeable future. There is little likelihood that the international security environment will allow for any reduction in the current levels of our assistance programs. The more likely scenario is that these programs will expand to meet changing international security requirements. Our programs will, and should continue to, complement other non-DoD, U.S.-administered bilateral and multilateral assistance efforts.

Table 9-1

DoD Administered Programs
Fiscal Years 1980-1982
(Percent of Total)

	(Actual) FY 1980 (Percent of Total)			(CRA) 1/ FY 1981 (Percent of Total)			(Recommended) FY 1982 (Percent of Total)		
	MAP	FMSCR	IMET	MAP	FMSCR	IMET	MAP	FMSCR	IMET
Europe/NATO	26.5	24.0	26.4	37.8	17.9	25.7	--	23.0	22.7
Near East/Persian Gulf/Indian Ocean/ SW Asia	19.2	58.3	19.0	--	68.3	18.6	--	63.1	18.6
East Asia/Pacific	18.7	13.0	17.1	17.3	9.9	15.9	--	9.4	17.2
Africa	--	3.8	10.8	1.2	2.4	13.4	--	2.7	15.3
Western Hemisphere	0.1	0.8	26.2	--	1.5	25.8	--	1.8	25.5
Non-Regional General Costs 2/	35.5	--	0.5	43.7	--	0.6	100.0	--	0.6
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
TOTALS ($M)	147.4	1950.0 3/	25.0	144.4	3046.2 3/	28.4	68.2	3780.9 3/	35.7

1/ Figures are based on the FY 1981 Continuing Resolution Authority (CRA). Regional computations for the FY 1981 IMET program are tentative.

2/ This includes administrative costs for managing existing programs. The MAP administrative costs include overseas program management, the costs of administering major field commands, storage and maintenance, MAP owned materials, and program termination costs as multi-year programs end.

3/ Figures include only estimates for FMS financed agreements.

CHAPTER 10

COMMAND, CONTROL, COMMUNICATIONS, AND INTELLIGENCE

I. PROGRAM BASIS

A. Missions and Functions

Command, control, communications, and intelligence (C^3I) systems support day-to-day operations, rapid assessment of warning indications, allocation of resources in crisis situations, and the conduct of military operations in wartime at all levels of conflict. They provide timely assessment of a tactical situation and a means of coordinating the accomplishment of mission objectives.

B. Major Needs

The key areas in which our C^3I capabilities need improvement are:

-- capability to support evolving strategic missions (e.g., rapid deployment and protracted nuclear conflict);

-- survivability, in support of our countervailing strategy for strategic forces and for effective control of long-range theater nuclear forces;

-- resistance to jamming and exploitation; and

-- improved interoperability among systems for joint operations and combined operations with our allies.

II. PROGRAM DESCRIPTION

Our C^3I systems and programs are both numerous and interrelated. Chart 10-1 lists the major systems, displayed by major functional category.

CHART 10-1

C^3I PROGRAM OVERVIEW

STRATEGIC COMMAND AND CONTROL

- E-4 Advanced Airborne Command Post
- Worldwide Military Command and Control System (WWMCCS)
- Post-Attack Command and Control System
- WWABNCP

THEATER AND TACTICAL COMMAND AND CONTROL

- E-3A/NATO AWACS
- Joint Crisis Management Capability
- JINTACCS
- NATO Identification System
- ETACCS/ACCS

STRATEGIC COMMUNICATIONS

- AFSATCOM
- TACAMO
- ALCS Phase III
- SACDIN
- SVGC
- ERCS

STRATEGIC SURVEILLANCE AND WARNING

- Satellite Early Warning System -- Mobile Ground Terminals
- BMEWS/PARCS/DEW
- OTH-B
- Space Surveillance
- PAVE PAWS
- IONDS

TACTICAL COMMUNICATIONS

- ECCCS/Cemetery Net
- TRI-TAC
- JTIDS
- SEEK TALK
- SINCGARS-V
- TACSATCOM II
- PLRS
- PLRS/JTIDS HYBRID

RECONNAISSANCE, SURVEILLANCE, AND TARGET ACQUISITION

- TR-1
- Joint Tactical Fusion Program
- OTH Targeting
- E-2C
- PLSS
- Quick Look
- GUARDRAIL
- TEREC
- TEAMPACK/TRAILBLAZER

ELECTRONIC WARFARE AND COUNTER-C^3

- EF-111A
- ASPJ
- EA-6B
- SLQ-32

DEFENSE-WIDE PROGRAMS

COMMUNICATIONS

- DSCS II, III
- Secure Voice Improvement Program
- Digital European Backbone
- European Telephone System
- Base & Support Comunications--DMATS
- AUTODIN II

INTELLIGENCE

- Consolidated Cryptologic Program
- General Defense Intelligence Program
- Special Activities
- Defense Foreign Counterintelligence
- Tactical Cryptologic Program
- Defense Reconnaissance Support Program

NAVIGATION AND POSITION-FIXING

- NAVSTAR Global Positioning System
- Microwave Landing System

INFORMATION SYSTEMS

- WWMCCS Information Systems
- Automated Message Handling System
- Computer Security
- WWMCCS Intercomputer Network (WIN)

A. Strategic, Theater, and Tactical C^3I Initiatives

1. Overview

In this chapter, we describe C^3I programs that provide support to multiple functional areas. C^3I programs that directly support strategic and theater nuclear, land, naval, and tactical air capabilities and our NATO-related initiatives are not covered in this chapter. Rather, they are presented in detail in the chapters dealing with those forces.

2. Joint and Multi-Service Programs

a. Interoperability

The program for Joint Interoperability of Tactical Command and Control Systems (JINTACCS) has been divided into five functional segments: intelligence, amphibious, fire support, operations control, and air operations.

Control of the Tactical Air Control System/Tactical Air Defense System (TACS/TADS) configuration management testing will be transferred to the JINTACCS Program from the Navy on October 1, 1981. This transition is currently underway.

b. Joint Crisis Management Capability (JCMC)

The JCMC program will provide CINCEUR, CINCPAC, and CINCRED with a highly mobile C^3 capability for use in crisis management situations and military contingency operations, including those of a Rapid Deployment Joint Task Force (RDJTF).

c. Joint Tactical Fusion Program (JTFP)

The JTFP was established to assist battlefield commanders in assessing current enemy situations and selecting targets through a correlation of intelligence data from multiple sources.

A plan for the Joint Tactical Fusion Development and Acquisition Program was prepared in response to Congressional direction. The JTFP outlines a strategy for moving to competitive full-scale engineering development using applicable technology from the Battlefield Exploitation and Target Acquisition Project and other existing programs.

d. Information Distribution for Tactical Forces

The Joint Tactical Information Distribution System (JTIDS) will provide improvements to Navy data links and will add a data link to Air Force tactical aircraft. Follow-on developments include applications for Air Force and Navy tactical fighters, Navy combatant ships and E-2C aircraft, Army and Marine Corps field unit management, and JTIDS-compatible programs of NATO allies.

The Army and Marine Corps will begin procurement of the Position Location Reporting System (PLRS) to improve battlefield management of small units. Army development also has begun on a PLRS-JTIDS hybrid system to aggregate PLRS information at the brigade level and above, via tactical JTIDS terminals.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
JINTACCS				
Development: $ Millions	37.0	40.5	45.9	51.8
JCMC				
Development: $ Millions	--	3.9	3.9	4.3
Procurement: $ Millions	--	14.3	43.3	--
JTFP				
Development: $ Millions	--	15.8	17.7	48.4
PLRS				
Development: $ Millions	11.1	11.9	10.0	11.0
Procurement: $ Millions	--	--	72.9	87.2

e. Electronic Warfare and Command, Control, and Communications Countermeasures (EW and C^3CM)

Electronic Warfare involves both preventing the enemy from using the electromagnetic spectrum, as well as retaining friendly use. EW is an important part of C^3CM, which includes integrated use of operations security, deception, jamming, and physical destruction in order to counter enemy C^3 capabilities and to protect friendly C^3. The major programs for which we are requesting FY 1982 funding are described below:

The MLQ-34 is a track-mounted VHF/UHF communications jammer that commenced full-scale production last year. In FY 1982, we are requesting $46.8 million to procure 14 units of the total planned buy, which will be completed in FY 1985.

The ALQ-165 Airborne Self-Protection Jammer (ASPJ) System is being jointly developed for Navy and Air Force aircraft to meet the projected EW threat. In FY 1982, we will continue full-scale development with the one contractor team competitively selected in FY 1981, and we will be building prototype systems for subsequent test and evaluation. The Navy RDT&E request includes $24.2 million for the ASPJ program, and the Air Force RDT&E request includes $55.6 million.

For the older Navy aircraft that will not receive ASPJ, we must update the currently deployed self-protection system, the ALQ-126A, to meet the threat. We are requesting $15.7 million in FY 1982 for this purpose.

The ALR-67 Radar Warning Receiver, now in transition to full-scale production, will provide a significant improvement in warning capability against future threats in Navy aircraft. The digital processor from the ALR-67 will be installed in place of the older analog processor in older Navy aircraft that will not be upgraded to the full ALR-67 capability. We are requesting $2.9 million for procurement of ALR-67 systems in FY 1982.

The Air Force is requesting $264.3 million to continue the modification and follow-on testing of the EF-111A Tactical Jamming System. This year's increment will fund production of 12 aircraft. We also are requesting $147.8 million to continue the production of the EA-6B at the rate of two per year.

B. Intelligence Programs

1. National Intelligence

National intelligence is used by force planners and those who develop weapon systems. Within the Defense portion of the National Foreign Intelligence Program (NFIP), there are five intelligence programs--the Consolidated Cryptologic Program, the General Defense Intelligence Program, the Air Force and Navy Special Activities, and the Defense Foreign Counterintelligence Programs.

a. Consolidated Cryptologic Program (CCP)

The Consolidated Cryptologic Program is managed by the Director, National Security Agency/Central Security Service and includes all signals intelligence (SIGINT) resources in the NFIP. Intelligence derived from SIGINT provides information on political, scientific, and economic matters, as well as the deployment and status of potentially opposing forces, and insights into military technological advances often not obtainable by other means.

b. General Defense Intelligence Program (GDIP)

The General Defense Intelligence Program includes all Defense intelligence activities in the NFIP except SIGINT and specialized national programs.

GDIP efforts support the readiness and employment of U.S. forces. Intelligence needs are determined by missions assigned to DoD and its components that require intelligence information as a basis for weapons and materiel research and development, and in support of contingency planning and wartime operations. The GDIP supports simultaneously the highest national-level users, major commands, and tactical users of intelligence.

c. Air Force and Navy Special Activities

These specialized programs provide essential information to national policymakers and to force commanders.

d. Defense Foreign Counterintelligence (FCI) Program

This program consists of the counterintelligence activities of the three military Services, including investigations of espionage and operations against hostile intelligence establishments. Also included are collection and production activities to support needs of operational commanders.

2. Tactical Intelligence and Related Activities

Tactical Intelligence and Related Activities (TIARA) is an aggregation of efforts in the military Services and Defense agencies that provide timely intelligence support to operational commanders. These constitute DoD activities outside the NFIP.

During the past year, we continued to improve our capability to provide the multi-source information that is essential to combat commanders and directly related to their missions.

We have made significant progress in defining the intelligence needs of operational military forces, and in developing more effective mechanisms for guidance and review in the Planning, Programming, and Budgeting System (PPBS) process. TIARA efforts are funded in a number of major DoD force programs; however, there are presently three principal groupings: (1) Tactical Reconnaissance, Surveillance, and Target Acquisition; (2) the Defense Reconnaissance Support Program (DRSP); and (3) the Tactical Cryptologic Program (TCP). These are briefly discussed below:

a. Tactical Reconnaissance, Surveillance, and Target Acquisition

These systems employ a wide range of sensors or platforms to provide intelligence support information to operational commanders. They include active imaging platforms, passive electronic warfare support measures, and target acquisition/designation systems to support tactical strike missions.

In addition to the selected SIGINT assets discussed in the section on the TCP below, there is a set of tactical airborne systems that collect imagery through the use of different sensor packages, including photo, infrared, and radar. These assets are capable of gathering data in all-weather and day-night conditions. Our objective is to improve the capabilities and interaction of these sensors in order to provide timely, 24-hour-per-day coverage of the battlefield.

b. Defense Reconnaissance Support Program (DRSP)

The DRSP is a subset of the total Military Space Program (MSP) and consists of those space resources and activities that primarily support operational military forces. The DRSP will be developed in response to requirements of the Unified and Specified Commands (provided through the Joint Chiefs of Staff) and the military Services, as validated by the Deputy Under Secretary of Defense for Policy Review.

c. Tactical Cryptologic Program (TCP)

The Tactical Cryptologic Program (TCP), managed by the Director, National Security Agency, comprises those efforts of the Services and the National Security Agency that provide direct cryptologic support to theater and tactical combat forces and resources for the conduct of cryptologic training. The TCP also includes NSA research and development efforts related to tactical SIGINT systems. The long-range goal of the TCP is to maintain and to strengthen selectively the capability to provide effective SIGINT to the commanders of combat forces. The immediate objective is to provide a management structure within DoD for tactical SIGINT systems to ensure maximum interoperability and minimum duplication, and to produce a sound R&D procurement, operations, and training base consistent with Service missions, personnel capabilities, and force levels.

3. Intelligence Oversight

Independent oversight of all DoD intelligence and counterintelligence activities is exercised by the Inspector General for Defense Intelligence. This office is responsible for the worldwide inspection of Service and Defense agency intelligence activities, and it also monitors inspection programs to evaluate personnel awareness of, and compliance with, oversight policies. Other functions include the investigation of allegations of illegal or improper activities by intelligence elements, as well as the analysis of investigations conducted by the inspectors general of DoD intelligence components.

C. Navigation and Position-Fixing

The Departments of Defense and Transportation, in cooperation with the Office of Management and Budget and other federal agencies, have jointly published the first Federal Radio-Navigation Plan, which deals systematically with all existing or planned radio-navigation systems commonly employed by both military and civilian users.

1. NAVSTAR Global Positioning System

The NAVSTAR Global Positioning System (GPS) is expected to become fully operational by 1987. Currently in the full-scale engineering development phase, NAVSTAR GPS will provide real-time, all-weather positioning accuracies in a common, earth-centered coordinated frame and will give the United States and our allies a large degree of interoperability.

Tests conducted to date have conclusively shown that the NAVSTAR GPS concept is sound and that 10-meter global accuracies are achievable. The request

for FY 1982 includes funding to continue full-scale engineering development of the satellites, the ground control station, and the parallel user equipment efforts. Also included in the request for FY 1982 are procurement funds for the first two production satellites ($78.6 million).

2. Microwave Landing System

Using Federal Aviation Administration funds, DoD continues to develop tactical derivatives of the new international standard Microwave Landing System (MLS). During FY 1982, DoD funds will be used to fund testing of advanced development hardware.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
NAVSTAR GPS				
Development: $ Millions	159.9	163.0	226.3	166.9
Joint Microwave Landing System				
Development: $ Millions	0.3	0.2	2.0	14.3

D. Base and Support Communications

In FY 1982, we are requesting $1.56 billion for base and support communications. This mission area includes programs to provide and operate communications for military bases, command headquarters, port facilities, and DoD agencies, as well as in support of range and test activities. Also included are mission-unique, Service-wide communications systems and links in support of specific activities, such as the Air Weather Service.

We are continuing the consolidation and automation of telecommunications centers. The majority of DoD consolidation actions will be completed by the end of 1982.

The European Telephone System (ETS) will be the integrated, general-purpose, common-user voice system for U.S. forces in Europe, and will be a component of the Defense Communications System (DCS). Operation and maintenance of the antiquated equipment presently in Europe is difficult and costly. A contract was signed with the German government in November 1978 to buy 112 digital replacement switches for the U.S. Army, 11 switches for the Air Force, and three system control units. The new switches will enhance and modernize the current U.S. forces telephone system, and equipment operation and maintenance will be simplified. We have included $24.7 million in the FY 1982 request for procurement of these ETS switches.

E. Common-User Communications

1. The Defense Satellite Communications System (DSCS)

The DSCS provides super-high frequency (SHF) satellite communications for secure voice and high data-rate transmission. It supports the National Command Authorities, the Worldwide Military Command and Control System (WWMCCS), the Defense Communications System, and many other federal and DoD agencies.

a. DSCS Space Segment

The current space segment consists of four operational satellites located in the Atlantic, the Indian Ocean, the West Pacific, and the East Pacific areas, and two on-orbit spare satellites. A seventh satellite, launched in May of 1977, has partially failed and provides only the capability to test new ground terminal equipment. The next generation DSCS III satellite is in full-scale development and will provide improved communications capacity, greater jamming protection, and longer life. The full-scale production decision will be made by October 1981. In the Spring of 1981, we will launch the first of two prototype DSCS III satellites.

b. DSCS Ground Component

The DSCS Ground Component consists of satellite terminals and communications and control equipment. Procurement funds include satellite terminals for WWMCCS jam-resistant secure communications. In addition, we are continuing the R&D program to ensure the availability of ground equipment to meet future needs.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
DSCS Satellites				
Development:				
$ Millions	24.0	33.2	35.2	24.7
Procurement:				
Quantity	--	1	2	3
$ Millions	17.3	81.6	134.6	211.6
DSCS Ground Component				
Development:				
$ Millions	8.5	15.6	21.0	22.5
Procurement:				
$ Millions	120.8	119.1	120.1	152.9

2. The Defense Communications System

The Defense Communications System (DCS) is a composite of the global switching and transmission systems that provide U.S. military forces with long-distance communications service. It comprises government-owned and commercially leased facilities in order to provide both dedicated and common-user voice, secure-voice, data, teletypewriter, and special-purpose communications. Present transmission facilities of the DCS, particularly in Europe and Korea, consist of equipment that is obsolete and difficult to maintain. There is a need to make the major radio links secure from interception by others, to improve physical security, to increase interoperability with allied systems, and to increase the rate of replacing obsolete equipment. Specific programs are discussed below.

a. Current Operations

The major in-place elements of the DCS are: AUTOVON, a long-distance voice network; AUTOSEVOCOM, a secure-voice system that interfaces with both AUTOVON and dedicated circuits; AUTODIN, a secure message/data network; ARPANET, an intercomputer network; terrestrial transmissions systems; and DSCS, a satellite-derived transmission network. Operational costs are funded by the military Services and Defense agencies.

b. Secure Voice Improvement Program (SVIP)

The objectives of the SVIP are to expand DCS secure-voice service and to improve secure-voice capability. A new DCS secure-voice terminal designed to meet specific user requirements will be used to replace, as a first priority, the aging equipment of the present AUTOSEVOCOM system and, then, to add new (JCS-validated) subscribers to the network. Present planning maximizes the cost benefits of sharing equipment and support services with the civil government Federal Secure Telephone Service (FSTS). Additionally, a Secure Voice Graphics Conferencing program is being developed to provide rapid secure conferencing among major commanders.

c. Digital European Backbone (DEB)

The present DCS in Europe is vulnerable to enemy intercept, it is old, and it is costly to maintain. The DEB will make the DCS system in Europe more reliable and secure, and it will result in significant O&M and manpower reductions.

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
DCS				
Operations:				
$ Millions	442.0	535.0	602.0	616.0

	FY 1980 Actual Funding	FY 1981 Planned Funding	FY 1982 Prop'd Funding	FY 1983 Prop'd for Authorization
SVIP				
Development: $ Millions	3.2	14.2	13.8	4.8
Procurement: $ Millions	--	0.3	1.0	0.5
DEB				
Procurement: $ Millions	9.7	15.0	8.1	8.2

F. Communications Security (COMSEC)

The goal of the DoD Communications Security program is to protect all information carried on federal telecommunications systems and to counter threats against those DoD telecommunications systems that process national security or national security-related information. COMSEC programs assist in prioritization of requirements and support countermeasures developments. Procurement funding includes tactical secure-voice equipment, such as TRI-TAC.

G. Information Systems

The need for rapid, accurate exchange of information among military organizations has made data processing and communications systems increasingly interdependent and has heightened the importance of our ongoing efforts to achieve interoperability among a number of diverse programs. This is being accomplished by modernizing information systems and standardizing equipment and procedures.

1. WWMCCS Information Systems (WIS)

The adequacy of the automated data processing (ADP) computers in the Worldwide Military Command and Control System (WWMCCS) has been questioned by the Congress in the past year. Congressional concerns centered upon the age of the computers, their security, and their ability to support operational commanders. These computers support a wide range of command and control tasks, such as contingency, general war, and force deployment planning, military airlift, ground and sealift management, tactical air operations, warning information correlation, and monitoring of force status and execution. The WWMCCS Standard ADP facilities, which are part of the WIS, require modernization. The preliminary modernization plan was provided to the Congress in January of 1980 and is being followed by a more detailed progress report addressing the DoD-preferred approach to WIS modernization, with supporting costs and schedules. The latter report is being provided to the Congress under separate cover. The FY 1982 budget request contains $19.5 million required to initiate this program.

The intercomputer portion of the WIS, the WWMCCS Intercomputer Network (WIN), has been under study by DoD. Even though experimental, the original prototype WIN (PWIN), which linked a select subnet of WWMCCS locations, was expanded and retained for use. DoD is improving WIN reliability with the understanding that its communications subnet will be replaced by AUTODIN II.

2. Automated Message Handling Systems (AMHS)

During the past decade, DoD has made significant strides in improving message communications. The next step is the application of automation to assist with the preparation, filing, and retrieval of message traffic, particularly during periods of crisis.

The National Military Intelligence Center Support Subsystem (NMIC-SS) has been designated a standard fixed-base AMHS. The National Military Command Center's Information and Display System, which became operational in November of 1979, is based on the NMIC-SS technology. These systems, tailored to the requirements of the command and control community and other intelligence users, will support AMHS needs until the mid-1980s.

The functional requirements for an advanced technology AMHS to meet the needs of both the intelligence and the command and control communities in the mid-1980s and beyond are being defined. This follow-on system, termed the Standard AMHS, will include several features such as multi-level security and real-time applications. These new capabilities will help reduce the system's overall life-cycle cost and will promote interoperability. The Standard AMHS will be integrated into the WWMCCS Information System and the DoD Intelligence Information System.

3. Computer Security

Through DoD-sponsored R&D activities and interactions with the computer manufacturing industry, the DoD Computer Security Initiative is fostering the development of computer systems with sufficient internal integrity to allow simultaneous processing of multiple levels of classified or sensitive information.

CHAPTER 11

RESEARCH, DEVELOPMENT, AND ACQUISITION

I. SUMMARY OF DEFENSE RESEARCH, DEVELOPMENT, AND ACQUISITION

The FY 1982 Department of Defense Budget requests $69.0 billion for research, development, and acquisition (RD&A) activities to support our military posture. Included are $19.9 billion for research, development, test, and evaluation (RDT&E) and $49.1 billion for the procurement of weapon systems and other military equipment and supplies.

RD&A programs for our strategic, theater nuclear, land, naval, and tactical air forces are described in Section II, Chapters 1, 2, 3, 4, and 5, respectively. Therefore, these activities are only summarized in the following strategic and tactical sections of this Chapter. I will describe in some detail the highlights of the DoD Science and Technology Program, will discuss some of the activities of the Defense agencies that contribute to our RD&A goals, will outline a few programs that contribute to Defense-wide capabilities, and will describe some management initiatives we are undertaking to improve the RD&A process.

Tables 11-1 and 11-2 show the fiscal resources allocated for RDT&E and procurement of weapon systems and other equipment stratified into major mission categories.

TABLE 11-1

RDT&E Funding
($Millions)

	FY 1981	FY 1982	FY 1983
Strategic Warfare 1/	3,469	4,435	4,613
Tactical Warfare 2/	5,681	6,990	7,404
Defense-Wide C^3I	1,514	1,968	2,365
Other Defense-Wide Mission Support of Management	2,233	2,774	2,999
Science & Technology Program	3,157	3,754	4,612
TOTAL	16,054	19,921	21,993

1/ Includes Strategic C^3I funding
2/ Includes Tactical C^3I funding

TABLE 11-2

Procurement Funding
($Millions)

	FY 1981	FY 1982	FY 1983
Strategic Forces	5,601	5,745	7,326
General Purpose Forces	31,019	33,856	39,636
Intelligence and Communications	3,818	4,391	5,830
Airlift and Sealift	816	1,240	1,335
Guard and Reserve Forces	1,437	1,413	1,525
Research and Development	--	1	--
Central Supply and Maintenance	1,243	1,250	1,385
Training, Medical, and Other Personnel Activities	505	723	904
Administration and Associated Activities	86	139	212
Support of Other Nations	427	344	199
TOTAL	44,951	49,101	58,352

II. STRATEGIC RD&A OBJECTIVES

Funding for strategic programs is devoted to improving offensive, defensive, and C^3I capabilities. Our strategic offensive programs will reduce the vulnerability of our ICBM force by proceeding with the MX, will maintain the second-strike capability of our SLBM force by continued procurement of TRIDENT missiles and submarines and by further research and development on more advanced SLBMs, and will enhance the effectiveness of our bombers by deploying a cruise missile force and initiating advanced development efforts on a new multi-mission long-range combat aircraft. Strategic defense programs will continue to support technological advances in defensive systems, will reduce the possibility of technological surprise, will provide defensive options to protect strategic offensive forces, satellite systems, and command and control systems, and will provide a surveillance and warning network to detect and characterize hostile actions by aircraft, missiles, and spacecraft. Strategic C^3 programs will result in more survivable C^3, increasing the likelihood that we can control our forces in a trans-attack and post-attack environment, and providing the flexibility to cope with future threats.

III. TACTICAL RD&A OBJECTIVES

Our RD&A strategy for tactical programs is closely tied to the NATO Long-Term Defense Program and our plans for the Rapid Deployment Forces. It takes into account the contributions of our allies, the balance between modernization and readiness, the need for an affordable and cost-effective approach in the selection of new programs, and a reasonable degree of concurrence in development and production in order to shorten the acquisition cycle while ensuring that we take only prudent risks. We are emphasizing the high leverage combat systems and the technologies with respect to which we enjoy an advantage over the Soviet Union. Priority is being given to technologies that enhance the capability to deliver a variety of warheads with a high probability of single-shot kill, even in conditions of limited visibility and countermeasures. Considerable emphasis is also being placed on modernized tactical aircraft and their air-to-air and air-to-ground munitions. Particular emphasis is being given to increasing self-protection capability, reliability, maintainability, durability, and maximum engagement distances. Programs in the naval warfare area will improve our ability to protect shipping, to support overseas forces, and to conduct offensive operations at sea. For theater nuclear warfare, emphasis is on improvement of the flexibility, safety, security, and survivability of medium-range weapons and the acquisition of long-range systems to counter the increasing Soviet capability to attack Western Europe with long-range nuclear weapons. In the mobility area, we are improving our capabilities in airlift, sealift, and prepositioning of equipment on land and at sea.

IV. THE SCIENCE AND TECHNOLOGY (S&T) PROGRAM

A. Program Basis

The S&T Program consists of the Research, Exploratory Development, and Advanced Technology Development Programs. Projects range from long-term fundamental research to "live" demonstrations of new and innovative systems and equipment. The S&T Program combines the efforts of industry, university, and in-house laboratories operating as a team to provide creativity and innovation. I believe that this broad base of knowledge and inventiveness is a key national asset.

In FY 1982 we are requesting $716 million for Research, $2,234 million for Exploratory Development, and $790 million for Advanced Technology Developments. This continues my policy of sustaining real dollar growth in the Technology Base Program. Specific examples of programs underway are described in the following paragraphs.

B. Program Description

1. Very High Speed Integrated Circuits (VHSIC)

VHSIC is a major technology program whose objective is to provide dramatic improvement in our capability to satisfy high-speed, high-throughput signal and data processing needs of military systems for the mid-1980s and beyond. The program seeks to accelerate significantly the development of advanced technology for integrated circuits (ICs) and to provide for the insertion of the developed VHSIC products into high priority military systems. Approximately 50

contracts are underway with universities and industry. The VHSIC Program is a five-year effort with total funding of approximately $225 million. We are requesting $42 million for the VHSIC Program in FY 1982.

2. Rapid Solidification Technology (RST)

Materials made by rapid solidification techniques exhibit an unusually high degree of homogeneity and show exceptional promise for improving the capabilities of our aircraft, missiles, and ordnance equipment. Further, the increased solubility of one metal in another makes new alloys that have superior high-temperature strength, vastly improved corrosion resistance, and increased lifetime. Early application to new aircraft turbine engines shows promise of increasing their performance by as much as 20 percent, while at the same time improving their reliability and useful life. Other RST alloys may take the place of some stainless steels, saving scarce and strategically critical chromium. We are requesting $24 million for RST in FY 1982.

3. Directed Energy Technology

Principal efforts in this area involve the high energy laser and the particle beam technology programs. In FY 1982, we will continue to concentrate our efforts on identifying the scientific and engineering uncertainties associated with these technologies, determining means for their resolution as well as the feasibility and utility of directed energy weapons. We are requesting $308 million for the Directed Energy Program in FY 1982.

4. Chemical/Biological Warfare Defense

Increased attention and resources are being directed to improve equipment for personal protection, detection and warning devices, decontamination, medical antidotes, treatment, simulants, and training systems. A 1980 Defense Science Board Summer Study provided a focus to the chemical warfare effort and resulted in a number of recommendations, now being implemented. We are requesting $44 million for chemical defense S&T programs in FY 1982.

5. Manufacturing Technology

The objectives of this program are to reduce unit production costs and to improve defense industrial base productivity. Illustrative examples of FY 1982 efforts include: improved yields of microwave integrated circuits and traveling wave tubes; advanced composite fabrication methods; advanced adhesive bonding of aircraft structures; more reliable electronic component packaging; advanced metal removal; and turbine blade defect detection methods. Recent examples of completed efforts include: a 50 percent reduction in F-100 turbine disk inspection time using computer-controlled ultrasonic techniques; precision casting of the T-700 titanium turbine engine housing, which not only saved $5 million by reducing machining and welding costs, but also conserves titanium; and automated detonator loading, which improved productivity by 308 percent, resulting in improved safety and a $37 million cost avoidance. We are requesting $219 million in FY 1982 for manufacturing technology.

6. Medical Research and Development

The objective of our medical RDT&E program is to maintain the health and physical effectiveness of our forces. To accomplish this goal, we must become more self-sufficient in developing militarily needed preventive drugs and vaccines because civilian capability to produce these items has declined. The physiological demands of new systems on the human operator require us to find better ways for personnel to operate their equipment and to perform under physical stress in the high-technology battlefield. We are requesting $181 million in FY 1982 for medical research and development to enhance our effectiveness in these areas.

7. Training Technology

We continue to make improvements in the combat readiness of our Armed Forces and to develop and implement more cost-effective methods of selection and training. We are placing increasing emphasis on: adapting innovative technologies such as voice, videodisc, and electronic games to military needs; developing and demonstrating improved on-the-job training techniques; embedding training capabilities in actual equipment; and reducing the cost of system ownership through improved human engineering methods. We are requesting $177 million for training technology programs in FY 1982.

8. All-Weather Munitions

The objective of this effort is to improve the effectiveness of precision-guided weapon systems in realistic battlefield environments. The program will measure atmospheric transmission effects on sensor systems and target and background signatures in adverse weather environments. In FY 1982, an all-weather air-to-surface missile seeker will be demonstrated using synthetic aperture radar and millimeter wave guidance technology.

9. Mobility Fuels

The overall objective of the DoD Energy Program is to reduce dependence on foreign oil imports through the use of domestic synthetic fuels, improved energy conservation methods, and other fuel and energy sources. The Department has completed all phases of the synfuel engine component test program and is proceeding with the full-scale synfuel engine tests. We are working closely with the Department of Energy (DoE) to implement the Energy Security Act by becoming a guaranteed customer for specification synfuels that will result from DoE solicitation contracts. Efforts are continuing to test broadened fuel specifications, to develop rapid specification analysis methods, and to develop multi-fuel engines.

10. Embedded Computer Software

The prime objective of this initiative is the development of new methods for software programming that will provide order-of-magnitude improvements in programmer productivity. We also seek significant improvements in software quality, as measured by reliability, robustness, responsiveness to real user needs, ease and predictability of modification, and other factors affecting the utility and indirect costs of computer software systems. The FY 1982 request contains $20 million for these programs.

11. Combat Aircraft Technology

Advances in digital computer technology now make it feasible to integrate the functions of the flight control, fire control, and navigation systems with improved weapon delivery accuracy, increased survivability, and the ability to optimize the aircraft response characteristics for any particular mission segment. In FY 1982, we will initiate flight tests of integrated fire and flight controls on a specially modified F-16 aircraft. In addition, testing of the tilt rotor concept, which possesses both helicopter-like hover characteristics and is capable of speeds up to 400 knots, will be continued in FY 1982. We are requesting $41 million for air warfare technology in FY 1982.

12. Electromagnetic Guns

The potential advantages of electromagnetic guns over conventional guns include safer handling and lower vulnerability of ammunition, logistic simplifications, higher projectile velocities, and precise control of projectile acceleration and range. The applicable technology is similar to that required for charged particle beam weapons, but at a less demanding level. We are requesting $5 million for electromagnetic gun technology in FY 1982.

V. DEFENSE AGENCIES

A. Defense Advanced Research Projects Agency (DARPA)

The DARPA Science and Technology program differs from those of the Military Departments in that it addresses new ideas and advanced technologies that are long-range, multi-Service in nature, and generally involves risks too high to justify early inclusion in a Service budget. As these Research and Exploratory Development programs mature, feasibility demonstrations are conducted in cooperation with the Services who are then in a position to bring the most promising technologies rapidly into the Advanced Technology Development phase. We are requesting $655 million for the DARPA program in FY 1982.

Major Objectives

1. Advanced Cruise Missile Technologies: engine improvements for greater range and payload, enhanced homing and guidance technologies to improve accuracy, and an improved understanding of detection and tracking phenomena to maintain the ability of cruise missiles to penetrate sophisticated air defenses.

2. Space Defense: high-efficiency lasers, large space optics, and pointing and tracking techniques to demonstrate the feasibility of high-energy laser system technology for space-related applications.

3. Space Surveillance: sensor technologies for target detection with countermeasure protection, improved missile surveillance, and new options for early warning on both strategic and theater levels.

4. Naval Warfare: technologies to improve the performance of passive acoustic systems in order to develop active acoustic surveillance technologies, to explore non-acoustic submarine signatures, and to improve long-range, over-the-horizon surveillance of air, surface, and subsurface targets.

5. Land Combat: target acquisition and weapon delivery technologies that provide options to offset the Soviet armored vehicle assault capability, including advanced fire-and-forget missiles, all-weather targeting and guidance, and low-cost, longer-range artillery rounds.

6. Air Vehicles and Weapons: innovative concepts such as the X-Wing and the Forward Swept Wing technologies, and exploration of new composite materials, which could offer dramatic improvements in aircraft performance.

7. Command, Control, and Communications: technologies for survivable computer communications, secure message and information systems, improved crisis management and command systems, and evaluation of these emerging technologies in a quasi-operational test-bed.

8. Nuclear Test Verification: development of detection and identification techniques for monitoring other nations' compliance with agreements limiting nuclear testing.

9. Technology Initiatives: innovative computer science, new communications technology, application of image understanding techniques to automation of photo-interpretation, and initiatives in digital structure designs, cruise missile defense, electromagnetic propulsion, rapid solidification technologies, and electronic and optics materials research.

10. Unconventional Technologies: those high-risk, high-payoff advanced technology demonstrations that have been of special interest to the Congress and for which DARPA has the central management responsibility, including the DoD charged particle beam research program for demonstration of the feasibility of propagating a high energy beam through the atmosphere, the Assault Breaker program, and the strategic laser communications program for communications with submarines.

B. Defense Nuclear Agency

The Defense Nuclear Agency (DNA) conducts a comprehensive research program to assess the survivability of our military systems in a nuclear environment, to predict the lethality standards for confident destruction of enemy assets, and to develop technological capabilities that will enhance strategic and theater nuclear force effectiveness. Highlights in the FY 1982 DNA RDT&E program request of $234 million are:

-- continued development of advanced radiation simulators to enhance testing flexibility and to lessen dependence on underground nuclear tests;

-- further assessment of the effects of nuclear weapons detonation, particularly those occurring at high altitudes, on the survivability and endurance of military command, control, communications, and intelligence functions;

-- continued support of the MX missile program in the areas of nuclear weapons effects environment, hardness data, and weapons effects simulation testing techniques;

-- development of underground test facilities to support MX booster and advanced reentry vehicle component tests;

-- improvement of deterrence and warfighting capabilities by development of procedures, methodologies, and techniques to optimize application and effectiveness of nuclear weapons; and

-- development of improved nuclear weapons physical security through the use of sophisticated safeguards.

C. Defense Mapping Agency (DMA)

DMA's primary objective is to provide the military forces with current mapping, charting, and geodesy (MC&G) products that are critical to successful military operations.

DMA's major FY 1982 efforts include:

-- expanded production in support of Rapid Deployment Forces map and chart requirements;

-- TERCOM production and mission planning data in support of the cruise missile program;

-- R&D efforts to increase digital MC&G production technology in support of weapon systems such as MX and PERSHING II; and

-- improved and increased MC&G exchange agreements with cooperating foreign countries.

VI. DEFENSE-WIDE MISSION SUPPORT

This major mission category includes those efforts that provide support to multiple defense missions and cannot be allocated directly to any other major mission area.

A. Supporting Space Developments

Our primary objectives are to develop a flexible, effective space launch capability that can support space system deployment with enhanced survivability at reduced cost, and to provide an advanced technology base for future space system opportunities.

We plan to begin the transition of our operational spacecraft to Shuttle launch in FY 1983, and to complete it by FY 1986. By the mid-1980s, we will be almost totally dependent on the Shuttle for supporting our national security space missions. We are developing the Inertial Upper Stage to deliver spacecraft from the Shuttle to high-altitude orbits and are constructing the Shuttle launch and landing facilities at Vandenberg Air Force Base, so that polar and near-polar launches can be conducted in support of all Shuttle users--civil as well as military.

In order to provide a backup for our highest priority spacecraft in the event of delays or any unanticipated problems in Shuttle availability, TITAN III production capability will be maintained through Shuttle IOC and until we can be fully confident of the ability of the Shuttle to support all of our highest priority launches.

B. Global Military Environmental Support

As our weapons and tactics grow more sophisticated, the demand for more accurate and reliable weather information increases. In our technology base programs, we are addressing the fundamental interactions of the air, ocean, space, and terrestrial environments with present and future weapon systems. In our advanced and engineering developmental programs, we are stressing delivery of weather information to the operational decision-makers. We are requesting $246 million in FY 1982 for environmental RDT&E programs.

In this year's program, we plan to complete the tactical decision aids needed to employ infrared weapon systems effectively. We will continue to develop those battlefield decision aids for the employment of visual and millimeter wave systems. We will add to the Navy Shipboard Tactical Environmental Support System (TESS) the capability to forecast conditions that will influence use of electro-optical weapons in the marine environment. We will also continue to develop weather sensors that will obtain data from enemy controlled territory, to be communicated throughout the battlefield by means of the Tactical Automated Weather Distribution System.

We have formed a joint program office with the Departments of Commerce and Transportation for the development and procurement of a weather radar system to replace the aging radars of all three Departments. We will also be working with the same Departments on the development and procurement of automated weather sensors to increase the accuracy and reliability of weather observations while reducing personnel requirements.

C. Test and Evaluation

1. Major System Evaluation

The primary role of DoD Test and Evaluation (T&E) activities continues to be the assessment of weapon system operational effectiveness and suitability, in order to demonstrate that the technical performance specifications have been met and to show that engineering design is satisfactory. To accomplish this, we will continue during FY 1982 to emphasize the need for early determination of qualified system operational performance and logistics planning requirements, the timely submittal of Test and Evaluation Master Plans (TEMPs), and the utilization of early operational testing in a realistic environment as an effective method of expediting system maturity.

During FY 1982 we will encourage the Service T&E elements to interact with the developing agencies in the early stages of a project, so that realistic quantitative and demonstrable performance objectives can be established and matched with appropriate testing technology improvements in a timely and cost-effective manner. In support of testing technology advancement, considerable

attention is being given to the effective utilization of system test-beds, simulation techniques, and software performance evaluation. These advancements are required if the activities are to provide realistic assessments of system operational capability.

2. Test Facilities and Resources

FY 1982 efforts are associated with the continuing assessment and update of range instrumentation required to support both the testing of advanced technology systems and scheduled joint operational tests, which serve as concept and tactics effectiveness assessment exercises. Accuracy enhancement for range radar measurements and the application of NAVSTAR/GPS inputs to range instrumentation will be pursued.

3. Joint Operational Test and Evaluations (JOT&Es)

In FY 1982, eight JOT&Es to evaluate systems, tactics, concepts, and interoperability in multi-Service operational scenarios will be in process and two others will be in their initial planning stages. One additional test will be undergoing feasibility evaluation as a possible FY 1982 new start.

4. Foreign Weapons Evaluation (FWE) Program

This program supports technical and/or operational evaluation of friendly nations' weapon systems and technologies with a view towards avoiding unnecessary duplication in development. During FY 1982, we will use Memoranda of Understanding to acquire foreign weapon system test and evaluation data. Availability of these data will assist in test planning and will reduce the cost of individual evaluations.

D. Studies and Analysis

This program provides independent analytical capability in support of policy and program decision-making. Studies are undertaken on issues for which staff expertise is unavailable and maintenance of dedicated staff would not be cost-effective. The FY 1982 program will evaluate international security policy issues, will examine the technical and military threat environment, will assess force posture trends, tactics, and doctrine, and will assist in resource planning and strategic decision-making. Additionally, the program will endeavor to identify policy and program vulnerabilities and deficiencies. Funding constraints for FY 1982 have forced the cancellation of some promising studies.

VII. SYSTEM ACQUISITION MANAGEMENT INITIATIVES

We are continuing our efforts to improve cooperation with our allies and to increase the efficiency of the systems acquisition process. Some of these initiatives are discussed below, while others are listed in Section II, Chapter 8 (NATO Programs) or Chapter 15 (Management).

A. Cooperative Programs

Work will continue with both NATO and non-NATO allies to increase cooperation in the science and technology area. The primary vehicles for fostering cooperation in defense-related science and technology are the NATO Defense Research Group, the Mutual Weapons Development Data Exchange Program, the Technical Cooperation Program, and the NATO Advisory Group for Aerospace Research and Development (AGARD). The U.S.-Japan Systems and Technology Forum was established last year to implement an agreement for regular consultations to promote defense systems and technology cooperation, improved interoperability, and more efficient weapons procurement.

B. Acquisition Cycle Management

We have made steady progress over the past several years in incorporating the intent of OMB Circular A-109 into our acquisition policy. The shift to a development of mission needs was accomplished by the requirement for a Mission Element Need Statement (MENS) and a Milestone "0" decision. Our efforts for the future will concentrate on implementing the management principles in A-109, now embodied in our own policies, in a practical way within the defense community. We are streamlining the acquisition process and ensuring that our review does not excessively lengthen the time required to field equipment. In fact, it is our hope that we can improve program stability by concentrating on major issues such as need and affordability early in the acquisition cycle, thus reducing false starts and major changes in program direction in the later phases.

C. Industrial Readiness

While sufficient capacity to support defense programs generally exists at the prime contractor level, deficiencies exist at the subcontractor and vendor levels. Analysis of production requirements for weapon systems have identified lower-tier supplier base bottlenecks for such items as optical components and sensors and semi-conductors. These bottlenecks can adversely affect the delivery schedule of an entire system. There also is a serious shortage of skilled manpower to operate the complex machine tools that modern systems production requires, and a lack of capital investment by industry, largely because of the instability of defense program funding levels and an inadequate rate of return. To alleviate these problems, we are pursuing a number of initiatives such as expediting the government paying cycle to lessen cash flow problems, increasing the use of milestone billings and advanced funding, and supporting tax-favorable policies.

D. Industrial Productivity

U.S. industrial productivity is a serious problem, and we are pursuing a number of initiatives keyed to improving the productivity of defense industries. We have begun the action necessary to permit greater use of multi-year contracts by proposing legislation to repeal the current $5 million cancellation ceiling imposed by the DoD Authorization Act of 1976. We have established a Joint Service Committee on Industrial Productivity, specifically charged with the responsibility of investigating and coordinating potential productivity-enhancing initiatives that can be executed within DoD.

E. Long Lead-time Trends

The lead-times for essential equipment and materials have been increasing steadily over the past four to five years. For example, in the past three years, lead-times for delivery of aluminum forgings have increased from 20 to 120 weeks, for aircraft landing gear from 52 to 120 weeks, and for integrated circuits from 25 to 62 weeks. One of the most effective tools available to DoD to reduce lead-times is the Defense Priorities System (DPS) provided for under the Defense Production Act of 1950, as amended. While this affords priority treatment (ahead of commercial orders) for the purchase of products and materials by Defense agencies, contractors, suppliers, and so forth, it is in reality only a temporary fix. Consequently, we are striving to achieve greater stability in defense programs, to develop realistic incentives to encourage greater private capital investment, to improve overall productivity, and, where prudent (as, for example, in some of the critical space programs), to use advance procurement of long-lead parts and materials.

VIII. CONCLUSION

The Research, Development, and Acquisition program described above represents our best effort to balance resources among the many competing demands the Department faces. There are significant challenges ahead, but I believe we are meeting them directly and successfully.

CHAPTER 12

LOGISTICS

I. PROGRAM BASIS

Defense logistics comprises a multi-faceted and wide-ranging set of functions, activities, services, and procurements supporting the overall combat capability of our forces. I am proposing that about $84 billion--or almost 43 percent--of the FY 1982 budget request of $196.4 billion be utilized for logistics. These logistics funds are spread across almost every budget appropriation; about 64 percent of these resources are for materiel readiness and about nine percent for combat sustainability. For FY 1982, all Services have budgeted substantially more funds for both readiness and sustainability than in previous years. That these increased resources have come largely at the expense of previously planned force modernization is a clear indication of the increased emphasis we are placing on readiness and sustainability in our current defense planning. Most of the logistics funds contribute at least indirectly to both readiness and sustainability. It is useful to identify separately those portions of the logistics total attributed to facilities support (about 17 percent) and to management and support services (about 10 percent).

II. PROGRAM DESCRIPTION

A. Materiel Readiness

1. General

Materiel readiness refers to the amount of equipment and supplies on hand (relative to the amount prescribed to perform the wartime mission) and the ability of this materiel, during peacetime and the initial operations of a crisis or conflict situation, to perform the functions for which it was designed, procured, or modified. The following paragraphs contain an overview of materiel readiness for the principal types of weapon systems. A detailed Materiel Readiness Report (MRR) will be provided in February 1981 in compliance with Public Law 95-79 (the FY 1978 Defense Authorization Act). The MRR will contain projections of materiel readiness, based on the funding proposed in the President's FY 1982 budget, for all major DoD weapon systems and equipment. Another separate report, also to be submitted in February (in accordance with the FY 1981 Defense Authorization Act), will project overall and measured-resource-area C-ratings (as defined in the Joint Services Unit Status and Identity Report) for principal combat units.

2. Aircraft Materiel Readiness

Mission capable (MC) rates are often used as indicators of peacetime materiel readiness. Recently experienced aircraft MC rates are as follows:

TABLE 12-1

	Average Mission Capable Rates (%) Actual	
	FY 1979	FY 1980
Army Aircraft	74	74
Navy/Marine Corps Aircraft	66	59
Air Force Aircraft	66	66

The FY 1979-1980 decline in the average MC rate for Navy/Marine Corps aircraft was largely anticipated and was commented on in the FY 1981 Materiel Readiness Report. We estimate that about two percent of the decline was due to maintenance personnel problems. Approximately another two percent was due to the increased discipline imposed by implementation of the Navy's new data reporting system, the Subsystem Capability and Impact Reporting (SCIR) system.

Of special interest are our first-line tactical fighter/attack aircraft: Navy/Marine Corps A-4s, A-6s, A-7s, AV-8s, F-4s, F-14s; Air Force A-7s, A-10s, F-4s, F-15s, F-16s, and F-111s; and the Army's first-line attack helicopter, the AH-1. The recent history of MC rates for these aircraft types are as follows:

TABLE 12-2

	Average Mission Capable Rates (%) Actual	
	FY 1979	FY 1980
Navy/Marine Corps First-Line TACAIR Aircraft	62	53
Air Force First-Line TACAIR Aircraft	60	63
Army Attack Helicopter	74	74

The procurement of spare aircraft components contributes to both readiness and sustainability. The increased emphasis in these areas can be seen in the following funding profile:

TABLE 12-3

	Aircraft Spares Procurement ($M)			
	FY 1980	FY 1981	FY 1982	FY 1983
Army Aircraft	71	139	193	264
(initial spares)	(46)	(106)	(117)	(109)
(replenishment spares)*	(25)	(33)	(76)	(155)
Navy Aircraft	701	1,110	1,269	1,385
(initial spares)	(329)	(479)	(601)	(551)
(replenishment spares)*	(372)	(631)	(668)	(834)
Air Force	1,102	2,162	3,286	2,880
(initial spares)	(351)	(448)	(541)	(436)
(replenishment spares)*	(751)	(1,714)	(2,745)	(2,444)

* Including war reserves.

Because of the time lag between the appropriation of funds for aircraft spares and the effect of these spares on aircraft materiel readiness, current shortages cannot be quickly rectified. Thus, much of the benefit of the significantly increased FY 1982 funding for aircraft spares will not be reflected in aircraft MC rates until FY 1984 and beyond. This lag makes it imperative that we fund spares support as soon as possible so that the necessary readiness improvements can be realized at the earliest possible time.

Depot-level repair funding and backlogs for aircraft components, engines, and airframes can significantly influence aircraft readiness. The availability of components and engines generally exerts a stronger and more direct influence on materiel readiness, as reflected in MC rates, than does the reworking of airframes. The recent funding/backlog history and projections in these areas are as follows:

TABLE 12-4

	Aircraft Depot Level Funding/End-Year Backlogs ($M)					
	FY 1980		FY 1981		FY 1982	
Army						
Components	85.1/	5.7	89.4/	5.0	84.6/	13.8
Engines	30.2/	1.2	45.3/	1.3	53.8/	.9
Airframes	70.3/	1.7	74.1/	10.4	136.0/	2.9
	185.6/	8.6	208.8/	16.7	274.4/	17.6
Navy/Marine Corps						
Components	510.3/	59.8	651.3/	34.3	658.0/	37.7
Engines	111.6/	35.9	174.1/	44.5	175.6/	35.5
Airframes	254.8/	86.7	334.8/	45.9	302.4/	74.0
	876.7/	182.4	1160.2/	124.7	1136.0/	147.2
Air Force						
Components	966.9/	77.8	1178.9/	0	1361.3/	0
Engines	143.6/	6.6	193.7/	0	209.7/	0
Airframes	192.5/	1.1	252.9/	0	256.7/	0
	1303.0/	85.5	1625.5/	0	1827.7/	0

It is important to point out that the readiness rates are dependent upon manpower resources as well as funding levels. In particular, increasingly tight overall federal and DoD manpower constraints can affect our depot repair programs.

During late FY 1979 and early FY 1980, the Air Force experienced significant reliability and durability problems with the F-100 engines used in F-15 and F-16 aircraft. In addition, new engine production deliveries were delayed by prime contractor capacity constraints and long subcontractor lead-times, and these delays were exacerbated by strikes at two subcontractor plants. These production problems, coupled with high failure rates of the already produced engines, resulted in some airframes having no engines early in FY 1980. Funding and management initiatives in FY 1980 and FY 1981 are expected to correct some of these problems by the end of FY 1981. The proposed FY 1982 funding fully supports the projected repair requirements for F-100 engines.

The Army has extended its On-Condition Maintenance program to T53-L-13B engines, which constitute about one-half of the gas turbine engines in the Army. In addition, Corpus Christi Army Depot maintains a 24-hour-a-day telephone "hot line" from which engine users receive expert advice on engine problems. When the "hot line" advice is insufficient, and conditions and costs warrant, a team of engine experts is dispatched to the field. Since May 1978, the Army has kept operational in the field 647 T53 engines that otherwise would have been returned to the depot for overhaul. The program is being extended to other aircraft engines and selected components.

Navy funding in FY 1982 takes the first step towards correcting deficiencies in aircraft carrier and Marine Air Group spare parts allowances to improve both operational readiness and wartime surge capability. We plan to eliminate the deficiencies by the end of FY 1986.

3. Ship Materiel Readiness

Since the mid-1970s, the materiel condition of ships has been slowly improving due to the combination of increased funding and the disciplined application of a balanced maintenance philosophy that stresses maintenance at the lowest effective level. The FY 1982 budget fully funds all shipboard, intermediate, and depot-level maintenance. Intermediate level funding includes Intermediate Maintenance Activity (IMA) support of reduced-manned LO-MIX ships (e.g., FFG-7) and accommodation of essential IMA work overflow by the Commercial Industrial Services program. Depot maintenance for ships is, in essence, fully funded. The number of ships overdue for overhaul has been reduced from 68 in FY 1976 to a projected 16 by the end of FY 1982. Operational constraints preclude scheduling additional depot maintenance in FY 1982.

Fleet readiness will be further enhanced in FY 1982 by the application of funding provided for the Ship Support Improvement Project. In addition to continuing the induction of combatants, amphibious, and mobile logistics support force ships into the Engineered Operating Cycle, FY 1982 funding will permit the completion of the engineering phase for the LHA class ships and the initial "follow-on" overhauls for the first four FF-1052 class frigates. Under the IMA

upgrade program, funds are requested to commence improvement of the Shore Intermediate Maintenance Activities at Norfolk (Little Creek), New London (submarine support), and Pearl Harbor. These improvements are considered essential to fulfill current and future maintenance requirements. FY 1982 funding provides for implementation of reliability-centered maintenance, a concept that will yield reduced maintenance requirements, less equipment downtime, and greater operational availability. Currently, the at-sea testing phase is in progress for FF-1052 class ships and preparations are being made to induct the FFG-7, DD-963, DDG-993, and FF-1052 class ships.

4. Land Forces Equipment Readiness

The Army will be equipped at 45 percent of its total Authorized Acquisition Objective (AAO) dollar value at the end of the FY 1982 funded delivery period. The status of selected key Army weapon systems and equipment is as follows:

TABLE 12-5

Status of Selected Key Weapons/Equipment

		Stocks As Of		
	AAO	June 80	End FY 1982	End FY 1983
Medium Tanks	16,227	11,684	12,973	13,776
Armored Personnel Carriers*	24,221	15,700	16,448	16,831
Self-Propelled Artillery	4,958	3,250	3,250	3,250
5-Ton Trucks	58,595	32,447	31,831	33,157

* Includes new Fighting Vehicle Systems (FVS)

The equipment fill of units varies according to unit priorities: forward-deployed and early reinforcing major combat units are generally highly rated for equipment on hand (EOH). However, the overall shortage of equipment and the asset distribution priorities have resulted in some combat service support units and later deploying major combat units being rated lower for EOH. Equipment withdrawals to meet POMCUS requirements have been a contributing factor and have had an impact on the ability to deploy to locations other than Europe.

Depot maintenance backlogs for land forces weapon systems reduce the amount of equipment available for distribution, thereby constraining force structure equipment levels and degrading peacetime readiness. Funds are requested in the FY 1982 budget to eliminate the backlog of combat vehicles by the end of FY 1982, and of all other commodities in FY 1983 (except for conventional ammunition renovation, which will be accomplished in FY 1984). An Army management initiative to improve depot repair cycle times is expected to improve readiness.

The Army's rate of recovering and rebuilding unserviceable components, although lower than the Air Force and Navy rates, has improved significantly during the past fiscal year. The Army's Repair Parts Improvement Program is aimed at increasing its repairable return rate to 75 percent.

The Army is also making significant progress in using optimization models to determine the level of initial spares required to meet availability objectives for specified weapon systems.

B. Combat Sustainability

1. General

Combat materiel sustainability--the "staying power" of our combat forces--depends on the continuing availability of weapons, equipment, secondary items, and munitions to replace those consumed or attrited during combat operations. During wartime, sustainability stocks would come from three basic sources: (1) peacetime stocks; (2) war reserve stocks; and (3) new production from industry. Section IIA of this Chapter describes the first source and, to some extent, the second. This section discusses war reserve stocks and new production.

2. War Reserve Stocks

War reserve stocks are the additional inventories, above the levels needed to support peacetime operations, that we procure to support the much higher anticipated wartime activity levels and loss rates.

a. Weapons and Equipment

Both the Army and the Marine Corps currently possess, and will continue to procure, combat attrition replacement assets for ground forces major equipment, such as tanks, armored personnel carriers, and artillery pieces. The Army's buildup of European prepositioned war reserve materiel stocks (PWRMS) has been given a high priority.

b. Munitions and Secondary Items

We are replacing our war reserve munitions stocks of older ordnance types with the newer, more effective (and more costly) air and ground munitions, precision-guided munitions, air-launched missiles, and improved conventional ground munitions. Until we complete this transition, our stocks of the more modern munitions will be below the levels we desire. Also, significant increases in storage capacity in Europe for prepositioned war reserve munitions depend upon NATO infrastructure funding.

Secondary items include weapon system spare components, repair parts, personnel support items, and a myriad of low-cost consumable items. Though secondary items account for a relatively small part of the dollar value of our total war reserve requirements, secondary item shortages can severely degrade our combat capability and can be as important as shortfalls in major equipment and munitions.

Our proposed funding to improve our modern war reserve munitions and secondary items posture over the next several years is as follows:

TABLE 12-6

	War Reserve Munitions/Secondary Items ($B)				
	FY 1982	FY 1983	FY 1984	FY 1985	FY 1986
Army	1.6/ .3	2.4/ .4	2.7/ .4	3.5/ .4	3.6/ .5
Navy	1.7/0	2.1/ .1	2.6/ .2	2.8/ .3	2.8/ .4
Air Force	1.1/1.0	1.8/ .9	2.0/1.0	2.6/1.2	3.2/1.0
Marine Corps	.2/0	.2/0	.3/0	.4/0	.8/0

The sustainability of our fleet of C-5 aircraft is particularly critical to our ability to deploy any significant military force with "outsized" cargo (e.g., tanks). With today's war reserve spares stockage levels, the C-5 fleet could sustain its required 45-day wartime utilization rate of 12.5 hours/aircraft/day for only a short time. The proposed FY 1982 budget would fully fund most of the required wartime sustainability for the C-5 fleet; our currently-proposed FY 1983 program would fund the remaining required surge capability.

c. Petroleum, Oil, and Lubricants (POL)

In 1979, because of the tight oil market caused by the Iranian revolution, a refinery fire in Texas, major storms in the Caribbean, and a temporarily blocked Houston shipping channel, the Defense Logistics Agency (DLA) was able to purchase only about 90 percent of the total DoD jet fuel requirement. As a result, DLA wholesale inventories declined, and at one point, these inventories were some 12.5 million barrels below 1978 levels, resulting in numerous breaches in war reserve levels for some POL products at some locations. Conditions have improved significantly, and worldwide DoD peacetime and war reserve POL stocks are now at normal levels. Fuel price increases continue to affect DoD, with OPEC prices increasing some 140 percent between 1978 and August 1980. The current Iran-Iraq war is expected to have a detrimental effect on OPEC contract costs as well as on spot prices on world markets. Spiralling fuel costs have forced upon DoD continued stringent fuel conservation practices.

3. Industry Production

The FY 1982 budget provides almost $100 million of O&M funding for the maintenance and retention of the existing DoD industrial plant and for industrial mobilization planning. Additional investments in production base expansion and responsiveness are included only to the extent that they support the approved peacetime procurement program. We will continue to monitor our industrial response capability and will draw on the results of the DoD Surge Analysis and the Sustainability Study to provide recommendations for enhancing our industrial preparedness.

C. Facilities Support

Facilities support refers to capital plant investment, maintenance of existing facilities, energy conservation, military installation compliance with environmental and OSHA standards, and NATO infrastructure facilities funds.

1. Military Construction Program

a. European Construction and NATO Infrastructure

The FY 1982 military construction request includes $962 million in support of U.S. forces in Europe. This includes only projects urgently required to strengthen NATO's defense of Western Europe. The projects are phased to support requirements identified in the Long-Term Defense Program and other NATO initiatives; their deferral would cause considerable disruption to Alliance plans. The budget request includes $390 million for the NATO multi-nation-funded infrastructure program for FY 1982.

b. Indian Ocean/Persian Gulf Facilities

The FY 1982 military construction request includes $367 million for Indian Ocean/Persian Gulf facilities, continuing the program begun in FY 1981 to enhance the logistics structure supporting U.S. forces in the region. Details concerning these efforts are discussed in Section II, Chapter 6.

c. Housing Programs

Our FY 1982 Military Construction Program request includes approximately $2.3 billion for family housing. The family housing request includes $152 million for new construction, which would produce an additional 2,007 units, primarily at installations experiencing substantial increases in assigned personnel. Additionally, post-acquisition construction costing $97 million will provide for essential modernization of existing family housing, including improvements directly related to the energy conservation investment program. The operation and maintenance of the family housing inventory of over 400,000 units worldwide will require approximately $1.9 billion. This amount is required not only to fund the normal aspects of operating a house, such as utility bills, services, and routine maintenance, but also to continue our plans to reduce the backlog of major maintenance and repairs. The remaining major funding requirements are debt payment ($21.2 million) and leasing ($124.3 million), primarily in support of families assigned to installations in foreign areas.

d. Construction Program Performance

I have initiated a program to increase the percentage of construction programs executed in the fiscal year for which funds have been appropriated. The goal is to award contracts totalling 90 percent of the available program funds by the end of FY 1982.

2. Real Property Maintenance Activities (RPMA)

RPMA funds provide for essential maintenance and repair of our real property facilities. The condition of our facilities not only affects personnel morale, but can also affect the readiness, sustainability, and capability of our combat forces. Programs have been initiated to improve RPMA work-force productivity, to implement commercial/industrial-type activities contracts, to increase the use of Engineered Performance Standards, and to achieve the most economical use of utilities. The FY 1982 budget requests more than $3.3 billion for the maintenance, repair, and minor construction aspects of RPMA.

3. Energy Conservation Investment Program (ECIP)

Executive Order 12003 requires a 20 percent reduction by 1985, relative to 1975 levels, in energy consumption in existing facilities. ECIP funding to achieve permanent energy conservation retrofits of existing facilities are programmed to achieve a 12 percent reduction. (The other eight percent of the required savings is anticipated from operations and maintenance-funded projects, as well as from improved operational efficiencies and maintenance techniques.) ECIP expenditures are generally recouped via operational savings and cost avoidances. The amortization period on projects started during FY 1976-1980 averages less than six years. The criterion for project selection is energy savings per dollar invested. Our ECIP effort also will serve as the basis for complying with Section 547 of the National Energy Conservation Policy Act.

4. Pollution Abatement

Our Defense installations must comply with the requirements of all environmental laws, particularly the Clean Air and Water Acts and the Resource Conservation and Recovery Act. Although significant progress has been made to date, a number of our installations remain in violation of standards. In FY 1982, approximately $44 million is programmed for water pollution abatement and $14 million for air pollution abatement. Projects selected include improvement of sewage treatment facilities, oil spill prevention, and explosive and contaminated waste incineration emission controls. To meet increasingly stringent state and local requirements, we plan to spend $411 million for air pollution control and $358 million for water pollution control in FY 1983-1986. An additional $99 million has been programmed in the out-years to comply with recent OMB guidance that DoD installations must pay their share of the cost of constructing regional waste water treatment plants.

5. Occupational Safety and Health Act (OSHA)

Although hazard abatement funding has been markedly increased, compliance with OSHA requires continued emphasis on workplace health hazard identification. Additional funding and staffing are required to manage the overall requirements of the Act and to implement the training and occupational health surveillance requirements of Executive Order 12196.

D. Logistics Management and Support

1. Centralization of Logistics Functions

a. Integrated Item Management

Over the past few years, we have been centralizing the Defense logistics functions in the hands of single-Service wholesale managers wherever practicable without degrading force readiness. For example, the Army is now the single wholesale manager for most conventional ammunition. I am continuing this effort in the area of non-consumable spare and repair parts that have multi-Service application. We currently have single-Service managers for about 75 percent of such items. Still under consideration are the potential cost savings and the impact on Service readiness that would result if an additional 1.3 million consumable items were transferred from the Services to DLA for management.

b. Defense Retail Inter-Service Support Program

I have placed greater emphasis on the Defense Retail Inter-Service Support Program to reduce duplication of logistics efforts in geographical areas where there are large concentrations of military activities. Forty-three Joint Inter-Service Resource Study Groups are studying the feasibility of creating new or additional inter-Service support agreements in 100 separate logistics functions. As of June 30, 1980, the Department had 5,455 such agreements involving 3,534 participating activities.

2. Standardization of Logistics Activities

By October 1982, DoD components will implement a new DoD-wide policy on computing war reserve requirements for spare and repair parts. The implementation of this policy will provide data for sustainability evaluation and will help in determining overall war reserve funding priorities.

We are in the process of developing automated data processing (ADP) system changes and procedures to implement, by December 1982, a standard retail inventory management stockage policy (RIMSTOP). Implementation will provide a means of evaluating the cost-effectiveness (in terms of supply support to operating and support forces) of secondary item inventories held below the wholesale level.

We recently have completed a year-long study of possible improvements to management practices and techniques, improvements that would effect supply system efficiencies and minimize obsolescence of secondary item inventories, particularly at the wholesale level. We expect to commence implementation of many of the improvements by FY 1982.

3. Transportation Support

Significant progress is being made in mobilization preparedness through closer coordination with other government agencies with key emergency responsibilities.

a. Traffic Management, Land Transportation, and Ocean Terminal Operations

The Military Traffic Management Command (MTMC), our single manager in this area, has implemented the Contingency Response Program to provide initial commercial rail and highway transportation required during periods of emergency, contingency execution, disturbances, or natural disaster relief operations. The Railroads for National Defense and Ports for National Defense remain priority programs designed to ensure support capability during an emergency. In conjunction with the Maritime Administration, MTMC has designated specific berths at ports for use in contingencies. Construction begun in FY 1981 will increase ammunition outloading capability at ocean terminals. Upgrading of the Defense Freight Railway Interchange Fleet is continuing for the transport of the XM-1 tank. In addition to the railroads and ports programs, MTMC has added the Pipelines for National Defense Program to identify all CONUS fuel pipelines and to assess their potential capacity to supply fuel under strategic plans.

b. Airlift Operations

After several years of effort to gain support for modification of commercial wide-body passenger aircraft for rapid conversion to a cargo configuration in an emergency, a contract was signed with United Airlines for this purpose in 1980. This begins a program to add over 60 such aircraft to the Civil Reserve Air Fleet. We are realigning our Military Airlift Command passenger terminals and increasing reliance on commercial terminals. We expect to publish a plan in FY 1981 for achieving the best mix of commercial and military air passenger terminals.

c. Sealift Operations

The Military Sealift Command (MSC), as the single manager for sealift, prepares for its wartime responsibilities through peacetime operations of its controlled fleets and contractual arrangements. MSC maintains a near-term prepositioned fleet in the Indian Ocean in support of a Marine Amphibious Brigade. Additionally, MSC is participating in the program to acquire SL-7 containerships, which ultimately will be converted to RO/RO (roll-on/roll-off) ships for the rapid deployment of heavy forces worldwide. This major increment of fast sealift capability will greatly improve our ability to deploy the RDF or to reinforce NATO more rapidly.

4. Materiel Distribution System

We have instituted a five-year plan for evaluating the DoD materiel distribution system to aid us in determining depot throughput standards, storage space requirements, stockage policies, and transportation cost reduction potential. The Services are continuing to install advanced materiel-handling systems in their depots in order to reduce labor costs, to speed up service, and to make more efficient use of storage space. We are investigating the standardization of these systems.

During 1978 and 1979, considerable interest was focused on strategic and tactical airlift and factors contributing to the overall airlift shortfall. A

lack of some types of materiels handling equipment (MHE) was identified as limiting lift capacity. FY 1982 funding fills all MHE shortages in the airlift area and reduces the average age of the equipment by replacing a significant portion of our worn-out, obsolete, and hard-to-support MHE assets.

DLA continues to lead a joint-Service effort to develop a standard, automated DoD warehousing and shipping system. Such a system will enable us to have a flexible, responsive, and cost-effective stockage policy.

5. Combat Service Support (CSS)

Over the past several years, Army combat and combat support forces have been increased without similar enhancement of combat service support (CSS) forces. As a corrective measure, in FY 1980-1981, CSS units and manning were added to the active component force structure for NATO and the RDF. The FY 1982 budget includes the activation of selected CSS units for the RDF to sustain the force in a bare-base environment. A Marine Corps CSS initiative will add more than 4,000 additional manpower spaces for the Force Service Support Groups above previously projected levels, and will provide for establishment or enhancement of capabilities in bulk fuel, rations, munitions, medical, bridging, military police, and other functional areas. The level of CSS requirement varies directly with the degree of enhancement of the U.S. rapid reinforcement capability, with significantly greater amounts of CSS required in the early stages of deployment and reception. U.S. CSS varies inversely with the amount of assured Host Nation Support the United States is able to acquire from the host countries.

III. CONCLUSION

In summary, I believe our proposed FY 1982 logistics program is well-balanced and adequately provides for materiel readiness, materiel sustainability, facilities support, and management and support services. We have had some significant readiness and sustainability problems in the past, and some remain today. We have, however, recognized these problems and are confronting them head-on. The significantly increased resources we are programming for readiness and sustainability are expected to result in meaningful improvements over the next several years.

CHAPTER 13

MANPOWER

I. PROGRAM BASIS

Our overriding defense manpower objective is to increase the combat effectiveness of the Armed Forces. The most important factor in that effort, one often taken for granted in discussions of sophisticated equipment, is attracting and retaining capable, motivated people--the soldiers, sailors, airmen, marines, and civilian employees who constitute our total force. This brief exposition covers those issues relating to our manpower program that I consider of greatest importance. Along with descriptive material on our projected active and reserve end strengths, it addresses training loads, manpower costs and recruiting goals, recruit quality, retention difficulties, training improvements, defense medical programs, our continuing equal opportunity efforts, and other issues.

Complex interrelationships between peacetime workloads and projected wartime demands govern the Defense manpower requirement. The procedures used by the Services and Defense agencies to determine manpower requirements, and the relationship between those requirements and the security of the nation, are summarized in the annual Defense Manpower Requirements Report.

Table 13-1 presents our overall projections of defense manpower strengths. We plan to increase active military personnel by 28,000 in FY 1982, and to continue at about that resulting manpower level through FY 1986. Civilian personnel strength is projected to remain constant over the period FY 1982 through FY 1986, while steady increases are programmed for the Selected Reserve as reserve recruiting and retention continue to improve.

TABLE 13-1

Defense Manpower Strengths
(End Strengths in Thousands)

	FY 1980 Actual	FY 1981	FY 1982	FY 1983
Active Military	2,050	2,065	2,094	2,100
Civilian	990	994	995	995
Selected Reserve	851	885	923	960

Our Armed Forces are now in their eighth year as an All Volunteer Force (AVF). During this eight-year period, we have never been more than 1.5 percent below our authorized strength levels. Table 13-2 summarizes our manpower strengths for FY 1980 by Service for both active and Selected Reserve components. I am heartened by our continuing success in achieving our overall active force manning goals.

TABLE 13-2

Active Force and Selected Reserve Military End Strengths
(End Strengths in Thousands)

	Actual FY 1980	FY 1980 Column of the FY 1981 Pres. Budget	Percent of Plan
Active Force			
Army	776.5	774.0	100.3
Navy	527.2	528.0	99.8
Marine Corps	188.5	185.2 1/	101.8
Air Force	558.0	558.0	100.0
TOTAL	2,050.1	2,045.2	100.2
Selected Reserve			
Army National Guard	366.6	358.6 2/	102.8
Army Reserve	206.6	200.3 2/	103.2
Naval Reserve	87.0	87.0	100.0
Marine Corps Reserve	35.4	33.7	105.0
Air National Guard	96.3	94.0	102.4
Air Force Reserve	58.9	58.2	101.2
TOTAL	850.8	931.8	102.3
TOTAL, Active Force and Selected Reserve	2,900.9	2,877.0	100.8

1/ Marine Corps authorized end strength was raised to 188.1 subsequent to the budget submission.

2/ Represents limits of expected recruiting/retention potential rather than manning goals. Army components are at approximately 80.2 percent of wartime requirements.

Table 13-3 presents defense manpower costs for selected years.

TABLE 13-3

Defense Manpower Costs 1/
(Outlays in Billions of Current Year Dollars)

	FY 64	FY 74	FY 79	FY 80	FY 81	FY 82
Manpower Outlays, Military Personnel Appropriations	12.3	22.1	26.3	28.5	33.6	37.5
Defense Family Housing Appropriations 2/	.5	.7	1.2	1.4	1.5	1.6
Military Retired Pay Appropriations 3/	1.2	5.1	10.3	11.9	13.8	16.0
Reserve/Guard Personnel Appropriations	.7	1.6	2.1	2.4	3.2	3.7
Civilian Costs 4/	7.5	14.1	19.8	21.4	23.3	24.4
Personnel Support Costs 5/	1.7	3.0	4.8	5.3	5.8	6.3
TOTAL Manpower Costs	23.9	46.7	64.5	70.9	81.2	89.5

NOTE: Numbers may not add to totals due to rounding.

1/ Data exclude civil functions.

2/ Excludes civilian pay portion of this appropriation, which is included under civilian costs.

3/ For those already retired. Future retirement costs for the current force are not presently reflected in the budget.

4/ The cost of civilians is budgeted under the functional appropriation, e.g., operations and maintenance, family housing, RDT&E. Civil Defense pay is excluded in all years.

5/ Preliminary data for FY 1981 and FY 1982. Excludes the direct costs of military and civilian personnel since these are accounted for separately. Includes costs of individual training, medical support, recruiting and examining, overseas dependent education, half of base operating support, and a miscellaneous category.

The specifics of the FY 1982 Defense Manpower Program are determined in the context of many difficult constraints. Among the more challenging demands are the need to balance peacetime workloads with wartime demands, the importance of having the proper mix of skills and experience in our forces, and the task of combining our capable personnel and our constantly evolving military technology. I believe that these challenges are adequately met in our FY 1982 Defense Manpower Program.

II. PROGRAM DESCRIPTION

A. Manning the Active Peacetime Force

1. Recruiting

Recruiting continues to be a challenge for the Services, especially for the Army. Nevertheless, all four Services achieved their FY 1980 recruiting goals. The total number of men and women recruited (389,900) was about 52,000, or 15 percent, more than in FY 1979. These gains resulted from increased recruiting resources, and perhaps from poor economic conditions as well. They included an increase in the number of recruits who did not graduate from high school.

Table 13-4 shows the actual and planned Service enlisted accessions for FY 1979 through FY 1983. FY 1981 total DoD accession requirements are somewhat lower than those for FY 1980. However, accession requirements increase somewhat for the Navy and Air Force, and all Services are seeking more high school graduates in FY 1981 than were recruited in either FY 1979 or FY 1980. FY 1981 Service plans call for an increase in male high school graduate recruits of 11 percent over FY 1979. This increase must be achieved in the face of a 3.4 percent decline in the relevant labor pool between FY 1979 and FY 1981.

TABLE 13-4

Service Enlisted Accession and Recruiting Performance Plans
All Sources
(Numbers in Thousands)

	Actual				Planned		
	FY 1979		FY 1980		FY 81	FY 82	FY 83
	Number	Percent of Objective	Number	Percent of Objective	Number	Number	Number
Army	142.2	89	173.2	102	146.0	153.0	156.0
Navy	86.4	94	97.7	100	104.0	98.4	94.7
Marine Corps	41.8	98	44.3	101	42.6	42.2	40.2
Air Force	67.8	98	74.7	100	83.2	79.7	86.0
DoD	338.2	93	389.9	101	375.0	373.3	376.9

Table 13-5 depicts Service high school graduate recruiting achievement for the last two fiscal years. A substantial concern in FY 1980 was the low proportion of high school graduates among new recruits. Although the total number

of graduates recruited by all Services in FY 1980 showed an increase of about 13,600 (or six percent) over FY 1979, the percentage of high school graduates among new recruits fell from 73 percent to 68 percent overall. The sharpest decline was in the Army, which reported a 54 percent high school graduate rate for recruits, compared to 64 percent in FY 1979.

TABLE 13-5

Non-Prior Service Accessions
High School Graduates
Male and Female*

	FY 1979		FY 1980	
	Number	Percent	Number	Percent
Army	82,900	64	85,800	54
Navy	61,700	77	65,800	75
Marine Corps	30,200	75	32,500	78
Air Force	55,200	83	59,300	83
DoD	230,000	73	243,500	68

* Numbers may not add to totals due to rounding.

Recently enacted Congressional restrictions, which limit the proportion of the lowest acceptable test score category (Category IV) recruits and non-high school graduates that can be accepted, complicate the recruiting picture for FY 1981 and beyond. Table 13-6 summarizes these restrictions.

TABLE 13-6

Congressional Controls on Recruiting
in FY 1981 DoD Authorization Act

Fiscal Year	Maximum Percent Category IVs*	Minimum Percent High School Grad
1981	25% DoD Average	Army - 65%
1982	25% Each Service	No Restriction
1983+	20% Each Service	No Restriction

* Based on current test calibration.

The 25 percent ceiling on Category IV accessions imposed for each Service in FY 1982 is of particular concern. The Army may not be able to meet this ceiling without incurring a recruiting shortfall. This will become even more of a problem in FY 1983, when the Category IV ceiling drops to 20 percent for each Service.

With the combination of high accession goals in FY 1982 and FY 1983, Congressional recruiting constraints, expected improvements in the economy, and a continuing decline in the youth market size, recruiting will remain an extremely challenging task. We will continue to make every effort to enhance both the attractiveness of military service and its competitiveness in the youth labor market. We will continue to monitor the effects of shorter terms of service and enhanced educational benefits, as well as of increases in enlistment bonuses and in advertising and recruiting resources, in order to ensure that we recruit adequate numbers of personnel with the characteristics needed for effective military performance. Table 13-7 indicates the enlisted recruiting resources programmed for FY 1980 through 1982.

TABLE 13-7

Active Force Enlisted Recruiting Resources 1/
(Millions of Current Year Dollars)

Service	FY 1980	FY 1981	FY 1982
Army	288	347 2/	446
Navy	132	156	163
Marine Corps	81	94	97
Air Force	70	94	100
Joint-Service 3/	28 4/	48	54
DoD	598	739	859

1/ Numbers may not add to totals due to rounding.
2/ Excludes $20M in reprogramming authority authorized by Congress.
3/ Includes recruiting office leases, funding for Joint Advertising and Market Research, and funding for the Educational Assistance Test Program Advertising.
4/ Excludes $10M Joint Advertising Program funded in Service budgets.

2. Retention

Manning an effective fighting force requires that we retain the experienced soldiers, sailors, airmen, and marines who are critical to the operation and maintenance of an increasingly complex military organization, and that we recruit new members of the armed forces to ensure a steady personnel flow. High retention lessens the need for new recruits while a new steady state is reached. One of the benefits anticipated in the move to the AVF was a higher rate of retention among enlisted personnel in their early years in service. We look at three principal measures to evaluate retention--the rates of completion of the first term of enlistment, reenlistment at the end of the first term, and reenlistment at

second and later terms. Our success has been mixed. The length of the average initial active duty commitment for enlisted personnel has increased under the AVF, from 3.46 to 3.74 years. On the other hand, an increase in attrition prior to completing the first-term was a major disappointment of the early years of the AVF and partly offset the effect of the longer enlistments. As shown in Table 13-8, the attrition rate for enlisted men grew markedly after FY 1971. However, this trend has now been reversed. I expect that more than 70 percent of the new male recruits who entered service in recent years will complete their initial term of service.

TABLE 13-8

Percent of Active Duty Male First-Term Enlistees Who Failed to Complete Three Years of Initial Service
(Based on Year of Entry into Service)

	Actual Percent Loss							Estimated Percent Loss*	
Service	FY 71	FY 72	FY 73	FY 74	FY 75	FY 76	FY 77	FY 78	FY 79
Army	26	28	31	39	37	37	34	31	31
Navy	28	32	34	38	35	31	29	26	27
Marine Corps	31	24	32	37	38	35	29	30	29
Air Force	21	26	30	31	29	26	26	27	27
DoD	26	28	32	37	35	34	31	29	29

* These groups have not had time to complete their full three years of service.

We will continue to focus on reducing attrition. We must ensure, however, that we do not degrade force quality or reduce fighting capability. We should not reduce attrition by retaining people who cannot or will not do the job. Rather, the Services are lowering attrition by increasing the management attention devoted to this problem and by screening prospective applicants to exclude high-risk personnel.

Overall, the trend in the reenlistment rate of first-term service members has been favorable. The Army, in particular, has experienced a dramatic climb in the first-term reenlistment rate, achieving a level of 50.6 percent of those eligible in FY 1980. In addition, more of the recruits who entered military service during the early years of the AVF are entering the career force (personnel with over four years of service) today than was the case in the draft era. To achieve the maximum results from this trend, we must ensure that we retain these experienced people at subsequent reenlistment points.

In recent years, the decline in retention of our more experienced service members has caused serious concern, especially in the Navy and Marine Corps. Table 13-9 shows the trend in career reenlistment rates.

TABLE 13-9
Career Reenlistments
Active Duty Enlisted Personnel

Fiscal Year	Army		Navy		Marine Corps		Air Force		DoD	
	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*
1974	40,788	74.5	37,104	80.3	6,853	79.6	46,773	89.8	131,518	81.4
1975	40,445	75.4	34,026	80.5	6,783	73.1	50,212	89.6	131,466	81.5
1976	38,022	70.8	22,801	74.8	5,608	77.6	48,762	81.9	115,193	76.3
1977	49,545	69.5	19,594	68.1	6,040	71.6	44,587	86.2	119,766	74.8
1978	52,735	68.6	19,465	63.5	6,647	69.1	37,299	82.2	116,146	71.5
1979	54,416	66.4	18,418	62.2	8,291	51.9	36,212	81.5	117,337	68.2
1980	57,359	69.3	21,835	67.0	7,895	50.4	38,409	81.8	125,498	70.5

* Percent of those eligible.

I am somewhat encouraged by the FY 1980 results and I expect to see a further upturn in career reenlistment rates in FY 1981, as recent improvements in military compensation begin to influence the reenlistment choices of our experienced personnel.

We will continue to strive to achieve an increase in careerists. At the end of FY 1980, 42 percent of the enlisted members of our active force had more than four years of service. Since 1974, the Army has increased its career content by over 45,000 soldiers to a level where a record 40 percent of the force has over four years of service. Although the career content of the other Services has remained relatively stable, an unusually large number of service members reaching retirement eligibility and a decline in career retention have resulted in a less experienced career force. We intend to monitor this situation closely and expect to see a significant improvement in enlisted retention over all Services in the year ahead.

I remain concerned also about the retention of officers in certain critical specialties. The Air Force, Navy, and Marine Corps have sustained a significant downturn in retention of experienced pilots over the past years. Although demand for experienced pilots in the private sector is expected to continue through the 1980s, I anticipate that recently enacted improvements in pilot pay will offset the attraction of the airlines and will lead to improved retention. In the interim, however, and perhaps even over the long run, we need increased training rates to sustain our pilot inventories.

The Navy is experiencing problems in recruiting and retaining nuclear-qualified officers. Volunteers for nuclear power training from the U.S. Naval Academy and Naval ROTC sources have not kept pace with requirements, and the

Navy has been forced to assign some new officers to meet nuclear requirements. While I expect the demand for nuclear-trained personnel to continue to increase through the 1980s, I anticipate that the recently passed Military Personnel and Compensation Amendments Act of 1980 will help offset the attractiveness of the private sector and will help us reach our goal of 60 percent retention.

The Air Force is experiencing considerable difficulty in recruiting engineers in the numbers required. Accession shortfalls have risen from 13 percent in 1977 to over 60 percent today--due mainly, I believe, to significantly higher entry-level salaries in the private sector. I anticipate that the recent military pay raise, coupled with intensified recruiting directed at college engineering students, will alleviate this problem.

3. Quality of Life

Quality of Life embraces a number of programs and individual projects designed to create an environment that recognizes that our Armed Forces personnel are our most important asset. These include: military construction and operational funding programs for medical, housing, child care, education, religious, postal, recreational, and other community facilities; job-related policies regarding tour lengths, officer-enlisted inequities, government housing assignment criteria, employment and deployment of women and single parents, privacy standards, financial counseling, and a comprehensive system of compensation, recognition, and awards; and an active public affairs program to engender understanding by service members of their role in national defense and to enhance public appreciation of the role of our Armed Forces.

As outlined elsewhere in this report, progress has been made in improving military compensation, housing, personnel services, and benefits. Much remains to be done in areas related to the military family, particularly with regard to child care. The Services have established staff offices to address the needs of a predominantly married force. Over the next decade we expect that the numbers of working spouses, single parents, and joint-Service parents (both in service) will continue to increase. Family service centers are being established on larger bases to ease family-related problems. Around-the-clock child care is being tested, as is satellite family day care. New initiatives in the 1980s will be needed to construct or to renovate child care facilities on DoD installations.

The human dimension of military life--the job, living, and recreational conditions--is a highly pertinent factor in the recruitment, retention, discipline, morale, and readiness of military members. Efforts to improve the quality of service life epitomize the DoD commitment to treating its military personnel equitably, with compassion, concern, and consideration.

4. Training

We are continuing to emphasize quality training for new entrants into service, for members of the career force, and also for operational units in the field. Sound, realistic training is essential to readiness. The Army, for instance, is pursuing two major initiatives to improve the individual capabilities of soldiers to contribute fully to the success of their operational units.

The first initiative is to lengthen and intensify initial entry training. After careful study of the tasks soldiers must perform in the field, the Army concluded that new soldiers need more instruction in certain military subjects and greater exposure to a disciplined environment. Consequently, one week is being added to the curriculum for recruit training and one-station unit training (OSUT) courses. At the same time, the training day for these courses will be lengthened from eight to nine hours. Much of the added training time will be devoted to more intensive training in the use of weapons. This initiative is expected to pay off, not only in graduates who are more proficient in military skills, but also in improved discipline, greater motivation, and reduced post-training attrition.

The Army's second initiative takes advantage of technological developments to improve the realism and effectiveness of small-arms marksmanship training. The new Infantry Remote Targeting System (IRETS) will complete the development stage in FY 1982 and will be ready for procurement funding in FY 1983. IRETS will feature automated control devices and scoring for multiple, stationary, and moving two- and three-dimensional rifle targets that will simulate the muzzle flashes and sounds of hostile fire. The realism built into IRETS will greatly increase the soldier's ability to survive while placing accurate fire on the enemy.

It is very difficult and expensive to provide realistic training to operational units. Land and airspace for training are restricted in terms of allowable firing and maneuvering. We have, therefore, directed our efforts toward the optimal utilization of available training resources and towards the use of technology to extend and supplement these resources. The Army's National Training Center (NTC) and the Air Force's RED FLAG exercises illustrate these points.

The concept for the NTC grew out of the realization that our combat units' home installations, most of which were procured during World War II when the ranges of weapons were much shorter than they are today, were entirely inadequate to reproduce realistic training under battlefield conditions. The NTC, which is now under development at Fort Irwin, California, a 643,000-acre installation in the Mojave Desert, will go a long way towards solving this problem by providing a training area where a total combat environment can be simulated. The area's size and isolation from civilian communities allow full-power electronic warfare play and realistic close air support, as well as wide-ranging maneuvers against opposing forces by heavy ground combat units. The NTC, through standard scenarios and control groups using instrumented ranges, will provide a unique capability to test tactics, diagnose faults, and measure training readiness objectively. In FY 1984, when the NTC is fully operational, it will provide two weeks of intensive training for 21 heavy combat brigades annually.

The Air Force's on-going RED FLAG exercises at Nellis Air Force Base, Nevada, serve a similar purpose. Air Force experience shows that an aircrew's ability to survive in combat increases dramatically after the first ten missions. RED FLAG is designed to simulate, as closely as possible, the experience aircrews would undergo in those first ten missions. RED FLAG employs a permanent "enemy" force trained in Soviet air tactics. "Friendly" aircraft engage this enemy force in simulated combat. At the end of the mission, crew debriefings and gun camera results are used to reconstruct the course of the battle. Participants can learn who won, how and why they won, and how the outcome could have been altered. Aircrews so trained will be far better equipped to fight successfully and to survive in the early days of actual combat than conventionally trained crews.

One of the most difficult problems in training ground combat units is to measure success in engaging the enemy, while at the same time minimizing vulnerability to enemy fire. MILES--Multiple Integrated Laser Engagement System--is a training device designed to solve this problem by using lasers and laser detectors to register hits and near misses, thus vastly increasing the training value of maneuver against enemy forces. Funds have been appropriated to complete procurement of MILES and to provide a "division set" of MILES equipment to each active and reserve component division.

We are also continuing a strong emphasis on the procurement and proper use of flight simulators. Since 1976, we have consistently invested about $300 million a year in new flight simulators. While most public interest has focused on saving fuel through simulation--and simulators do allow us to avoid the use of over 400 million gallons of aviation fuel for training annually--the primary benefit of simulators is better training. For example, they make it possible to practice recoveries from in-flight emergencies that cannot safely be duplicated in an aircraft, and they further allow both playback to diagnose faults in recovery techniques and repeated practice to eliminate these faults.

Through these methods and other applications of ingenuity and technology, we will make military training increasingly realistic, thereby improving the readiness of our forces for their wartime missions.

5. Chemical Warfare Defense Readiness

Our chemical warfare (CW) planning places primary emphasis on the protection of our forces, and we have significantly raised the funding levels for CW defense. The program for development of protective equipment includes: improved therapy and prophylaxis against chemical agents, improved decontamination equipment, personnel collective protection for vehicles and shelters, remote CW agent surveillance and detection devices, and training systems.

Additionally, readiness will be increased by force structure changes continuing the trend of the last two years. The Army will add one nuclear, biological, and chemical (NBC) defense company, five NBC elements, and one decontamination team to its active forces in FY 1982. The Marine Corps will add 393 personnel to its fleet forces in direct support of the NBC surveillance and decontamination mission.

We have considerably improved the capability of our forces to operate in contaminated environments. We have not, however, achieved our goal of being able to operate indefinitely in contaminated environments.

B. Health Resources

1. Wartime Medical Posture

The Civilian-Military Contingency Hospital System (CMCHS) has been implemented and a program design has been established. The CMCHS will link participating civilian hospitals and health care providers with a designated military hospital for the purpose of supplementing the military system in time of war. These military hospitals will assist participating community hospitals in

the development of plans, education, and training of personnel, and in the peacetime exercise of the system. If the system is activated in a wartime situation, the civilian hospitals will help the military hospitals care for casualties. Evaluation of the program was conducted at Scott Air Force Medical Center, Illinois (St. Louis area), Madigan Army Medical Center, Washington (Tacoma-Seattle area), and Portsmouth Naval Regional Medical Center, Virginia (Norfolk area). Initial results have been excellent and clearly indicate that civilian hospitals will participate in the contingency planning effort. At present, the system is being expanded to other locations.

2. Peacetime Medical Posture

Our peacetime goal is a Military Health Service System that satisfies military medical support requirements and provides quality care to all beneficiaries. This care should be an explicit, integral component of military compensation policy. The resources required to achieve this goal are allocated to the direct care system and to the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS).

The shortage of physicians in the military Services remains the major problem confronting the direct care system. We anticipate, however, that with an increased output from the Armed Forces Health Professions Scholarship Program and the Uniformed Services University of the Health Sciences, along with moderate success in direct recruiting, we will soon achieve the total numbers authorized. Specialty shortages, however, will persist for some time. Physician retention is expected to improve as a result of the increased special pay authority provided by the Uniformed Services Health Professionals Special Pay Act of 1980, which enables us to offer a number of financial incentives.

Improvements have been made in terms of management and expanded benefits in the CHAMPUS program, which is one of the key factors in recruitment and retention of active duty personnel. We have improved service to our beneficiaries by processing their claims more efficiently and in a more timely manner. Both the recent addition of well-baby care and the greater financial assistance under the Program for the Handicapped focus on improvements for the active duty member and his family. Dependent dental care, another benefit that is long overdue, currently is under consideration by the Congress. In addition, we are continuing to review other facets of the CHAMPUS benefit package that may require modification in order to become more competitive with civilian-sector health programs.

In time of mobilization or conflict, CHAMPUS would become the primary means of providing medical care to all non-active duty beneficiaries. We are taking action to ensure that the program is ready to absorb the expected significant increases in workload, should the need arise.

C. PERSONNEL MANAGEMENT

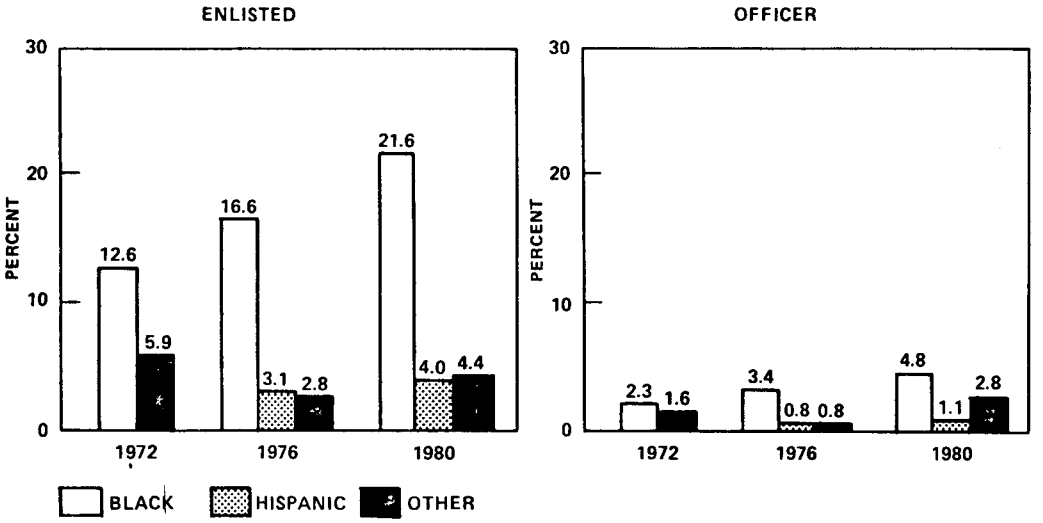
1. Minority Representation

As of June 1980, 29.9 percent of the active duty enlisted force were minority personnel (21.6 percent Black, 4.0 percent Hispanic, and 4.4 percent others). Historically, the Army has had the highest percentage of minorities (41 percent), while the Navy has had the lowest (20 percent). Chart 13-1 shows the percentage of minorities in the active duty force.

CHART 13-1

ALL SERVICE MINORITY REPRESENTATION

30 JUNE 72/30 JUN 76/30 JUN 80



NOTE: RELIABLE ETHNIC DATA NOT AVAILABLE BEFORE 1976

The June 1980 figures show that 27.3 percent of the Selected Reserve enlisted force were minority personnel (18.2 percent Black, 5.8 percent Hispanic, and 3.3 percent others). From FY 1970 to FY 1980, the Army Reserve increased its proportion of Black personnel from a little over two percent to 28 percent. The most recent figures available show that, although there has been modest growth since last year, the lowest proportion of enlisted Blacks in the Selected Reserves are found in the Naval Reserve and the Air National Guard, with 8.2 percent and 7.8 percent, respectively.

As of June 1980, 8.6 percent of the active duty officer force were minority personnel (4.8 percent Black, 1.1 percent Hispanic, and 2.7 percent others). The percentage of Black active duty officers in all Services has increased from 1.9 percent in FY 1970 to 4.8 percent in FY 1980. The Army is up from a low of less than three percent in FY 1970 to over seven percent in FY 1980.

The June 1980 figures show that 8.3 percent of the Selected Reserve officer force were minority personnel (3.6 percent Black, 1.7 percent Hispanic, and 3.1 percent others). While the percentage of Black officers in the Selected Reserve has increased by over 60 percent since FY 1973, Blacks still represent only 3.5 percent of all the Selected Reserve officers.

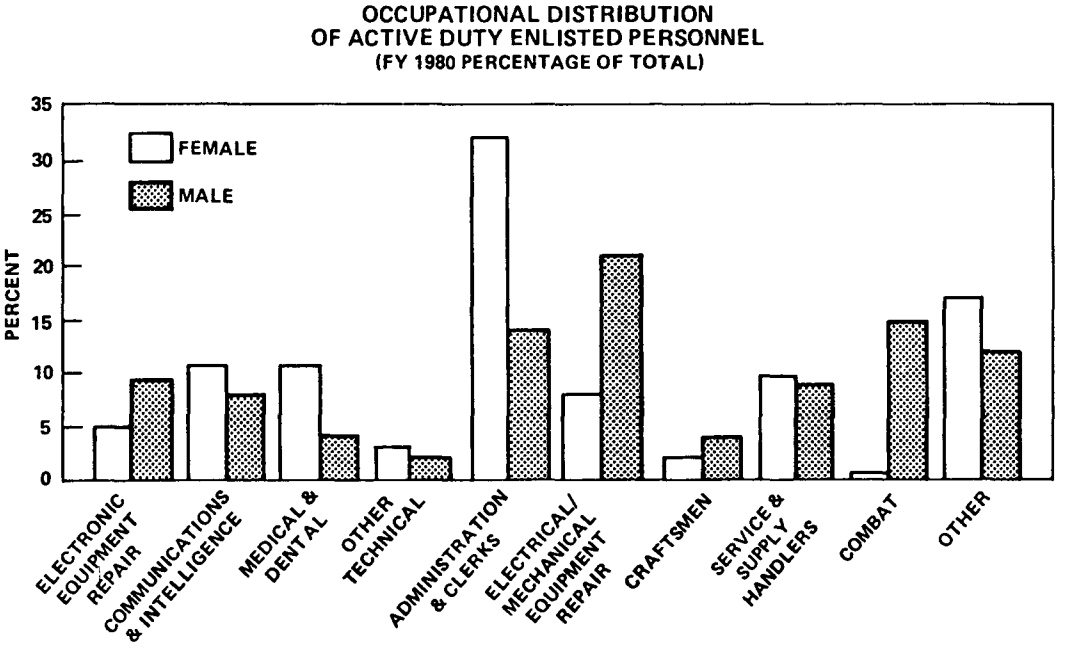
Our DoD Affirmative Actions Program (AAP) is now linked with the DoD budgetary cycle to ensure that the fiscal implications of our AAP objectives are considered and that necessary direction and emphasis are provided.

2. Women in the Military

We now have about 164,000 women in our active forces; 29.1 percent of them are minority women (23.2 percent Black, 2.7 percent Hispanic, and 3.2 percent others). Of our total force, women represent 8.1 percent, an increase of some 14,000 women over end-FY 1979 strengths. We plan a sustained increase in these numbers to reach a FY 1986 goal of over 12 percent. Market surveys indicate that there are enough women qualified and interested in enlisting to allow us to achieve our 1986 goal.

Chart 13-2 shows the distribution by sex and occupational group of our active duty enlisted personnel. Women are still serving by choice predominantly in the traditional female skill areas of administration and medicine. Further, there are some indications that women are migrating from nontraditional occupational skills (mechanics and electronics) into more traditional skill areas (clerical and medical support). We will monitor this situation to determine if the trends are adverse.

CHART 13-2



At the same time, many women coming into the Services as officers aspire to occupations virtually closed to them by statutory restrictions. Thus, as part of our legislative package before the 95th Congress, we urged repeal of the provisions of Title 10, U.S.C., Sections 6015 and 8549, which prohibit women from serving as permanent crew members aboard Navy combat ships and as crew members of Navy or Air Force aircraft on combat missions. In 1979, P.L. 95-485 modified the combat restrictions regarding the assignment of women to Navy vessels and permitted the assignment of women on a permanent basis to non-combatant vessels and to temporary duty on combat vessels for a limited time, not to exceed 180 days.

We also are addressing such issues as whether women trained in nontraditional occupations actually are being assigned to units, whether they are experiencing peer and supervisory acceptance, whether more precise physical standards by occupations should be set, and whether proper uniforms and equipment are available to women.

3. President's Fair Benefits Package

The two legislative initiatives known as the Fair Benefits Package (P.L. 96-343, the Military Personnel and Compensation Amendments Act of 1980, and P.L. 96-342, the Department of Defense Authorization Act for 1981) were enacted by the Congress last year and signed by the President on September 8, 1980. The specific compensation improvements contained in the two bills follow.

P.L. 96-343 (Military Personnel and Compensation Amendments Act of 1980)

-- increase in authority to reimburse members who make permanent change of station moves;

-- 25 percent increase in aviation career incentive pay, and in enlisted flight pay;

-- 15 percent increase in, and immediate application of, FY 1982 sea pay rates;

-- 10 percent increase in the basic allowance for subsistence; and

-- authority to pay a variable housing allowance to members assigned to an area in the United States where average military housing costs exceed average basic allowance for quarters (BAQ) by more than 15 percent.

P.L. 96-342 (FY 1981 DoD Authorization Bill)

-- 11.7 percent increase in basic pay, basic allowance for subsistence, and basic allowance for quarters;

-- authority to pay a reenlistment bonus to personnel with between 10 and 14 years of service;

-- authority to pay a family separation allowance to E-4 and below;

-- authority to increase reimbursement when a member moves a mobile home;

-- authority to increase the maximum enlistment bonus from $3,000 to $5,000, the maximum selective reenlistment bonus from $15,000 to $20,000, and a two-year extension of the authority to pay enlistment and reenlistment bonuses to members of the active forces;

- -- authority to pay a $600 reenlistment bonus to members of the Individual Ready Reserve for a one-year trial;

- -- increase in the daily per diem rate from $35 to $50 when members are on temporary duty, and increase in the rate in high-cost areas from $50 to $75;

- -- authority to pay a continuation bonus of up to four months' base pay to rated officers with more than six, but less than 18, years of service;

- -- authority for the President to reallocate up to 25 percent of the base pay increase by grade and years of service;

- -- a one-year extension of the enlistment and reenlistment bonuses and educational assistance program for all units of the Army Guard and Reserve;

- -- a new selective affiliation bonus for the Selected Reserve;

- -- a two-year extension of the Marine Corps Platoon Leaders Class (PLC) program; and

- -- coverage in the CHAMPUS program for routine infant medical care, and an increase from $350 to $1,000 per month in the maximum coverage for handicapped dependents.

All of these measures, along with those contained in the Military Pay and Allowances Benefits Act of 1980, will improve the financial situation of our service personnel, as well as make our overall compensation incentives more effective in attracting and retaining the numbers and quality of manpower required. Improved retention will arrest and, I hope, reverse the trends in losses of enlisted and officer personnel with 10-15 years of service. We anticipate that this will improve force readiness and operational capabilities in the near future.

4. General/Flag Officer Strength

Last year, I again asked the Congress to repeal the ceiling on general/flag officers established in the FY 1978 Department of Defense Appropriations Authorization Act, which would have forced the Department to reduce the number of general/flag officers on active duty to 1,073 by the end of FY 1980, a reduction of 46 from the current level of 1,119. In response to my request, the Congress included provisions in the FY 1981 Department of Defense Authorization Act that deferred the requirement to reduce to the 1,073 ceiling to the end of FY 1981.

The Senate Armed Services Committee, in its report on the Act, levied on the Department the requirement to report back to the Committee by March 1, 1981 with recommendations on: (1) the reallocation of 24 general/flag officer billets among the Services in other than a "pro rata" distribution; (2) the elimination of minimum grade requirements for general/flag officers established by

statute; and (3) a methodology for validating the requirement for at least 25 percent of the general/flag officer resource each year. In addition, the House Armed Services Committee, in its report on the Defense Officer Personnel Management Act (DOPMA), directed that the Department: (1) include Senior Executive Service (SES) civilian personnel billets in the reallocation and in developing the annual validation methodology, and (2) prepare a legislative proposal that would provide revised permanent grade limits for the Services to replace the outmoded grade tables currently established by law.

Consideration of the inputs that will be submitted by the Department in fulfilling these requirements will provide a more appropriate forum for settling this issue, so I urge that the arbitrary end-fiscal year 1981 ceiling of 1,073 general/flag officers be repealed.

5. Educational Benefits Test

We have begun the one-year educational assistance test program that was mandated in the FY 1981 DoD Authorization Act, the purpose of which is to evaluate the role of educational assistance in recruiting and retention. The Army will be testing the contributory Post-Vietnam Era Veterans Education Assistance Program (VEAP) with new "superkicker" levels of $8000 for two-year enlistment and $12,000 for enlistment of three years or more in certain military occupational specialties. In selected areas of the country, we will test two noncontributory educational programs for enlistees in all Services who meet specific qualifications. The first of these programs is noncontributory VEAP, in which DoD will pay the member's contribution to the VEAP, and the Veterans Administration will match this payment on a $2 to $1 basis. The second noncontributory test provides up to $1200 a year in tuition assistance and $300 per month as a subsistence allowance, with annual adjustments to reflect changes in the cost of attendance at public institutions of higher education. Members eligible for the latter program may also elect a reenlistment in order to transfer the earned education benefit to spouse or child or to receive a cash benefit equal to 60 percent of the member's funded benefit.

We also will conduct a nationwide test of a program of educational loan forgiveness for those persons enlisting in the active forces or reserves who meet specific qualifications. The aim of this program is to attract persons who already have received some post-secondary education by incurring an educational loan obligation. We will test the effectiveness of offering the repayment of an educational loan made after a member leaves the Service. The purpose of these one-year tests is to evaluate the role of educational assistance in recruiting and retention. We hope to be able to report more extensively on the success of these efforts in the Spring of next year.

6. Civil Service Reform Implementation

After our first year's implementation of the Senior Executive Service system throughout the Department of Defense, I remain convinced that the Civil Service Reform Act is a major means of increasing the efficiency and effectiveness of our operations. We have experienced improvement in communicating DoD goals and objectives at executive levels as a direct result of the new performance appraisal system instituted for our executives. I discuss this issue in detail in Section II, Chapter 15.

7. Civilian Compensation Reform

As noted in Section I, Chapter 7, I support the proposed Federal Employees Compensation Reform Act. With almost one million civilian employees, DoD is the largest employer of civilians in the federal government, and therefore it is greatly affected by the problems that exist in current compensation systems. The proposed legislation will enable DoD and the entire government to compensate civilian workers more efficiently and equitably by:

-- broadening the principle of comparability to include both pay and benefits;

-- improving the comparability process for 300,000 DoD blue-collar workers;

-- improving comparability by including state and local governments in compensation calculations and by tying compensation for most white-collar workers to local compensation levels; and

-- establishing flexibilities in compensation systems to allow DoD and other agencies to recruit and to manage a quality work force.

8. Uniformed Services Retirement Benefits Act

In July 1979, I submitted to the Congress the proposed Uniformed Services Retirement Benefits Act in order to correct deficiencies and inequities in pay, benefits, and retirement programs that were highlighted in the April 1978 report on the President's Commission on Military Compensation. The provisions of this proposed reform would not apply to past or present members of the Armed Forces, except insofar as provision is made for present members to opt for the new system if they choose.

I believe our proposed plan will reduce total retirement system costs, after a transition period that will protect the interests of members of the current active duty force. The eventual savings are projected to be in excess of 30 percent of current system costs. I expect that retention and turnover under this plan would be at least as good as under the present system. While more personnel would stay past the first term of service to qualify for limited benefits available at 10 to 15 years, fewer would complete 20 years of service and qualify for a higher pension.

9. Financing Military Retirement Costs on an Accrual Basis

As noted in Section I, Chapter 7, I urge consideration of the proposed legislation to change the way the budget accounts for military retired pay. The budget now reflects only the annuity outlays for military personnel who already have retired. Under the proposed legislation, the budget would reflect the future retirement benefits accrued by military personnel on active or reserve duty. This change is designed primarily to improve personnel management by focusing attention on retirement costs that can be controlled. Because the proposal

involves complex changes in many parts of the budget that are contingent upon enactment of the legislation, the changes have not been reflected in the FY 1982 budget schedules.

III. CONCLUSION

The programs outlined above are critical to the strengthening of our overall defense posture. Their importance lies in the fact that they address the needs of our most important defense resources--the men and women who make up our Armed Forces. I am confident that these manpower programs will achieve the dual objectives of contributing materially to the national defense, while providing for the equitable treatment of our Service members.

CHAPTER 14

MOBILIZATION

I. INTRODUCTION

During the past year, we continued to enhance our capability to mobilize. We have concentrated on improving the manning of the Selected Reserve, our supply of pretrained individuals, and the Army's capability to expand its training base rapidly. We also have expanded our mobilization planning effort and have completed a series of mobilization exercises programmed to test our accomplishments.

II. DEFENSE MOBILIZATION PLANNING

A. DoD Master Mobilization Plan

I am encouraged by the progress we have made in our program to improve DoD mobilization plans. Our DoD Master Mobilization Plan is a significant improvement in this regard. During the coming months, we will refine our Master Mobilization Plan and will expand and develop lower-level implementing plans based on the results of Exercise PROUD SPIRIT.

B. Federal Mobilization Planning

In March of 1979, the President signed a directive that institutionalized a Federal Interagency Mobilization Planning Study Group and provided for the development of a Federal Master Mobilization Plan. The effort is being carried out by 20 federal agencies under the leadership of the National Security Council staff and the Federal Emergency Management Agency. The Mobilization Planning Study Group has produced guidance for mobilization planning within the federal government. Another product of the effort is the list of major emergency actions that require decisions by the National Command Authorities as part of mobilization, as well as the policy, planning, and preparedness activities.

This interagency mobilization planning effort has underscored the interdependence of the federal agencies in the mobilization process. We have identified many areas requiring improvement. The work done to this point has illuminated how federal organizations interact, and a shared understanding is developing that will better orient all of government to defense needs for mobilization. We expect the ultimate products of the interagency planning effort to be of great value.

The National Security Council also has established a Mobilization Research Support Group to serve as a two-way conduit between the national mobilization planning effort and the senior professional military educational institutions. This effort holds high promise because it brings to bear on "real world" issues a large and select body of experience, while at the same time developing a mobilization-oriented cadre of civilian and military people.

III. RESERVE COMPONENTS

The Ready Reserve is designed to provide the additional units and trained individuals required immediately in the event of mobilization. The Ready Reserve

can be categorized into three elements: Selected Reserve Units, Pretrained Individual Reservists, and a Training Pipeline. Members of the Standby Reserves and retired personnel will be used as appropriate. With minimal training, Pretrained Individual Reservists, Standby Reservists, and retired personnel can provide some of the pretrained individual manpower needed to fill units and to provide replacements in the initial period of a mobilization. Shortages, however, do exist.

A. Selected Reserve Units

1. Strength

During FY 1979, the strength of the Selected Reserve Units increased for the first time in five years. This increase of 19,400 was encouraging, and the pattern has continued. During FY 1980, we added an additional 42,413 through the end of September. The manning projections for FY 1981 and the period FY 1982 through FY 1986 continue to show an upward trend. I expect the Selected Reserve Units to have attained our peacetime objective strengths no later than the end of FY 1986.

2. Initiatives to Increase Stength and to Improve Training and Readiness

The improved strengths of our Selected Reserve Units can be attributed to improved training, accelerated responsiveness, and improved attractiveness of Reserve service. The Congressionally sponsored incentive program for enlistment and reenlistment has been effective. The Congress has approved an affiliation bonus that is designed to attract prior service members to join the Selected Reserve before the end of their statutory military service obligation. Other initiatives include alternative enlistment options of three or four years in the Selected Reserve, an option for completing initial training in two separate increments, increased joint-Service advertising, and a full-time recruiting force for each Reserve Component. The major problem now facing the Reserve Components is the loss of personnel prior to completion of their contractual term of service. During FY 1980, we established a ten-point program aimed at controlling these losses. Improved training and training management are the key elements of that program. These initiatives will be continued in FY 1982.

B. Pretrained Individual Manpower

1. Strength

One of our most serious concerns today is providing sufficient numbers of individuals with prior military training to meet filler and replacement requirements during the early days of a major war. This requirement can be met partially by members of the Individual Ready Reserve (IRR), Individual Mobilization Augmentees (IMA), members of the Inactive National Guard (ING), members of the Standby Reserve, and retired military personnel. However, manpower shortages currently exist. The IRR, the primary group of pretrained individuals, declined in size to a low point of 342,000 in June 1978. However, as a result of numerous initiatives, the strength of the IRR has since increased by over 70,000 and is projected to continue to increase through the mid-1980s. As the strength of the IRR increases, we will place less emphasis on the use of the Standby Reserve and retired military personnel.

2. Initiatives to Increase Strength and to Improve Training and Readiness

Numerous initiatives have been instituted and will continue into FY 1981:

a. The effects of the 1978 legislation giving women a six-year service obligation will be seen in FY 1981, as those women completing their three-year tours of active duty begin entering the IRR.

b. Screening of individuals leaving active duty and the Selected Reserve prior to the end of their obligated service is continuing, in order to ensure that only those with no mobilization potential are discharged.

c. Transfers from the IRR to the Standby Reserve during the last, or sixth, year of obligated service have stopped.

d. Personnel management of Pretrained Individual Reservists and Standby Reservists continues to improve with better tracking and location procedures, more frequent contact, faster mobilization notification procedures, and peacetime refresher training.

e. The Army is continuing to test a two-year active duty enlistment, as a result of which individuals will spend a longer time in the IRR.

f. The Air Force's program of preassigning Individual Reservists (designated as Mobilization Augmentees) in peacetime to mobilization positions with active force organizations is being expanded to the other Services.

g. The Army National Guard has established an Inactive Guard program to permit the continued unit affiliation of Guard members when they are no longer with their units. This action will allow the recall of these individuals to augment existing units during an emergency.

h. We are expanding Service programs for the identification of mobilization positions that retirees could fill, for the maintenance of personnel files on retirees, and for the peacetime assignment of retirees to mobilization positions.

New initiatives that began in FY 1981 include the following programs:

a. We are streamlining mobilization procedures for Standby Reservists as a result of legislation eliminating the requirement that the Director of Selective Service declare Standby Reservists available before DoD can mobilize them.

b. We will offer a bonus of up to $600 to unobligated personnel to encourage them to reenlist for a minimum of three years in the IRR or ING.

c. We will conduct a test in FY 1981 to determine whether, by changing Army training policy in peacetime, we can increase the availability of combat-skilled soldiers in wartime. Under this concept, we would provide combat skill training to selected individuals holding support skill jobs and, in time of emergency, use those soldiers in the more essential combat skill jobs.

C. Resources

Table 14-1 shows the funds we have programmed to support these initiatives.

TABLE 14-1

Funds Programmed to Improve Selected Reserve Units/Pretrained Individual Manpower
($ Millions)

	FY 81	FY 82	FY 83	FY 84	FY 85	FY 86	Total FY 82-86
Selected Reserve Assets							
Current Incentives	51	109	130	149	162	173	774
Affiliation Bonus	0	11	11	11	11	11	55
Attrition Management	0	10	10	10	10	10	50
Pretrained Individual Manpower							
Personnel Management and Training	60	69	73	75	77	77	431
IRR/ING Reenlistment Bonus	12	14	16	18	18	19	97

IV. SELECTIVE SERVICE SYSTEM

A. Joint Planning

Last year, the Director of Selective Service and I established a joint senior-level steering group to develop plans for required mobilization support. The work of this group has been completed. We now have a joint mobilization plan that outlines procedures whereby the Department of Defense will supply the Selective Service System with facilities and personnel from our recruiting commands, on a temporary basis, to establish area field offices. These procedures will allow the Selective Service System to establish its field structure to support the induction process within a few days after mobilization is declared.

B. Joint Computer Center

We are requesting funds for a joint Department of Defense/Selective Service System Computer Center to help the processing of volunteers and inductees during mobilization. The Center will provide much-needed day-to-day peacetime computer support and wartime data processing to the Military Enlistment Processing Command (MEPCOM) and the Selective Service System. By using common equipment and establishing compatible procedures, we will eliminate many problems that currently exist. The Center also will provide the Selective Service System with an improved capability during mobilization to issue induction orders quickly to large numbers of registrants.

C. Improved Defense Capability to Process Inductees

During the past year, the Department has made significant improvements in its capability to process inductees during an emergency. We have completed and published a mobilization plan for processing new accessions, which is consistent with Selective Service mobilization plans and new capabilities. MEPCOM has developed a new operational plan for mobilization accessions and has established new Joint Augmentation Units. These units will be staffed with military retirees to provide additional physicians, medical technicians, and administrative personnel. As a result, the Department will be able to begin inductee processing within 13 days of a decision to mobilize. The military Services are in the process of notifying retirees selected for these units. The program will allow us to assign more of our younger military personnel to the more physically demanding jobs with forces overseas.

V. MOBILIZATION EXERCISES

We have continued to stress the importance of testing our mobilization directives and plans by conducting periodic mobilization exercises. Last fall, we conducted two exercises within DoD--PROUD SPIRIT and PETITE SPIRIT--to test our mobilization directives, plans, systems, and procedures under simulated crisis conditions.

A. Exercise PROUD SPIRIT

PROUD SPIRIT was a JCS-sponsored command post exercise designed and conducted as a follow-on exercise to the October 1978 exercise, NIFTY NUGGET. It centered on the mobilization process and the initiation of deployments from the CONUS under the threat of imminent hostilities; the exercise did not include any simulated war-fighting. There was wide DoD participation in the exercise, including the Joint Staff, the military Services, and the Defense agencies. PROUD SPIRIT was conducted in conjunction with the Federal Emergency Management Agency's mobilization exercise, REX BRAVO, which included wide participation by other federal agencies. The broad objectives of PROUD SPIRIT were to:

- -- determine the adequacy of existing mobilization plans, systems, and procedures;
- -- determine previously unidentified limitations and shortfalls in manpower and logistics procedures to support mobilization and initial deployment;
- -- exercise and evaluate reserve mobilization procedures;
- -- exercise mobilization interrelationships both within DoD and between DoD and other federal agencies; and
- -- assess the effectiveness of deployment planning.

Our evaluation of the exercise will be completed later this year. However, initial assessments have shown that PROUD SPIRIT verified the validity of many of the remedial actions undertaken as a result of the NIFTY NUGGET mobilization exercise, and it highlighted some additional areas in which improvements are needed.

During the exercise we noted that our knowledge of mobilization responsibilities, tasks, and procedures is greatly improved. This enabled us not only to overcome problems as they occurred, but also to examine better the complex mobilization process and to identify other potential problems. The exercise also highlighted the improved cooperation and support that DoD is getting from the civil sector and other federal agencies.

Although we have increased our supply of trained manpower, we are still not satisfied with the numbers and the mix of skills of those personnel who can be mobilized quickly; this is especially true of health professionals. We also found that we need to review, and perhaps need new legislation to improve current manpower authorities. In addition, the exercise demonstrated improvements in the ability of the Selective Service System to deliver inductees and in DoD's ability to accept them.

The Joint Deployment Agency's ability to manage deployment planning and execution has been improved over our previous, fragmented systems. Although we have considerable work yet to do, especially in automated support systems, we are headed in the right direction.

Although an exercise like PROUD SPIRIT is useful primarily for the evaluation of plans, procedures, organizational relationships, and systems, it also can highlight problems in resource allocation. Some problems, such as the critical need for aircraft spares and prepositioned equipment, were immediately apparent in the exercise; others, such as the expected availability of ships from the National Defense Reserve Fleet, require additional post-exercise evaluation.

We are continuing our evaluation efforts in these areas and others as well, and we are developing remedial actions to correct specific deficiencies noted during PROUD SPIRIT. Later this year we will complete classified and unclassified reports of the exercise.

B. Exercise PETITE SPIRIT

PETITE SPIRIT, a one-day exercise conducted prior to PROUD SPIRIT, provided the opportunity for senior civilian and military officials to discuss some of the issues DoD would have to consider during a period of international tensions possibly leading to war. The exercise was designed to:

-- portray the variety and complexity of the decisions that must be made during mobilization, stressing the importance of anticipating these decisions in our peacetime mobilization planning;

-- create an appreciation for the decision processes and the problems in managing mobilization;

-- create an awareness of the opportunity presented by a period of political warning to mitigate capability shortfalls and to de-escalate a crisis; and

-- reinforce our commitment to better mobilization planning.

Both exercises were invaluable to our efforts to assess and improve mobilization planning. Successful mobilization relies heavily on effective and sound mobilization plans to provide the "road map" of how and where to go. The best way to evaluate the plans, short of actual execution, is to exercise them in a simulated crisis environment. Only when these plans are exercised simultaneously can it be determined if they provide the basis for smooth teamwork among DoD organizations.

VI. MOBILIZATION TRAINING BASE

A. Improved Army Mobilization Plans

As a result of the mobilization exercise NIFTY NUGGET, Army mobilization planning for expansion of the training base has been improved through the formation of a Mobilization Planning Group. This group is responsible for improving mobilization plans for the Army's training base, including analysis to determine constraints on five areas of planning for mobilization of the training base: trainees, trainers, training support, supplies and equipment, and facilities. All five areas are being examined in detail by the group to ensure that an adequate training base exists during mobilization. For example, a recent analysis provided detailed information on training base expansion, including equipment and range requirements, in the event of emergency mobilization. Results show that training base capabilities are constrained primarily by insufficient facilities and equipment.

B. Actions to Improve Army Capability

We have several Army funding initiatives planned for the FY 1982 Defense budget to alleviate identified equipment and facility constraints. These initiatives call for expenditures to refurbish M-14 rifles for use by trainees, to purchase and stockpile essential individual clothing and equipment, to design and survey training installations in preparation for emergency construction upon mobilization, and to employ additional training employees in peacetime for development of mobilization instruction programs. These initiatives will enhance our ability to expand the training base for mobilization; other corrective actions will be taken as the results of our analyses become available. In the interim, we are continuing to refine our analytic process, as basic data, such as reserve force availability, become better known.

C. Resources

To provide the additional improvements in the Army's capability to expand its training base during mobilization, I have included the funds shown in Table 14-2 in this year's budget and program.

TABLE 14-2

Funds Programmed to Improve Army Mobilization
Training Base Capacity
($ Millions)

	FY 81	FY 82	FY 83	FY 84	FY 85	FY 86	Total FY 82-86
Army Training Base Expansion	0	61.1	17.1	16.1	26.8	27.5	148.6

VII. CONCLUSION

During the past year, we have made significant improvements in our capability to mobilize rapidly. I am encouraged by the progress we have made, but much remains to be accomplished. We will refine our programs during the coming year, as the results of the Fall mobilization exercises become clearer.

CHAPTER 15

MANAGEMENT

I. INTRODUCTION

Improved management has been, and continues to be, a major tool within the Department of Defense for providing increased military capability and effectiveness. During the past four years, we have introduced a number of organizational changes designed to make the Department more manageable and responsive to policy direction, and to ensure that the implementation of policy is adequately supervised. Our progress to date confirms that these reforms have substantially improved performance, have strengthened organizational relationships and procedures, and have increased departmental responsiveness to national security objectives.

This Administration has systematically structured departmental management reform around the following objectives:

-- to increase responsiveness to national security objectives and to policy direction from the President and the Secretary of Defense;

-- to ensure adequate supervision of policy implementation;

-- to improve direction and control of combat forces;

-- to improve resource management systems and processes; and

-- to increase responsiveness to changing conditions and new requirements.

In approaching these objectives of management innovation, we have tried to:

-- increase top-level management attention to policy development, resource management, and program evaluation matters;

-- consolidate functions into closely related clusters to ensure that all defense issues are systematically treated in relationship to one another;

-- separate those staff elements that are consumers or users of a resource from those elements that develop or acquire resources;

-- encourage the full consideration of and decision among divergent views at all levels in the process of adopting a policy, while insisting on whole-hearted cooperation and support by the entire organization in policy execution; and

-- elevate within the organization issue areas of special interest to provide a clearer top management focus (e.g., NATO affairs).

During the past year, our efforts in management have been directed both towards new initiatives and towards the continued refinement of measures undertaken during the early stages of the Administration. Specific DoD management actions this year have primarily focused on: (1) continuing improvements in the organization, structure, and functions of the Department; (2) revising the planning, programming, and budgeting system; (3) improving command, control, and communications (C^3) of combat forces; (4) continuing implementation of Civil Service Reform; (5) automated data processing (ADP) management; (6) health care; (7) energy program management; (8) DoD regulatory improvement activities; (9) the American Forces Radio and TV management structure; and (10) various cost reduction actions.

II. ORGANIZATIONAL REALIGNMENTS 1977-1980

A. Major Reorganizations

Previous administrative and management initiatives, begun in 1977, have resulted in a reduction of the number of offices reporting to the Secretary of Defense from 14 to 9. Concurrently with this consolidation, total departmental personnel were reduced by more than 20 percent. The major features of this realignment included:

-- Reduction in the size of the Office of the Secretary of Defense (OSD) from 2,065 to 1,519 personnel spaces. In parallel with these organizational realignments, I directed a 20-25 percent reduction in the headquarters' staffs of the Military Departments.

-- Elimination of one Deputy Secretary of Defense position and five Assistant Secretary positions (two from OSD and one from each of the Military Departments), and subordination of most of the Defense Agencies to the direction of a specific Under or Assistant Secretary. These realignments both streamlined OSD activities and clarified the distribution of executive responsibilities and lines of authority within the Department.

-- The offices of the Assistant Secretary of Defense (Intelligence) and the Director of Telecommunications, Command and Control Systems were merged into a new office of the Assistant Secretary of Defense for Command, Control, Communications, and Intelligence [ASD(C^3I)] in recognition of the closely related technologies and operational requirements of these functions. This reorganization was based on the premise that a natural affinity exists among these programs and that a high degree of synergism would be achievable through integrated program management. This restructuring has resulted in more efficient management, improved force effectiveness, and reduced program costs.

-- Establishment of the Office of the Under Secretary of Defense for Policy [USD(P)] as the Secretary's principal advisor for politico-military affairs, arms limitation negotiations, and review of contingency planning and policy issues. Further, the position of Deputy Under Secretary of Defense for Policy Review [DUSD(PR)] was created to monitor and develop policy for DoD command, control, communications, and intelligence (C^3I), security, and outer space, to develop priorities for defense intelligence, and to establish guidelines for the development of all Defense C^3I requirements. The focus on policy, requirements, and

priorities has provided an effective and necessary counterpart to the program focus of the ASD (C^3I), thereby ensuring that full consideration is given to the needs of product users.

-- Establishment of the Office of the Under Secretary of Defense for Research and Engineering [USD(R&E)] as the Secretary's principal advisor for all research and engineering matters, including major weapon systems acquisition and related procurement policy and C^3I resource management. As part of this realignment, the position of the Assistant Secretary of Defense, Installations and Logistics [ASD(I&L)] was abolished and its functions distributed between the office of the USD(R&E) and the expanded post of the Assistant Secretary of Defense, Manpower, Reserve Affairs, and Logistics [ASD(MRA&L)]. This new arrangement has improved the quality of DoD planning by integrating systems design with the development and acquisition of all major hardware programs within the Department, thus guaranteeing that procurement factors are considered at the outset of the process of designing and developing new weapon systems. Moreover, the transfer to the ASD(MRA&L) of the logistics, installations, and housing functions previously performed by the ASD(I&L) has resulted in the consolidation of authority for virtually all support functions in a single office. The current organizational arrangement not only has reduced fragmentation and duplication of effort, but has encouraged the simultaneous consideration of all support components--manpower, basing, maintenance operations, logistics, and training--in any decisions affecting support functions.

-- Upgrading the position of Director, Planning and Evaluation, to that of Assistant Secretary of Defense, Program Analysis and Evaluation [ASD(PA&E)]. This initiative has created a stronger, more visible programming and analytical capability, which has directly enhanced the efficiency and effectiveness with which the Department manages its extensive resources.

B. Organizational Changes As a Result of the President's Reorganization Project

In addition to these specific realignments within OSD, three organizational studies of the entire Department were undertaken during 1978 and 1979 as part of the President's Reorganization Project.

After careful consideration of the study findings, it was determined that the basic statutory roles, missions, and organizational structure of the Department should remain unchanged. A number of proposals that offered promise of improving departmental efficiency and effectiveness, however, have been adopted:

-- To improve the integration of policy and planning functions with national security objectives, the office of the Deputy Under Secretary of Defense for Policy Planning [DUSD(PP)] was established under the USD(P). This arrangement imposes the same degree of rigor and discipline on the planning process as exists in the programming and budgeting dimensions of the PPBS. One major innovation of this office is the review of military contingency planning through a document known as Policy Guidance for Contingency Planning.

-- Departmental mobilization and deployment planning functions have been strengthened to improve wartime responsiveness. The office of the ASD(MRA&L) was restructured to provide high-level coordination and direction of mobilization and deployment activities. A Joint Deployment Agency was established under the CINC, U.S. Readiness Command, to improve deployment planning and operations.

-- Readiness reporting has been improved to include higher standards, so that readiness data furnish detailed and accurate information on unit status that can be used as a peacetime planning and management tool to identify problem areas, particularly resource deficiencies.

-- A new Command, Control, and Communications (C^3) Systems Directorate was established in the Organization of the Joint Chiefs of Staff to provide a centralized operational and doctrinal focus for the development of joint-Service C^3 plans and requirements.

-- A number of measures have been initiated to enhance the capability for joint military planning in crisis situations. Foremost among these was the establishment of the Crisis Planning and Assessment Group within the JCS. In addition, internal JCS staffing procedures have been modified to improve the quality and effectiveness of JCS support to the National Command Authorities. Lastly, arrangements have been instituted for a biennial review of the Unified Command Plan, and the role of the CINCs in the joint planning process has been expanded.

Over the past four years, we have continued to refine management innovations introduced since 1977. Program performance to date indicates that the Department's effectiveness has been materially improved. Nevertheless, continuing organization and management adjustments will be required to respond to changing circumstances and new requirements.

III. IMPROVING THE PLANNING, PROGRAMMING, AND BUDGETING SYSTEM (PPBS)

A. Major Revisions

In addition to these organizational realignments, an extensive study of the entire planning, programming, and budgeting process was initiated. After prolonged discussions, both inside and outside the Department of Defense, several revisions in the system were implemented, incorporating the following features:

-- We provided for the early and continuous involvement of the President and Secretary of Defense in the planning, programming, and budgeting system, particularly in those deliberations related to funding levels and program prioritization.

-- The Defense Resources Board (DRB) was established under the chairmanship of the Deputy Secretary of Defense to integrate the Department's programming and budgeting activities and to advise the Secretary of Defense on the most efficient allocation of resources and other related matters. The DRB has a major role in the preparation of the budget submission, directing and supervising the OSD review of the Service Program Objectives Memoranda (POMs) and budget requests.

-- The Chairman of the Joint Chiefs of Staff and the Under Secretary for Policy were designated as members of the Defense Systems Acquisition Review Council (DSARC) and the DRB. The Chairman's role is to introduce joint military advice into the systems acquisition and resource allocation processes. The Under Secretary for Policy's role is to ensure that weapons acquisition decisions are consistent with our national political and military strategy.

-- We expanded the role of the JCS and the Military Departments in all phases of the PPBS. Additionally, increased emphasis has been placed on the role of the JCS and the CINCs of the Unified and Specified Commands in determining requirements and allocating resources. A modified joint planning process permits improved participation by the JCS and the CINCs in recommending the military strategy and force structure needed to achieve national security objectives.

-- We developed the Consolidated Guidance, which addresses fundamental defense policy and strategy issues, and provides specific planning guidelines for the initiation and development of plans and programs. The first of an annual series of Defense Policy Guidance documents was incorporated into the FY 1981-85 Consolidated Guidance and now serves as an authoritative reference for force planning and resource allocation decisions.

B. Weapon Systems Acquisition Within PPBS

During the past year, in conjunction with the Department of State and the Arms Control and Disarmament Agency (ACDA), we have improved the process of considering the foreign policy and arms control implications of weapons acquisition.

We have established a committee, chaired by the USD(P), consisting of representatives from OSD, OJCS, the military Services, the State Department, ACDA, and the Executive Office of the President. The committee functions in parallel with the DSARC process and, for those systems approved for review, generally meets prior to the corresponding DSARC meetings to discuss the arms control, foreign policy, and defense implications of the proposed systems. In some cases, interagency discussion will be appropriate as early as DSARC Milestone "0" (approval of the Mission Element Need Statement and authorization to proceed into concept exploration). In all cases, however, discussion of foreign policy and arms control considerations for systems approved for review should occur no later than DSARC Milestone II (selection of alternatives and authorization to proceed into full-scale development).

This process will afford the Secretary of Defense an opportunity to consider, for selected weapon systems and at the earliest feasible time in the acquisition cycle, both the DSARC recommendation and the USD(P) reports on arms control, foreign policy, and defense policy implications when formulating a decision on the system in question.

Further improvement in the weapons acquisition process has stemmed from an increased emphasis on considering the reliability and maintainability of weapon systems. My past Defense Reports have noted that unreliable and hard-to-support designs contributed to less-than-desirable weapon system performance in the field. Reliability and maintainability affect not only the readiness of our

systems, but also their mission capability and sustainability. We have issued a comprehensive DoD policy on managing the reliability and maintainability effort during a weapon system acquisition program. This policy will focus our efforts on the multiple effects of system reliability and maintainability, and on the efficient use of design and engineering in order to achieve acceptable levels of performance.

IV. IMPROVED DIRECTION AND CONTROL OF COMBAT FORCES

In 1978, at the request of the USD(R&E), a Defense Science Board Task Force was convened to review the process by which the Department specifies, plans, and acquires command and control systems. As a result of the Task Force's recommendations, several organizational changes have been instituted to improve U.S. command and control capability.

-- The newly created C^3 Systems Directorate within the OJCS has provided timely joint military advice directly to OSD on C^3 requirements, programs, and budgets. Prior to the establishment of the C^3 Systems Directorate, it was difficult to get meaningful joint military advice during the fast-moving phases of the PPBS. In particular, the C^3 Systems Directorate has been very useful in fulfilling this advisory function and in advocating joint programs.

-- The resources to support the C^3 initiatives of the CINCs of the Unified and Specified Commands have been consolidated in the Defense Communications Agency budget, where they can be focused more rapidly to meet the CINCs' requirements. The C^3 Systems Directorate will thus be in a better posture to recommend to OSD the CINCs' requirements and to improve the linkage between the operations community and the technical support organizations.

-- Reorganization of the Office of the ASD(C^3I) has been completed, and each of the four new offices within OASD(C^3I) is functioning smoothly under the direction of a Deputy Assistant Secretary of Defense. The ASD(C^3I) also has created a new directorate with responsibility for the mission areas of strategic communications, command, control, and intelligence. The Tactical Intelligence Systems Directorate has resource oversight responsibility for the newly established Defense Reconnaissance Support Program (DRSP). The DRSP consolidates the Military Space Program's tactical intelligence, targeting, ocean and battlefield surveillance assets, and certain imagery dissemination assets. The single overview provides better application of space intelligence resources in support of operational commanders.

V. IMPLEMENTATION OF CIVIL SERVICE REFORM

The Civil Service Reform Act of 1978 constitutes the most sweeping revision of civil service laws in almost 100 years. Forty percent of all civil service employees work in DoD, and we have made considerable progress in implementing the new personnel programs required under the 1978 Act. The establishment of the Senior Executive Service (SES), the development of merit pay plans for supervisors and managers, the initiation of a new program of collective bargaining, and the development of new systems of employee appraisal are all well under way in the Department. A few of these new programs became effective upon enactment of the Reform Act, and most are being phased-in over a period of years, but all require a considerable investment of management time and effort.

The SES conversion in DoD had an excellent start--almost all eligible executives elected to join the new service. New performance appraisal systems have been established for senior executives, emphasizing goal-setting and keying financial rewards to goal accomplishments. We have concluded the first performance cycle and have awarded bonuses to approximately 20 percent of our senior executives. The primary problems that have been encountered in initiating the SES program are the compression of the pay scale resulting from the Congressional cap on executive compensation (which means that virtually all members of the SES receive the same salary, thereby removing any monetary incentive to assume greater responsibility), and the sharp statutory limitation on an agency's authority to pay bonuses to its highly successful employees (which reduces the effectiveness of these bonuses in motivating and rewarding our career executives).

Merit pay plans for supervisors and managers in grades GS 13-15 have been developed and approved by the Office of Personnel Management (OPM), and implementation began on October 1, 1980. The first merit pay adjustments will occur on October 1, 1981, and, as in the SES, pay adjustments will be based solely upon performance as measured against goals established at the beginning of the performance rating period. In implementing this portion of the Civil Service Reform Act, the Department is on schedule and fully expects to meet the legislative deadline of October 1981 for the first merit pay adjustments.

We also have begun to design a performance appraisal system for employees in grades GS-12 and below. This system should be fully in place by October 1981. In addition, all DoD components have developed, or are in the process of developing, equal employment opportunity recruitment programs to correct identified under-representations of women and members of minority groups.

VI. AUTOMATED DATA PROCESSING (ADP) MANAGEMENT

A. Improving the Readiness of Combat Units

As a consequence of the 1978 Exercise NIFTY NUGGET, a study was directed by the ASD(MRA&L) to evaluate the readiness of combat units that depend upon automated general information for their overall effectiveness. Specific information needs include the supply and maintenance function as well as manpower, medical, and financial accounting.

The results of the study have identified several deficiencies in accomplishing these support functions. Accordingly, the Services were directed to upgrade their automated functional information systems in specific areas, to institute Continuity of Operation Plans (COOPs), and to revise ADP master plans. In addition, the study has resulted in the revision of several Service-generated required operational capability statements for new systems and contingency plans, and has increased the priority and scope of several programs.

B. Career Management Program for ADP Personnel

DoD has developed, and is now implementing, a Department-wide program to strengthen career management of nearly 40,000 civilian ADP personnel. DoD ADP now costs about $3 billion annually. The Career Management Program recognizes that the effective use of ADP depends at least as much on the competence of the ADP work

force as it does on the software quality and hardware capacity of the ADP equipment. A major component of the Career Management Program, therefore, is an initiative to register all ADP personnel in a centrally automated file, a measure that will facilitate a wide range of career management functions, including the identification of training requirements and competition for promotion opportunities. Moreover, in light of the extensive DoD reliance on ADP in supporting mission requirements, this new file also will be an invaluable tool in mobilization readiness planning.

VII. HEALTH CARE

Health care management initiatives undertaken during the past year include improvements in the DoD wartime medical posture and further development of the Defense Enrollment/Eligibility Reporting System (DEERS).

A. Wartime Medical Posture

The development and expansion of the Civilian-Military Contingency Hospital System (CMCHS), which will link participating civilian hospitals and health care providers with a designated military hospital, is explained in detail in Section II, Chapter 13.

B. Defense Enrollment/Eligibility Reporting System (DEERS)

DEERS is a major effort currently being developed to improve the management of DoD health resources and to help reduce fraud and misuse of Uniformed Services benefits. Through the compilation of demographic and sociological data on the beneficiary population, DEERS will provide a mechanism for verifying eligibility for benefits, both in the direct care system and CHAMPUS, and it will assist fiscal intermediaries in the more efficient and accurate processing of claims. Phased implementation of DEERS began in 1980, upon the successful completion of a limited test of the program. Full eligibility and enrollment operations in the CONUS will commence for sponsors (active-duty and retired personnel) in January 1981 and for dependents by March 1982. Worldwide implementation should be completed by the end of FY 1983. As the data base expands to include a substantial portion of the beneficiary population, the Department will begin to realize great benefits in planning and operational management of health care and other functional areas, such as commissaries and exchanges. A new ID card issue system, which is being tied to the DEERS program, should be fully implemented by the end of FY 1984.

VIII. ENERGY MANAGEMENT

Since the first Defense Energy Management Plan was published in 1979, we have made significant progress in improving the management of energy resources. The Department's efforts have been directed towards achieving greater energy self-sufficiency, reducing energy costs, and ensuring the readiness of our Armed Forces. The most noteworthy successes fall into three broad, but interrelated areas: energy program management, energy supply assurance, and energy conservation.

A. In Energy Program Management, we have:

-- issued energy goals and objectives to the year 2000;

-- undertaken a thorough, short-term energy information improvement program, as well as initiating a longer-term effort to enhance the worldwide defense energy information system with data base management capabilities;

-- completed the second annual energy management review of the energy programs of the Military Departments and the Defense Logistics Agency;

-- completed the budget review for fiscal years 1981-1985 and successfully obtained additional funding for energy programs;

-- developed the ten-year DoD Building Energy Plan;

-- revitalized the cooperative energy technology program with the Department of Energy (DoE), through implementation of the recommendations of a joint workforce acting under the aegis of a top level DoD-DoE steering group; and

-- implemented Title I "Synthetic Fuels" of the Energy Security Act to provide DoD synthetic fuels in the 1985-1990 time frame.

B. In Energy Supply Assurance, we have:

-- developed implementing regulations under the Defense Production Act, in cooperation with DoE, to ensure sufficient DoD petroleum supplies during periods of supply disruption;

-- completed the Phase I development of the Defense Energy Emergency Management System, which is designed to ensure the availability of fuels to the Department of Defense during periods of energy supply disruptions;

-- initiated actions to obtain secure domestic sources of petroleum from Outer Continental Shelf royalty oil and Naval Petroleum Reserve protection;

-- streamlined defense petroleum contracting procedures;

-- initiated quarterly discussions on oil allocation issues with the Deputy Administrator of the Energy Regulatory Administration;

-- published new policies for more effective management of bulk petroleum products, storage, and distribution facilities;

-- undertaken an aggressive gasohol utilization program; and

-- rebuilt DoD petroleum inventories.

C. In Energy Conservation, we have:

-- reduced energy consumption in DoD installations by six percent and in the administrative use of motor gasoline by 12 percent for the 12-month period ending March 31, 1980, as compared to the previous 12-month period;

-- reduced energy consumption in DoD installations by six percent and in the administrative use of motor gasoline by 12 percent for the 12-month period ending March 31, 1980, as compared to the previous 12-month period;

-- reduced overall DoD energy consumption in FY 1979 by seven percent (in terms of the FY 1975 energy conservation baseline) through energy awareness and educational programs, the use of aircraft, ship, and vehicle simulators, the retrofitting of existing facilities, and better energy management practices;

-- initiated an energy incentives award program; and

-- published regulations to ensure that energy conservation is a major consideration in all major system acquisitions.

In spite of this progress, much remains to be done. Our principal objective in the forthcoming year will be to complete the supply assurance initiatives we have undertaken. We will begin in early 1981 to obtain Outer Continental Shelf crude oil, which we will exchange for military petroleum products. We plan to expand further our access to government-owned crude oil, as we gain experience and as more crude oil becomes available. In 1981, we will conduct a politico-military simulation to test implementation of the Defense Production Act. We also will continue to seek additional improvements in our contracting procedures. In addition, we intend to focus significant efforts in the next year on implementing the new Defense Energy Information System, which will improve the timeliness, accuracy, and usefulness of DoD energy data for evaluation and analysis.

IX. DoD REGULATORY IMPROVEMENT ACTIVITIES

DoD has implemented its plan for "Improving Government Regulations" under Executive Order 12044 of November 1978. As required by that Presidential order, the first consolidated semi-annual agenda of significant regulations was compiled and published in November of 1978. The Department's plan centralized all regulatory reform functions under one office, permitting greater scrutiny of all significant regulations. This review and consolidation of regulatory reform efforts heightened the Department's awareness of the purposes and consequences of the regulatory process and promoted greater interaction among the various components of DoD. The Department's regulatory reform program had a significant impact in the following specific areas:

-- a complete review of all DoD Directives was initiated, to determine the need, accuracy, applicability, and readability of existing regulations;

-- internal regulations and directives were scrutinized at all levels of the Department, including senior-level review and policy oversight;

-- sunset reform was initiated, with specific review and termination dates established for new/revised regulations;

-- redundancy in regulations has been reduced and joint-Service coordination of directives has been improved through the application of more rigorous review procedures and enhanced cooperation among the Services and OSD;

-- administrative controls have been imposed on all information requests to require proof of need and value; and

-- educational programs were initiated to increase the simplicity and clarity with which regulations are written.

The Defense Department has met the goals of the Executive Order, both in spirit and content, and, through a revised DoD Directive soon to be implemented, we intend to continue the program already initiated.

X. AMERICAN FORCES RADIO AND TELEVISION MANAGEMENT

During the past year, we also have strengthened the American Forces Radio and Television (AFRT) management structure. AFRT is a worldwide internal information and entertainment radio and television network for overseas DoD personnel. It consists of approximately 800 broadcast outlets, equipment and facilities valued at $60 million, and a work force of 1,400. O&M costs exceed $55 million per year, not including more than $100 million worth of programming donated annually by the commercial broadcast industry and its unions.

Under the new management structure, the Assistant Secretary of Defense, Public Affairs [ASD(PA)] will develop policy, will provide policy guidance, and will exercise overall resource management control of AFRT broadcast operations throughout the Department. The military Services will continue to operate radio and television outlets in designated geographic areas, but will consolidate in a single staff, responsive to ASD (PA) guidance, all management and operating control of broadcast activities within their respective departments.

We anticipate that this new structure will result in substantial long-term savings through the implementation of uniform manning standards, equipment standardization, streamlined policy and program guidance mechanisms, and improved resource management planning and control.

XI. COST REDUCTION ACTIONS

As in past years, we have placed considerable emphasis on management measures that offer promise of providing savings and maximizing our return on dollars spent. The following are representative of some of our current cost reduction initiatives.

A. Design Standardization Management

A new DoD Instruction requires the implementation of the parts control program in all contracts awarded for the design, development, production, and modification of major weapon systems and for those end items of equipment requiring logistics support, as well as for any procurement involving potential life-cycle cost savings. The program is designed to promote the re-use of existing parts of proven performance to avoid the needless purchases of spare parts. It is anticipated that, during FY 1981, some 540 (including 220 new) Defense contracts will require parts control reviews. Approximately 30,000 non-standard generic part types and 8,500 specification and source-control drawings will be reviewed with the expectation that about 12,000 generic part types will be recommended for replacement by existing standard parts. Cumulative cost savings should be approximately $96 million in FY 1981.

B. Civilian Pay Reform

The proposed Federal Employees Compensation Reform Act, which will ensure that compensation levels for federal government civilian employees (both white and blue collar) do not exceed those for comparable jobs in the private sector, will produce substantial DoD savings. Two major provisions of this bill would require the consideration of fringe benefits in determining comparable compensation levels and would reform pay-setting practices for blue collar workers; these provisions alone are expected to save DoD over $1.5 billion per year. In the interim, the FY 1981 pay cap of a 9.1 percent pay increase should produce savings of $220 million for blue collar and $1.1 billion for white collar workers, compared to the cost of uncapped raises.

C. Contracting Out

The Department of Defense has been a government leader in reducing costs and manpower through economical contracting out of commerical and industrial functions. We currently are contracting for services that would otherwise require over 146,000 federal civilian and military employees. By the end of FY 1981, we plan to complete cost comparison studies for 9,000 civilian and military jobs to determine whether it is more economical to convert to contract operations.

D. Stockage Policy Analysis

In its review of the FY 1980 Defense Budget, the Office of Management and Budget (OMB) identified several areas where management practices could be improved in order to reduce costs. In response to this review, a Secondary Item Stockage Policy Analysis Working Group was established to develop appropriate recommendations for improving selected supply management policies within the wholesale supply system. The working group, in conjunction with OMB staff, has completed an extensive report specifying those particular areas in which improvements are, in fact, possible. A greatly improved Defense supply system should result from implementation of these new, improved policies.

XII. CONCLUSION

The record of performance over the past four-year period demonstrates that revisions in the Department's structure have produced more efficient and more economical operations. Continuing organizational and management modifications will be required, however, to respond to evolving conditions and new requirements. For that reason, we will continue to explore new initiatives that offer the potential for improvements in DoD management. In evaluating our future defense needs, our management priorities will continue to focus on the twin objectives of reducing non-essential defense costs and promoting greater efficiency in the use of existing resources.

CHAPTER 16

THE DEFENSE BUDGET

I. SUMMARY

The aggregate funding required to support the Defense program is presented below. Section II places the funding data in historical context with charts showing Defense budget trends from FY 1964 to FY 1982. Price level assumptions and the out-year projections arising from those assumptions and program plans are presented in Sections III and IV. Real growth rates are tabled in Section V, and Section VI is devoted to an analysis of the FY 1980, FY 1981, and FY 1982 budgets by program area. Care is taken throughout the chapter to show data adjusted for the impacts of inflation, so that real purchasing power can be compared across years. Sections VII and VIII are devoted to developments that are expected to have major impacts on the Defense budget: fuel inflation and the new requirements for authorization of operation and maintenance. The final section portrays Defense expenditures in the context of the national economy.

TABLE 16-1

Department of Defense - Military Functions
($ Billions)

Current Year Dollars	FY 1980	FY 1981	FY 1982
Budget Authority (BA)	142.6	170.3	195.7
Total Obligational Authority (TOA)	142.2	171.2	196.4
Outlays	132.8	157.6	180.0
Constant FY 1982 Dollars			
Budget Authority (BA)	173.4	185.5	195.7
Total Obligational Authority (TOA)	172.9	186.5	196.4
Outlays	162.5	172.5	180.0

Budget authority (BA) represents the legal authority to incur obligations, that is, the authority to hire personnel or enter into contracts involving expenditures of funds from the Treasury within a specified period of time. In most cases, budget authority is provided by appropriation, but there are some exceptions. For military functions, the exceptions are technical and relatively minor, and budget authority is virtually identical to the amount appropriated.

Total obligational authority (TOA) represents the value of the direct Defense program for each fiscal year, regardless of the method of financing (which could include balances available from prior years or resources available from sale of items from inventory). Budget authority, on the other hand, represents the value of annual new authority to incur obligations.

Outlays represent expenditures or net checks issued. About three-quarters of FY 1982 outlays will result from FY 1982 budget authority; the remainder will come from budget authority provided in FY 1981 and earlier years.

II. DEFENSE BUDGET TRENDS: FY 1964 TO FY 1982

CHART 16-1

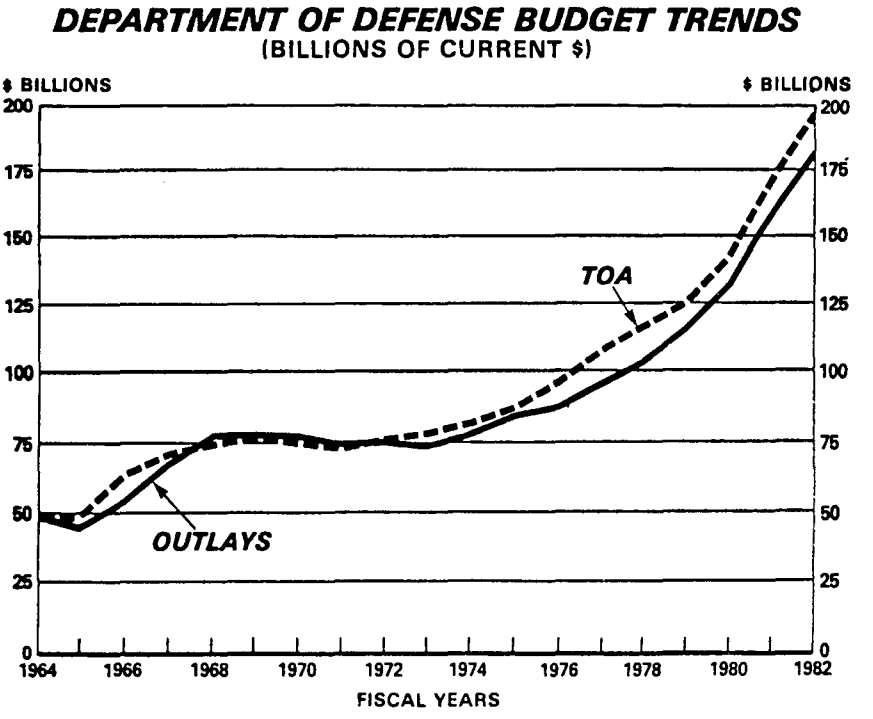
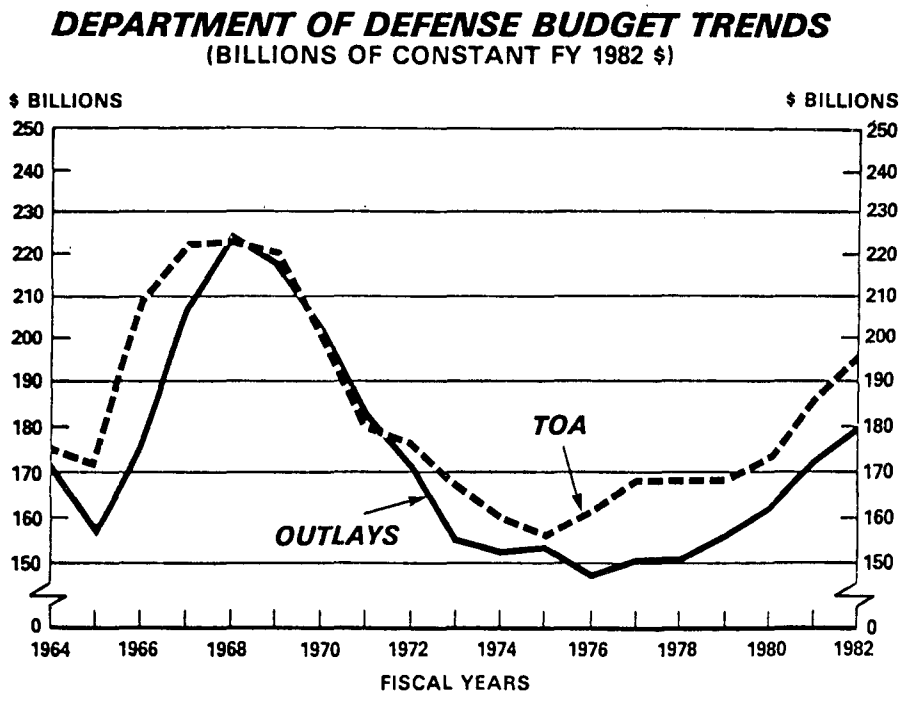


CHART 16-2



III. PRICE LEVEL ASSUMPTIONS

Planning for future expenditure levels requires estimates of the future course of inflation. DoD prepares those estimates on the basis of guidance furnished by the Office of Management and Budget (OMB). The OMB guidance establishes aggregate inflation rates for the purchase of goods and services, a Consumer Price Index (CPI) expected inflation rate for use in the retired pay accounts, and planned comparability pay increases for the military and civilian pay accounts. DoD calculates the TOA rates and the composite outlay rates shown in Table 16-2 on the basis of the OMB guidance and the expenditure profiles characteristic of each account (e.g., Missile Procurement, Air Force).

TABLE 16-2

Price and Pay Raise Percentage Increases

	FY 80-FY 81	FY 81-FY 82	FY 82-FY 83	FY 83-FY 84	FY 84-FY 85	FY 85-FY 86
Military Pay	15.9	9.3	9.0	8.5	8.2	7.6
Other Military Personnel Expenses	24.2	21.7	7.5	7.0	6.3	5.7
TOTAL, Military Personnel	16.7	11.2	8.7	8.2	7.9	3.7
Civil Service	9.1	5.5	9.0	8.5	8.0	7.5
Wage Board	8.3	6.9	7.0	7.7	7.2	7.3
Foreign National Direct Hire	10.0	8.0	8.0	8.0	8.0	8.0
Foreign National Indirect Hire	6.0	6.0	6.0	6.0	6.0	6.0
TOTAL, Civilian Payroll	8.7	6.0	8.2	8.1	7.7	7.4
Military Retired Pay	12.6	9.2	14.4	7.7	6.6	5.6
Pay Composite	13.1	9.2	9.6	8.1	7.5	7.0
Industry Purchases:						
Outlays:						
Fuel	23.3	9.7	8.6	8.0	7.2	6.4
Non-Fuel	8.8	9.7	8.6	8.0	7.2	6.4
TOA:						
Fuel	23.3	9.7	8.6	8.0	7.2	6.4
Non-Fuel	8.8	8.7	7.9	7.3	6.7	6.4
Composite Total:						
Outlays	11.8	9.5	9.1	8.0	7.3	6.6
TOA	11.7	8.9	8.6	7.6	7.0	6.6

IV. OUT-YEAR PROJECTIONS

The Defense budget projections in Table 16-3 are based on the purchase inflation and pay raise assumptions outlined in Section III.

TABLE 16-3

DoD Military Functions
(Billions of Current Year Dollars)

	TOA	Outlays
FY 1981	171.2	157.6
FY 1982	196.4	180.0
FY 1983	224.0	205.3
FY 1984	253.1	232.3
FY 1985	284.3	261.8
FY 1986	318.3	293.3

V. REAL GROWTH

By real growth we mean the change (positive or negative) after the effects of inflation are removed. Adjustments for inflation are made using indices constructed from actual or projected rates such as those in Table 16-2. Table 16-4 presents the year-to-year real growth percentages for the period FY 1965 to FY 1986.

TABLE 16-4
Defense Real Growth Percentages

	TOA	Outlays		TOA	Outlays
1965	-3.0	-8.5	1976	3.6	-3.7
1966	22.2	11.4	1977	4.6	1.8
1967	6.4	17.8	1978	- .2	.4
1968	.2	8.9	1979	- .4	3.8
1969	-1.2	-2.8	1980	2.9	3.8
1970	-9.2	-7.9	1981	7.8	6.1
1971	-9.9	-9.4	1982	5.3	4.4
1972	-2.8	-6.1	1983	5.0	4.6
1973	-4.5	-8.9	1984	5.0	4.7
1974	-4.4	-2.1	1985	5.0	5.0
1975	-2.5	.3	1986	5.0	5.1

VI. ANALYSIS BY PROGRAM AREA

The budget is broken down by the major force programs in Tables 16-5 and 16-6, and by appropriation category in Tables 16-7 and 16-8. The second table of each pair (16-6 and 16-8) is in constant FY 1982 dollars. (Totals in the tables may not add because of rounding.)

TABLE 16-5

DoD Budget Summary by Major Force Program
(TOA in Billions of Current Year Dollars)

Program	Total Obligational Authority FY 1980	FY 1981	FY 1982
Strategic Forces	11.1	12.6	15.0
General Purpose Forces	52.2	65.4	73.5
Intelligence & Communications	9.1	10.9	13.0
Airlift & Sealift	2.1	2.8	3.5
Guard & Reserve Forces	7.9	9.4	10.3
Research & Development	11.7	13.8	17.3
Central Supply & Maintenance	15.6	17.5	19.5
Training, Medical, Other General Personnel Activities	29.2	34.6	39.2
Administration & Associated Activities	2.5	3.3	4.0
Support of Other Nations [Excluding Military Assistance Programs (MAP)]	.6	1.0	1.0
TOTAL	142.2	171.2	196.4

TABLE 16-6

DoD Budget Summary by Major Force Program
(TOA in Billions of Constant FY 1982 Dollars)

Program	Total Obligational Authority FY 1980	FY 1981	FY 1982
Strategic Forces	13.4	13.7	15.0
General Purpose Forces	63.3	71.1	73.5
Intelligence & Communications	11.0	11.9	13.0
Airlift & Sealift	2.6	3.1	3.5
Guard & Reserve Forces	9.8	10.3	10.3
Research & Development	14.2	15.0	17.3
Central Supply & Maintenance	18.8	19.0	19.5
Training, Medical, Other General Personnel Activities	36.2	37.9	39.2
Administration & Associated Activities	3.0	3.6	4.0
Support of Other Nations (Excluding MAP)	.7	1.0	1.0
TOTAL	172.9	186.5	196.4

TABLE 16-7

DoD Budget Summary by Appropriation Category
(TOA in Billions of Current Year Dollars)

Appropriation Title	Total Obligational Authority FY 1980	FY 1981	FY 1982
Military Personnel	31.1	36.7	41.3
Retired Pay	11.9	13.8	15.6
Operation & Maintenance	46.6	54.2	62.4
Procurement	35.3	45.0	49.1
RDT&E	13.5	16.1	19.9
Military Construction	2.3	3.4	5.6
Family Housing	1.6	2.0	2.2
Revolving & Management Funds	-	.1	.3
Special Foreign Currency	-	-	-
TOTAL	142.2	171.2	196.4

TABLE 16-8

DoD Budget Summary by Appropriation Category
(TOA in Billions of Constant FY 1982 Dollars)

Appropriation Title	Total Obligational Authority FY 1980	FY 1981	FY 1982
Military Personnel	40.4	40.8	41.3
Retired Pay	14.7	15.1	15.6
Operation & Maintenance	56.0	58.6	62.4
Procurement	41.4	48.5	49.1
RDT&E	16.0	17.5	19.9
Military Construction	2.6	3.6	5.6
Family Housing	1.8	2.2	2.2
Revolving & Management Funds	-	.1	.3
Special Foreign Currency	-	-	-
TOTAL	172.9	186.5	196.4

VII. FUEL AND ENERGY IMPACTS ON THE DEFENSE BUDGET

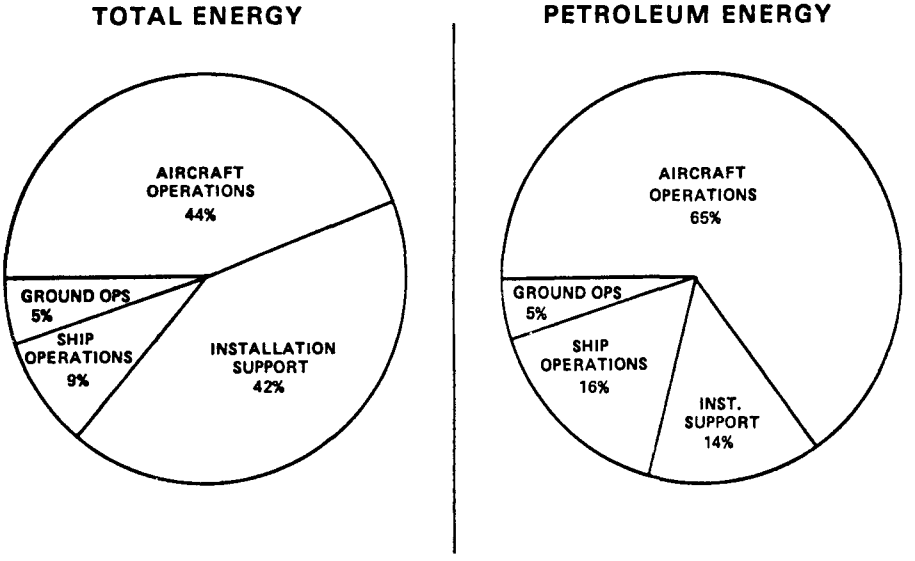
In FY 1978, fuel outlays were 3.0 percent of the Defense Budget, and they are estimated to be 6.2 percent in FY 1981 and 6.1 percent in FY 1982. The marked increase in the relative share of resources going to fuel clearly affects the budget; however, the true extent of that impact is masked in the above data because

personnel costs are included in the base and it is the non-pay purchases (the procurement of supplies, equipment, transportation, and other services) with which fuel directly competes for financing. On that basis, fuel cost, as a percentage of non-pay outlays, has shown an especially sharp increase, rising from 6.1 percent in FY 1978 to 6.8 percent in FY 1979, 10.3 percent in FY 1980, 11.0 percent in FY 1981, and an estimated 10.2 percent in FY 1982. Flexibility in execution and, especially, the ability to absorb price changes are seriously constrained when a volatile commodity commands such a relatively large share of the financial resources.

With respect to fuel, DoD differs from any other federal agency or department. While fuel was approximately seven percent of FY 1979 non-pay purchases in DoD, fuel was approximately one percent of non-pay purchases in the rest of the federal sector. Defense is the dominant consumer of fuel in the federal sector. Excluding purchases for the Strategic Petroleum Reserve, DoD purchases were approximately 97 percent of federal fuel purchases in the first half of FY 1980, 94 percent in FY 1979, 93 percent in FY 1978, and 97 percent in FY 1977. Approximately 85 percent of Defense petroleum consumption is for aircraft, ship, and ground operations--just 14 percent is used in installation support functions. Chart 16-3 portrays the distribution of both petroleum and total energy among these functional sectors.

CHART 16-3

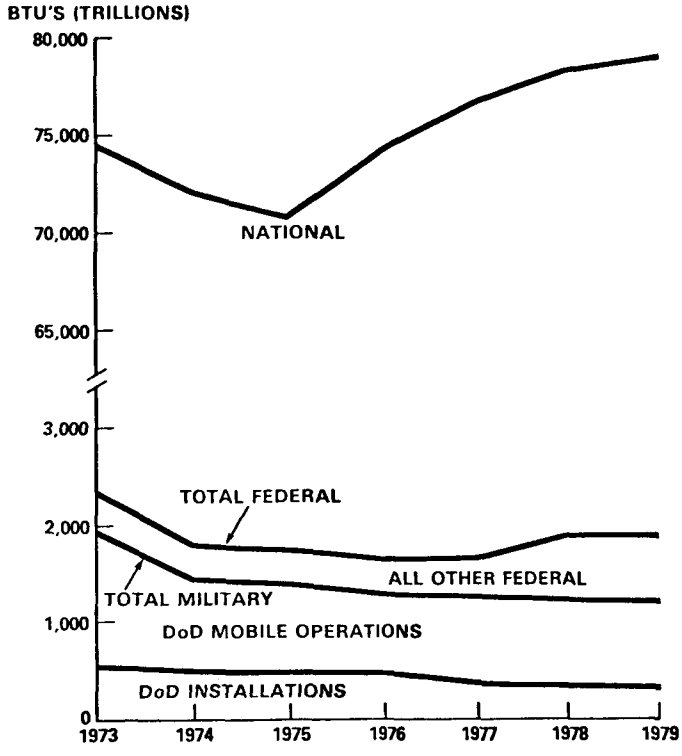
DOD WORLDWIDE ENERGY CONSUMPTION (BY OPERATION FUNCTION) FY 1980



It is clear from Chart 16-4 that Defense energy consumption has declined as a relative share of national and federal sector consumption.

CHART 16-4

COMPARISON OF MILITARY, FEDERAL AND NATIONAL ENERGY USE



Defense costs for petroleum have risen sharply over the last five years, despite a relatively successful energy conservation program. As a result, fuel price changes are large in comparison to the available financial resources, and the financing of fuel purchases is a major problem in budget execution.

Economists and Defense analysts recognize that inflation can steal Defense purchasing power and thereby damage the national security. For approximately the last eight years, we have published a series of deflators, which economists and other analysts generally use to estimate real Defense purchasing power. The impact of fuel costs on Defense is such that, this year, fuel has been added as separate "sector" in our construction of those deflators (see Table 16-2). Each increase in the fuel inflation rate causes an increase in the overall rate applicable to Defense. The elasticity (the change in the Defense deflator resulting from a change in the fuel deflator) is significant and increases with increasing fuel prices, because fuel then becomes a larger percentage of the total.

Table 16-9 demonstrates the effect of inflating fuel costs on the aggregate inflation rate for Defense and the resulting impact on the real growth percentage. The first row shows the fuel and non-fuel inflation rates, the weights used to calculate the Defense-wide aggregate, and an assumed real growth of three percent. The following rows vary the fuel inflation rate and trace the effect on the aggregate rate and real growth. The calculations assume that the added fuel costs are funded by drawing down non-fuel purchases.

TABLE 16-9

Effect of Fuel Inflation
(Rates in Percent)

Fuel		Non-Fuel			
Inflation Rate	Weight	Inflation Rate	Weight	Real Growth	Defense* Inflation Rate
9.1	.075	9.1	.445	3.0	9.05
20.0	.082	9.1	.438	2.16	9.95
30.0	.089	9.1	.431	1.26	10.92
40.0	.096	9.1	.424	.26	12.03

* Assumes a constant 9.0 inflation rate for pay with a .48 weight factor.

The effect of inflating fuel costs on our efforts to sustain a reasonable rate of real growth in Defense is clear. Not demonstrated in the table, but extremely important, is the difficulty in executing the budget when these large cost swings are not foreseen and are not funded until late in the fiscal year.

VIII. AUTHORIZATION OF OPERATION AND MAINTENANCE (O&M)

The Department of Defense FY 1981 Authorization Act provides for the authorization of Operation and Maintenance Appropriations during the congressional authorization process commencing with FY 1982. This action was generated largely by a concern in the Congress that the Operation and Maintenance Appropriations were not receiving the same consideration accorded the Procurement Appropriations in terms of overall DoD funding requirements. While the entire O&M request will be subject to authorization, major O&M areas to receive special review include aircraft flying hours, ship steaming hours, field training days for the combat arms battalions, major repair work to be performed on ships, airframe reworks, aircraft engine reworks, and vehicle overhauls.

The effectiveness of the O&M authorization action will rest largely on cooperation between the Department and the Congress during the next several years when this policy will be in its formative stage. Despite initial opposition to the authorization action (based on considerations concerning increased workload and restricted flexibility in program execution), the Department welcomes the opportunity to work closely with the Congress in effectively implementing this new policy. The Department appreciates the concern of the Congress regarding the status of our current operating forces and hopes this action effectively aids in addressing their problems and concerns. Personally, based on the effect of authorization of RDT&E, which I saw introduced in the early 1960s and have observed since, I have severe doubts about the utility of this procedure. It would invite still further micromanagement.

IX. DEFENSE AND THE AGGREGATE ECONOMY

In FY 1952, Defense expenditures dominated the Federal Budget, composing 67 percent of the total. Despite its large share of federal outlays in FY 1952, however, Defense did not dominate the economy; it represented just 12.8 percent of GNP. In FY 1982, estimates place Defense at approximately 24.3 percent of federal outlays and 5.6 percent of GNP--far from a dominant position.

Table 16-10 presents Defense outlays as percentages of various economic aggregates, such as GNP and public employment. Chart 16-5 graphically portrays the trend that is clear in the data of Table 16-10--the Nation has devoted a continually declining portion of its resources to defense. Chart 16-6 illustrates that Defense outlays have increased much more slowly than have non-Defense federal outlays.

CHART 16-5

DEPARTMENT OF DEFENSE BUDGET
AS A PERCENTAGE OF:

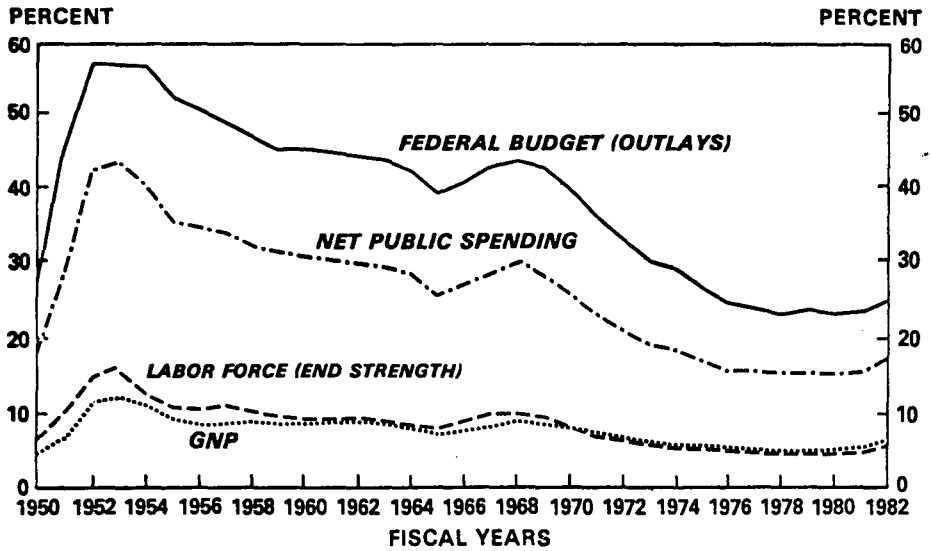


CHART 16-6

FEDERAL OUTLAYS

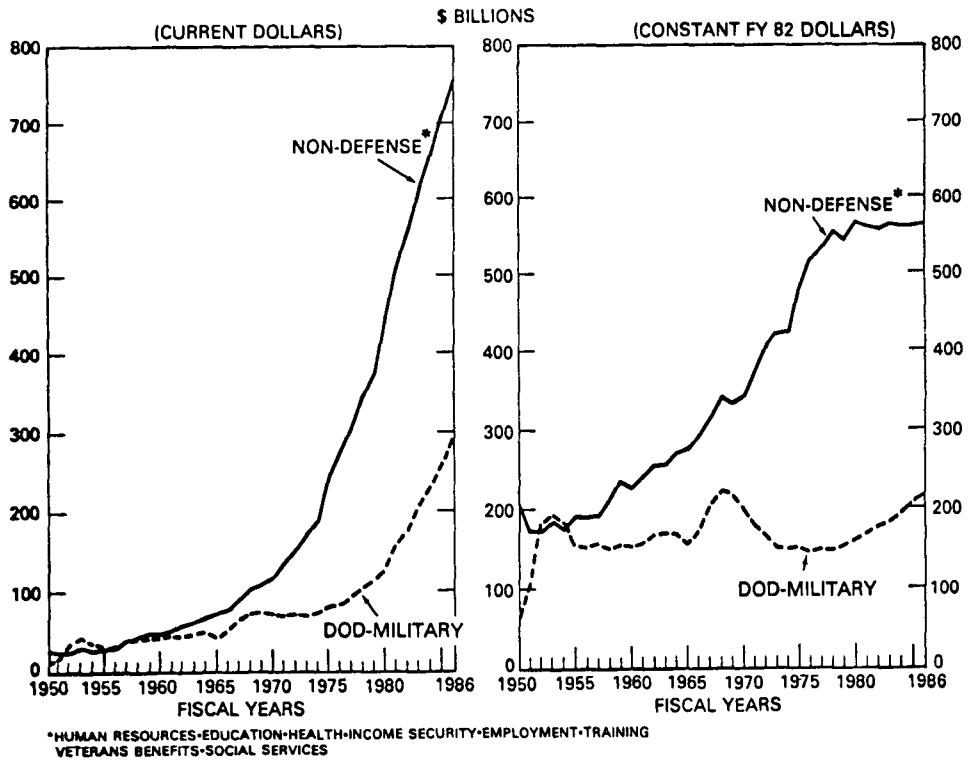


TABLE 16-10

Defense Shares of Economic and Budgetary Aggregates

	DoD as a Percentage of:			DoD as a Percentage of Public Employment		DoD as a Percentage of National Labor Force		National Income Accounts Percentage of Total Purchases		
	Federal Budget	GNP	Net Public Spending	Federal	Federal, State & Local	Direct Hire (DoD)	Including Industry	National Defense	Total Federal	State & Local
FY 64	41.7	8.0	27.8	72.1	30.6	5.2	8.2	8.1	10.6	10.1
FY 65	38.7	7.0	25.2	71.3	29.3	5.0	7.8	7.3	9.8	10.3
FY 66	40.2	7.5	26.4	73.0	30.6	5.6	9.0	7.5	10.1	10.4
FY 67	42.6	8.7	28.5	74.1	31.5	6.0	10.0	8.6	11.0	11.0
FY 68	43.2	9.3	29.4	74.0	31.3	6.1	10.0	9.0	11.4	11.4
FY 69	42.1	8.6	27.7	73.2	30.1	5.9	9.4	8.4	10.8	11.7
FY 70	39.2	8.0	25.4	72.3	27.7	5.3	8.1	7.8	10.1	12.1
FY 71	35.2	7.3	22.3	68.3	24.5	4.6	7.0	7.1	9.3	12.8
FY 72	32.4	6.7	20.6	66.0	21.9	3.9	6.2	6.5	9.1	12.9
FY 73	29.6	5.9	18.9	65.0	20.7	3.7	5.8	5.9	8.2	12.9
FY 74	28.8	5.7	18.2	63.8	19.7	3.5	5.5	5.5	7.7	13.1
FY 75	26.0	5.8	16.7	62.9	18.7	3.4	5.3	5.5	8.1	14.0
FY 76	24.0	5.4	15.6	62.5	18.1	3.3	5.0	5.3	7.8	13.8
FY 77	23.7	5.2	15.7	62.5	17.6	3.2	5.0	5.0	7.6	13.3
FY 78	22.9	5.0	15.4	61.9	17.3	3.1	4.8	4.7	7.3	13.3
FY 79	23.3	5.0	15.6	61.0	16.8	2.9	4.8	4.6	7.0	13.1
FY 80	22.9	5.2	15.8	61.3	16.7	2.8	4.8	4.9	7.4	13.1
FY 81	23.8	5.5	16.5	61.7	16.8	2.8	5.0	5.2	7.7	13.2
FY 82	24.3	5.6	16.9	61.8	16.9	2.8	5.1	5.2	7.7	13.3

APPENDICES

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APPENDIX A
TABLE 1
Department of Defense
Financial Summary
(In Millions of Dollars)

	FISCAL YEAR						
	1964	1968	1972	1976	1980	1981	1982
Summary by Budget Title							
Military Personnel	12,983	19,961	23,147	25,430	31,065	36,709	41,278
Retired Pay	1,211	2,093	3,889	7,326	11,920	13,832	15,600
Operation and Maintenance	11,693	20,950	21,242	28,848	46,605	54,159	62,430
Procurement	15,028	22,528	18,526	21,130	35,312	44,951	49,101
Research, Development, Test, & Evaluation	7,053	7,263	7,584	9,520	13,495	16,054	19,921
Special Foreign Currency Program	-	-	12	3	7	3	3
Military Construction	977	1,557	1,262	2,147	2,245	3,377	5,598
Family Housing & Homeowners Asst. Prog.	602	612	839	1,258	1,551	2,044	2,193
Revolving & Management Funds	-	-	-	135	-	72	276
Total-Direct Program (TOA)	49,547	74,965	76,502	95,796	142,209	171,202	196,400
Summary by Program							
Strategic Forces	8,387	7,128	7,156	7,220	11,117	13,150	14,529
General Purose Forces	16,385	30,489	25,518	32,852	52,392	65,835	74,399
Intelligence and Communications	4,380	5,542	5,451	6,671	9,157	10,907	12,712
Airlift and Sealift	1,040	1,747	1,114	1,262	2,126	2,783	3,445
Guard and Reserve Forces	1,768	2,177	3,255	5,374	7,874	9,295	10,284
Research, Development, Test and Evaluation	4,834	4,270	5,756	8,655	11,828	13,729	17,093
Central Supply and Maintenance	4,638	8,385	8,663	9,718	15,369	16,995	19,529
Training, Medical, Other Gen. Pers. Activ.	6,921	12,151	15,198	21,520	29,164	34,427	39,492
Administration and Assoc. Activities	1,111	1,287	1,737	2,260	2,545	3,096	3,853
Support of Other Nations 1/	81	1,789	2,652	264	637	986	1,064
Total-Direct Program (TOA)	49,547	74,965	76,502	95,796	142,209	171,202	196,400
Summary by Component							
Department of the Army	12,275	24,962	22,094	23,759	34,567	41,335	47,552
Department of the Navy	14,450	20,781	24,041	31,456	47,084	56,727	63,263
Department of the Air Force	19,958	24,974	23,834	28,432	41,690	50,543	59,769
Defense Agencies/OSD/JCS	1,007	1,498	1,745	3,487	5,272	6,259	7,348
Defense-wide	1,857	2,749	4,788	8,661	13,597	16,338	18,467
Total-Direct Program (TOA)	49,547	74,965	76,502	95,796	142,209	171,202	196,400
Financing Adjustments	80	1,377	-1,496	-288	412	-897	-740
Budget Authority (BA)	49,627	76,342	75,006	95,508	142,621	170,305	195,660
Outlays	49,470	77,265	75,076	87,891	132,840	157,600	180,000

Note: In the FY 1981 column, amounts for military and civilian pay increases, military retired pay and proposed legislation are distributed. Details may not add to the totals due to rounding.

DEPARTMENT OF DEFENSE

STRATEGIC FORCES HIGHLIGHTS

	FY 64	FY 68	FY 75	FY 80	FY 81	FY 82
STRATEGIC OFFENSIVE:						
LAND BASED ICBM'S:						
TITAN	108	54	54	54	54	54
MINUTEMAN I	600	570	—	—	—	—
MINUTEMAN II	—	394	450	450	450	450
MINUTEMAN III	—	—	550	550	550	550
BOMBER SQUADRONS:						
B-47, B-58	36	—	—	—	—	—
B-52C-F/D	25	17	5	5	5	5
B-52G/H	17	17	18	16	16	16
FB-111	—	—	4	4	4	4
FLEET BALLISTIC LAUNCHERS						
POLARIS	336	656	288	80	—	—
POSEIDON (C-3 AND C-4)	—	—	368	496	496	496
TRIDENT	—	—	—	—	—	48
STRATEGIC DEFENSIVE:						
FIGHTER INTERCEPTOR SQDNS:						
ACTIVE:						
F-101, F-102, F-104	27	15	—	—	—	—
F-106	13	11	6	7	7	5
F-15	—	—	—	—	—	1
AIR NATIONAL GUARD:						
F-4	—	—	—	2	3	5
F-86, F-89, F-100	19	2	—	—	—	—
F-101	—	—	6	3	2	—
F-102	10	20	2	—	—	—
F-106	—	—	6	5	5	5
AIR DEFENSE BATTERIES:						
NIKE-HERCULES	147	123	—	—	—	—

DEPARTMENT OF DEFENSE

GENERAL PURPOSE FORCES HIGHLIGHTS

	FY 64	FY 68	FY 75	FY 80	FY 81	FY 82
LAND FORCES:						
ARMY DIVISIONS:						
ACTIVE	16	19	14	16	16	16
RESERVE	23	8	8	8	8	8
MARINE CORPS DIVISIONS:						
ACTIVE	3	4	3	3	3	3
RESERVE	1	1	1	1	1	1
TACTICAL AIR FORCES:						
AIR FORCE WINGS:						
ACTIVE (FULL STRENGTH EQUIV)	21	25	26(22)	26(23)	26(24)	26(24)
RESERVE	7	8	11	11	11	12
MARINE CORPS WINGS:						
ACTIVE	3	3	3	3	3	3
RESERVE	1	1	1	1	1	1
NAVY ATTACK WINGS:						
ACTIVE	15	15	13	12	12	12
RESERVE	2	2	2	2	2	2
NAVAL FORCES:						
ACTIVE FLEET	721	826	416	391	409	429
CARRIERS	24	23	15	13	12	13
OTHER SHIPS (ACTIVE & NRF)	82	49	10	6	7	6
RESERVE SHIPS	62	54	63	49	45	45
FLEET AUXILIARY FORCE SHIPS		1	16	30	34	33

DEPARTMENT OF DEFENSE

AIRLIFT AND SEALIFT FORCE HIGHLIGHTS

	FY 64	FY 68	FY 75	FY 80	FY 81	FY 82
STRATEGIC AIRLIFT:						
C-5 AIRCRAFT	—	—	76	77	77	77
C-141 AIRCRAFT	6	266	275	275	275	275
TACTICAL AIRLIFT:						
AIR FORCE ACTIVE:						
C-130 AIRCRAFT	506	502	320	272	272	272
OTHER AIRCRAFT	684	352	—	—	—	
AIR FORCE RESERVE AND NATIONAL GUARD:						
C-130 AIRCRAFT	—	8	247	292	310	319
C-123 AIRCRAFT	53	—	70	70	52	18
C-7A AIRCRAFT	—	—	53	49	35	35
OTHER	802	638	—	—	—	
ACTIVE NAVY & MARINE CORPS TACTICAL SUPPORT AIRCRAFT	120	116	86	59	61	61
NAVY & MARINE CORPS RESERVE TACTICAL SUPPORT AIRCRAFT	72	72	30	24	18	19
SEALIFT:						
SHIPS, ACTIVE						
TANKER	25	26	7	6	6	6
CARGO & STORES SHIPS	38	41	11	10	8	8
OTHER	38	63	—	—	—	
CONTROLLED FLEET CHARTERS						
TANKER	—	—	12	14	14	14
CARGO	—	—	1	22	23	23
NATIONAL DEFENSE RESERVE FLEET	255	490	139	159	162	165

DEPARTMENT OF DEFENSE BUDGET

SUMMARY OF SELECTED RESERVE STRENGTHS

(END-YEAR-IN-THOUSANDS)

	FY 64	FY 68	FY 75	FY 80	FY 81	FY 82	CHANGE FY 81-82
RESERVE PERSONNEL, ARMY	269	244	225	207	217	237	+20
RESERVE PERSONNEL, NAVY	123	124	98	87	87	88	0
RESERVE PERSONNEL, MARINE CORPS	46	47	32	35	37	39	+ 2
RESERVE PERSONNEL, AIR FORCE	61	43	51	59	61	64	+ 3
NATIONAL GUARD PERSONNEL, ARMY	382	389	395	367	386	398	+12
NATIONAL GUARD PERSONNEL, A.F.	73	75	95	96	98	98	0
TOTAL	953	922	897	851	885	923	+37

Note: May not add due to rounding.

APPENDIX B

TABLE 1

Department of Defense

General and Flag Officer Strengths

Actual	General and Flag Officer Strengths	General and Flag Officers Per 10,000 Total Military
1960	1,260	5.1
1961	1,254	5.0
1962	1,303	4.6
1963	1,292	4.8
1964	1,294	4.8
1965	1,287	4.8
1966	1,320	4.3
1967	1,334	4.0
1968	1,352	3.8
1969	1,336	3.9
1970	1,339	4.4
1971	1,330	4.9
1972	1,324	5.7
1973	1,291	5.7
1974	1,249	5.8
1975	1,199	5.6
1976	1,184	5.7
19TQ	1,174	5.7
1977	1,159	5.6
1978	1,119	5.4
1979	1,119	5.5
1980	1,110	5.4
Programmed*		
1981	1,119	5.4
1982	1,119	5.3

* FY 1982 President's Budget

TABLE 2

Department of Defense

Officer and Enlisted Strength

Actual	Officer Strength (000s) 1/	Enlisted to Officer Ratio
1960	317	6.8
1961	315	6.9
1962	343	7.2
1963	334	7.1
1964	337	7.0
1965	339	6.8
1966	349	7.9
1967	384	7.8
1968	416	7.5
1969	419	7.3
1970	402	6.3
1971	371	6.3
1972	336	5.9
1973	321	6.0
1974	302	6.2
1975	292	6.3
1976	281	6.4
19TQ	279	6.5
1977	275	6.5
1978	273	6.5
1979	273	6.4
1980	277	6.3
Programmed 2/		
1981	282	6.3
1982	285	6.3

1/ Includes all officers on extended active duty.
2/ FY 1982 President's Budget.

TABLE 3

Department of Defense
Manpower Levels
(End Year - In Thousands)

Actual	Active Military 1/	Civilian 2/	Total
1960	2,476	1,230	3,706*
1961	2,494	1,215*	3,709*
1962	2,808	1,244	4,052
1963	2,700	1,226	3,926
1964	2,687	1,176	3,863
1965	2,655	1,155	3,810
1966	3,094	1,261	4,355
1967	3,377	1,398	4,775
1968	3,547	1,393	4,940
1969	3,460	1,391	4,851
1970	3,066	1,265	4,331
1971	2,714	1,190	3,904
1972	2,322	1,159	3,481
1973	2,252	1,100	3,352
1974	2,161	1,109	3,270
1975	2,127	1,078	3,205
1976	2,081	1,047	3,128
19TQ	2,083	1,042	3,125
1977	2,074	1,022	3,096
1978	2,061	1,016	3,077
1979	2,024	991	3,015
1980	2,050	990	3,040
Programmed 3/			
1981	2,065	994	3,059
1982	2,094	995	3,089

1/ Excludes military personnel on active duty who are paid from Civil Works and Reserve Components appropriations.
2/ Direct and indirect hire. Excludes Civil Functions, special youth employment programs, and NSA employees.
3/ FY 1982 President's Budget.

* Estimated

TABLE 4

Active Duty Military Personnel, Reserve Component Military Personnel, and Civilian Personnel Strength 1/
(End Years -- In Thousands)

	1964	1968	1972	1976	1980	1981	1982 2/
Active Duty Military							
Army	972	1,570	811	779	777	775	786
Navy	667	765	588	525	527	537	550
Marine Corps	190	307	198	192	188	188	188
Air Force	856	905	726	585	558	564	569
Total	2,685	3,547	2,322	2,081	2,050	2,065	2,094
Reserve Components (Selected Reserve)							
Army National Guard	382	389	388	362	367	386	398
Army Reserve	269	244	235	195	207	217	237
Naval Reserve	123	124	124	97	87	87	88
Marine Corps Reserve	46	47	41	30	35	36	39
Air National Guard	73	75	89	91	96	98	98
Air Force Reserve	61	43	47	48	59	61	64
Total	953	922	925	823	851	885	923
Direct Hire Civilian							
Army 3/	360	462	367	329	312	308	307
Navy	332	419	342	311	298	302	299
Air Force 3/	305	331	280	248	231	227	231
Defense Agencies	38	75	61	72	75	79	80
Total 3/	1,035	1,287	1,050	960	916	916	916

1/ Numbers may not add to total due to rounding.
2/ FY 1982 President's Budget.
3/ These totals include Army and Air National Guard technicians, who were converted from State to Federal employees in FY 1979. The FY 1964 and 1968 totals have been adjusted to include approximately 38,000 and 39,000 technicians respectively.

TABLE 5

U.S. Military Personnel in Foreign Areas*
(End Year -- In Thousands)

	1964	1968	1972	1976	1978	1979	1980
Germany	263	225	210	213	234	239	244
Other Europe	119	66	62	61	61	61	65
Europe, Afloat	54	23	26	41	35	25	22
South Korea	63	67	41	39	42	39	39
Japan and Ryukyus	89	79	64	45	46	46	46
Other Pacific	27	37	25	27	16	15	15
Pacific Afloat (including Southeast Asia)	52	94	51	24	26	22	15
Thailand	4	48	47	1	--	--	--
South Vietnam	16	534	47	--	--	--	--
Miscellaneous Foreign	68	27	22	8	12	11	42
Total	755	1,200	595	460	472	458	489

* Numbers may not add to total due to rounding.

APPENDIX C

TABLE C-1

DEPARTMENT OF DEFENSE BUDGET

DEFENSE BUDGET TOTALS

($ IN BILLIONS)

CURRENT DOLLARS	FY 1980 ACTUAL	FY 1981 ESTIMATE	FY 1982 ESTIMATE	INCREASE FY 1981-82
TOTAL OBLIGATIONAL AUTHORITY (TOA)	142.2	171.2	196.4	25.2
BUDGET AUTHORITY (BA)	142.6	170.3	195.7	25.4
OUTLAYS	132.8	157.6	180.0	22.4
CONSTANT FY 1982 DOLLARS				
TOTAL OBLIGATIONAL AUTHORITY (TOA)	172.9	186.5	196.4	9.9
BUDGET AUTHORITY (BA)	173.4	185.5	195.7	10.2
OUTLAYS	162.5	172.5	180.0	7.5

TABLE C-2

DEPARTMENT OF DEFENSE BUDGET
FINANCIAL SUMMARY BY APPROPRIATION CATEGORY
(BILLIONS OF $)

APPROPRIATION TITLE	CURRENT DOLLARS TOTAL OBLIGATIONAL AUTHORITY FY 1980	FY 1981	FY 1982	CHANGE FY 1981-82
MILITARY PERSONNEL	31.1	36.7	41.3	+4.6
RETIRED PAY	11.9	13.8	15.6	+1.8
OPERATION AND MAINTENANCE	46.6	54.2	62.4	+8.3
PROCUREMENT	35.3	45.0	49.1	+4.1
RDT&E	13.5	16.1	19.9	+3.9
MILITARY CONSTRUCTION	2.3	3.4	5.6	+2.2
FAMILY HOUSING	1.6	2.0	2.2	+0.1
REVOLVING AND MANAGEMENT FUNDS	—	0.1	0.3	+0.2
TOTAL MILITARY FUNCTIONS	142.2	171.2	196.4	+25.2

Note: May not add due to rounding.

TABLE C-3

DEPARTMENT OF DEFENSE BUDGET
FINANCIAL SUMMARY BY APPROPRIATION CATEGORY— CONSTANT PRICES
(BILLIONS OF $)

APPROPRIATION TITLE	CONSTANT FY 1982 DOLLARS TOTAL OBLIGATIONAL AUTHORITY FY 1980	FY 1981	FY 1982	CHANGE FY 1981-82
MILITARY PERSONNEL	40.4	40.8	41.3	+0.5
RETIRED PAY	14.7	15.1	15.6	+0.5
OPERATION AND MAINTENANCE	56.0	58.6	62.4	+3.8
PROCUREMENT	41.4	48.5	49.1	+0.6
RDT&E	16.0	17.5	19.9	+2.5
MILITARY CONSTRUCTION	2.6	3.6	5.6	2.0
FAMILY HOUSING	1.8	2.2	2.2	—
REVOLVING AND MANAGEMENT FUNDS	—	0.1	0.3	+0.2
TOTAL MILITARY FUNCTIONS	172.9	186.5	196.4	+9.9

Note: May not add due to rounding.

TABLE C-4

DEPARTMENT OF DEFENSE BUDGET

FINANCIAL SUMMARY BY MAJOR PROGRAM

(BILLIONS OF $)

MILITARY PROGRAM	CURRENT DOLLARS TOTAL OBLIGATIONAL AUTHORITY FY 1980	FY 1981	FY 1982	FY 1981-82
STRATEGIC FORCES	11.1	12.6	15.0	+2.4
GENERAL PURPOSE FORCES	52.2	65.4	73.5	+8.1
INTELLIGENCE AND COMMUNICATIONS	9.1	10.9	13.0	+2.1
AIRLIFT AND SEALIFT	2.1	2.8	3.5	+0.7
GUARD AND RESERVE FORCES	7.9	9.4	10.3	+0.9
RESEARCH AND DEVELOPMENT	11.9	13.8	17.3	+3.5
CENTRAL SUPPLY AND MAINTENANCE	15.6	17.5	19.5	+2.0
TRAINING, MEDICAL, OTHER GEN. PERS. ACTIV.	29.2	34.6	39.2	+4.6
ADMINISTRATIVE AND ASSOC. ACTIVITIES	2.5	3.3	4.0	+0.7
SUPPORT OF OTHER NATIONS	0.6	0.9	1.0	+0.1
TOTAL MILITARY FUNCTIONS	142.2	171.2	196.4	+25.2

Note: May not add due to rounding.

TABLE C-5

DEPARTMENT OF DEFENSE BUDGET

FINANCIAL SUMMARY BY MAJOR PROGRAM — CONSTANT PRICES

(BILLIONS OF $)

MILITARY PROGRAM	CONSTANT FY 1982 DOLLARS TOTAL OBLIGATIONAL AUTHORITY FY 1980	FY 1981	FY 1982	CHANGE FY 1981-82
STRATEGIC FORCES	13.4	13.7	15.0	+1.3
GENERAL PURPOSE FORCES	63.3	71.1	73.5	+2.4
INTELLIGENCE AND COMMUNICATIONS	11.0	11.9	13.0	+1.1
AIRLIFT AND SEALIFT	2.6	3.1	3.5	+0.4
GUARD AND RESERVE FORCES	9.8	10.3	10.3	—
RESEARCH AND DEVELOPMENT	14.2	15.0	17.3	+2.3
CENTRAL SUPPLY AND MAINTENANCE	18.8	19.0	19.5	+0.5
TRAINING, MEDICAL, OTHER GEN. PERS. ACTIV.	36.2	37.9	39.2	+1.3
ADMINISTRATIVE AND ASSOC. ACTIVITIES	3.0	3.6	4.0	+0.4
SUPPORT OF OTHER NATIONS	0.7	1.0	1.0	—
TOTAL MILITARY FUNCTIONS	172.9	186.5	196.4	+9.9

Note: May not add due to rounding.

TABLE C-6

DEPARTMENT OF DEFENSE BUDGET

DEFENSE EMPLOYMENT OUTLOOK

(END-YEAR-IN-THOUSANDS)

	FY 64	FY 68	FY 75	FY 80	FY 81	FY 82	CHANGE FY 81-82
CIVILIANS							
ARMY	453	542	401	361	361	360	−1
NAVY/MARINE CORPS	346	433	326	309	312	309	−3
AIR FORCE	338	357	278	244	240	244	+4
DEFENSE AGENCIES	37	74	73	77	81	82	+1
TOTAL CIVILIANS	1,174	1,405	1,078	990	994	995	+1
MILITARY (ACTIVE)							
ARMY	972	1,570	784	777	775	786	+11
NAVY	667	765	535	527	537	550	+12
MARINE CORPS	190	307	196	188	188	188	0
AIR FORCE	856	905	613	558	565	570	+5
TOTAL MILITARY	2,685	3,547	2,128	2,050	2,065	2,094	+28
TOTAL MILITARY AND CIVILIANS	3,859	4,952	3,206	3,040	3,060	3,089	+29
DEFENSE RELATED INDUSTRY	2,280	3,174	1,800	2,125	2,344	2,509	+165
TOTAL DEFENSE MANPOWER	6,139	8,126	5,006	5,165	5,404	5,598	+194

Note: May not add due to rounding.

TABLE C-7

FY 1982 DEPARTMENT OF DEFENSE BUDGET

SCHEDULING OF BUDGET REQUESTS

(TOA, $ MILLIONS)

	DoD APPROPRIATIONS ACT	MILCON/ FAMILY HOUSING	GRAND TOTAL
JANUARY 1981 APPROPRIATION (TOA) REQUEST	185,116	7,769	192,886
CONTINGENCY FOR LATER SUBMISSION			
OCTOBER 1, 1981 CIVILIAN AND MILITARY PAY RAISES	3,643	11	3,655
FY 1982 WAGE BOARD INCREASES	115	1	116
PROPOSED LEGISLATION:			
RETIRED PAY	-477		-477
OTHER	220		220
SUBTOTAL	3,502	12	3,514
TOTAL FY 1982 BUDGET ESTIMATE	188,618	7,782	196,400

Note: May not add due to rounding.

TABLE C-8

FY 1982 DEPARTMENT OF DEFENSE BUDGET
FY 1981 SUPPLEMENTALS
($ THOUSANDS)

PURPOSE	AMOUNT
PAY INCREASES	(4,427,185)
MILITARY PAY INCREASES, OCTOBER 1, 1980	3,227,897
CIVILIAN PAY INCREASES, OCTOBER 1980	771,723
WAGE BOARD PAY INCREASES	427,565
OTHER ADJUSTMENTS	(1,862,044)
INCREASED SUBSISTENCE COSTS	38,133
RETIRED PAY INCREASES	29,100
FUEL PRICE INCREASES	830,403
MILITARY PERSONNEL LEGISLATION	159,034
NON-FUEL COST INCREASES	315,201
RDF/READINESS PROGRAM INCREASES	210,000
MIL CON PLANNING AND DESIGN INCREASE	93,500
OTHER FACT-OF-LIFE INCREASES	186,673
TOTAL	6,289,229

TABLE C-9

DEPARTMENT OF DEFENSE BUDGET
FINANCIAL SUMMARY

	FY 50	FY 53	FY 64	FY 68	FY 75	FY 80	FY 81	FY 82
DEPARTMENT OF DEFENSE AS PERCENTAGE:								
FEDERAL BUDGET (OUTLAYS)	27.4%	57.0%	41.7%	43.2%	26.0%	22.9%	23.8%	24.3%
GROSS NATIONAL PRODUCT	4.4%	12.1%	8.0%	9.3%	5.8%	5.2%	5.5%	5.6%
LABOR FORCE	4.6%	14.9%	8.2%	10.0%	5.3%	4.8%	5.0%	5.1%
NET PUBLIC SPENDING	18.5%	42.9%	27.8%	29.4%	16.7%	15.8%	16.5%	16.9%

TABLE C-10

LONG-RANGE FORECASTS AND PAY/PRICE ASSUMPTIONS

	FY 1981	FY 1982	FY 1983	FY 1984	FY 1985	FY 1986
TOA ($ BILLIONS):						
MILITARY RETIRED PAY	13.8	15.6	18.4	20.4	22.4	24.3
OTHER MILITARY FUNCTIONS	157.4	180.8	205.6	232.7	261.9	294.0
TOTAL, CURRENT PRICES	171.2	196.4	224.0	253.1	284.3	318.3
TOTAL, CONSTANT (FY 1982) PRICES	186.5	196.4	206.2	216.5	227.4	238.7
PERCENT CHANGE	7.8%	5.3%	5.0%	5.0%	5.0%	5.0%
OUTLAYS ($ BILLIONS):						
MILITARY RETIRED PAY	13.8	15.6	18.4	20.4	22.4	24.3
OTHER MILITARY FUNCTIONS	143.8	164.4	186.9	211.9	239.4	269.0
TOTAL, CURRENT PRICES	157.6	180.0	205.3	232.3	261.8	293.3
TOTAL, CONSTANT (FY 1982) PRICES	172.5	180.0	188.2	197.1	207.0	217.5
PERCENT CHANGE	6.1%	4.4%	4.6%	4.7%	5.0%	5.1%
COMPOSITE PAY/PRICE ASSUMPTIONS OUTLAYS (FY 1982 = 100)	91.4	100.0	109.1	117.8	126.5	134.8

TABLE C-11

DEPARTMENT OF DEFENSE

FINANCIAL SUMMARY BY COMPONENT

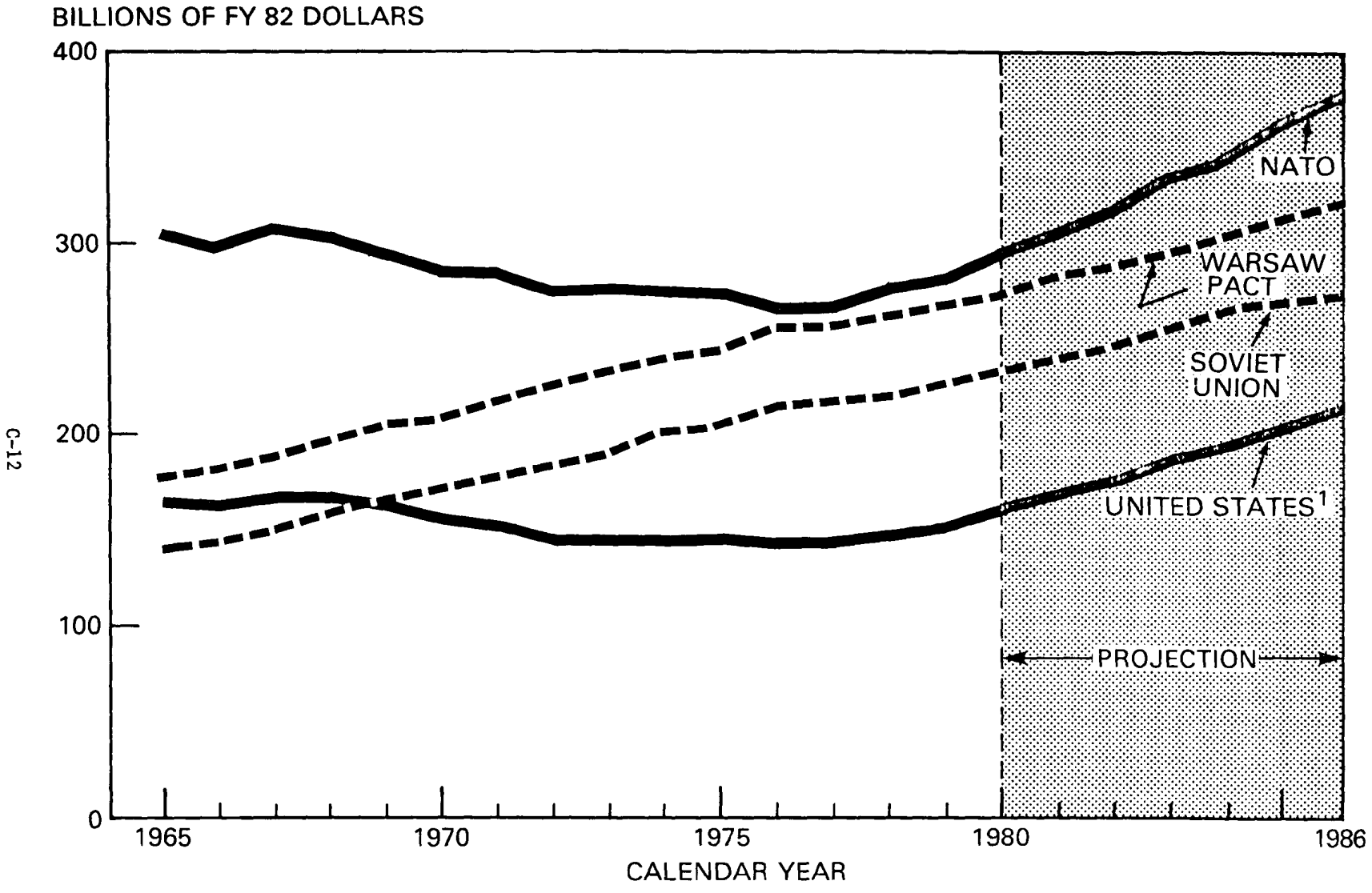
(TOTAL OBLIGATIONAL AUTHORITY, $ IN BILLIONS)

CURRENT DOLLARS	FY 1980	FY 1981	FY 1982	CHANGE FY 1981-82
ARMY	34.6	41.3	47.6	+ 6.2
NAVY	47.1	56.7	63.3	+ 6.5
AIR FORCE	41.7	50.5	59.8	+ 9.2
DEFENSE AGENCIES/OSD	5.3	6.3	7.3	+ 1.1
DEFENSE-WIDE	13.6	16.3	18.5	+ 2.1
TOTAL	142.2	171.2	196.4	+25.2
CONSTANT (FY 1982) DOLLARS				
ARMY	42.2	45.1	47.6	+ 2.5
NAVY	57.0	61.7	63.3	+ 1.6
AIR FORCE	50.9	55.1	59.8	+ 4.7
DEFENSE AGENCIES/OSD	6.2	6.8	7.3	+ 0.6
DEFENSE-WIDE	16.6	17.8	18.5	+ 0.6
TOTAL	172.9	186.5	196.4	+ 9.9

Note: May not add due to rounding.

CHART C-12

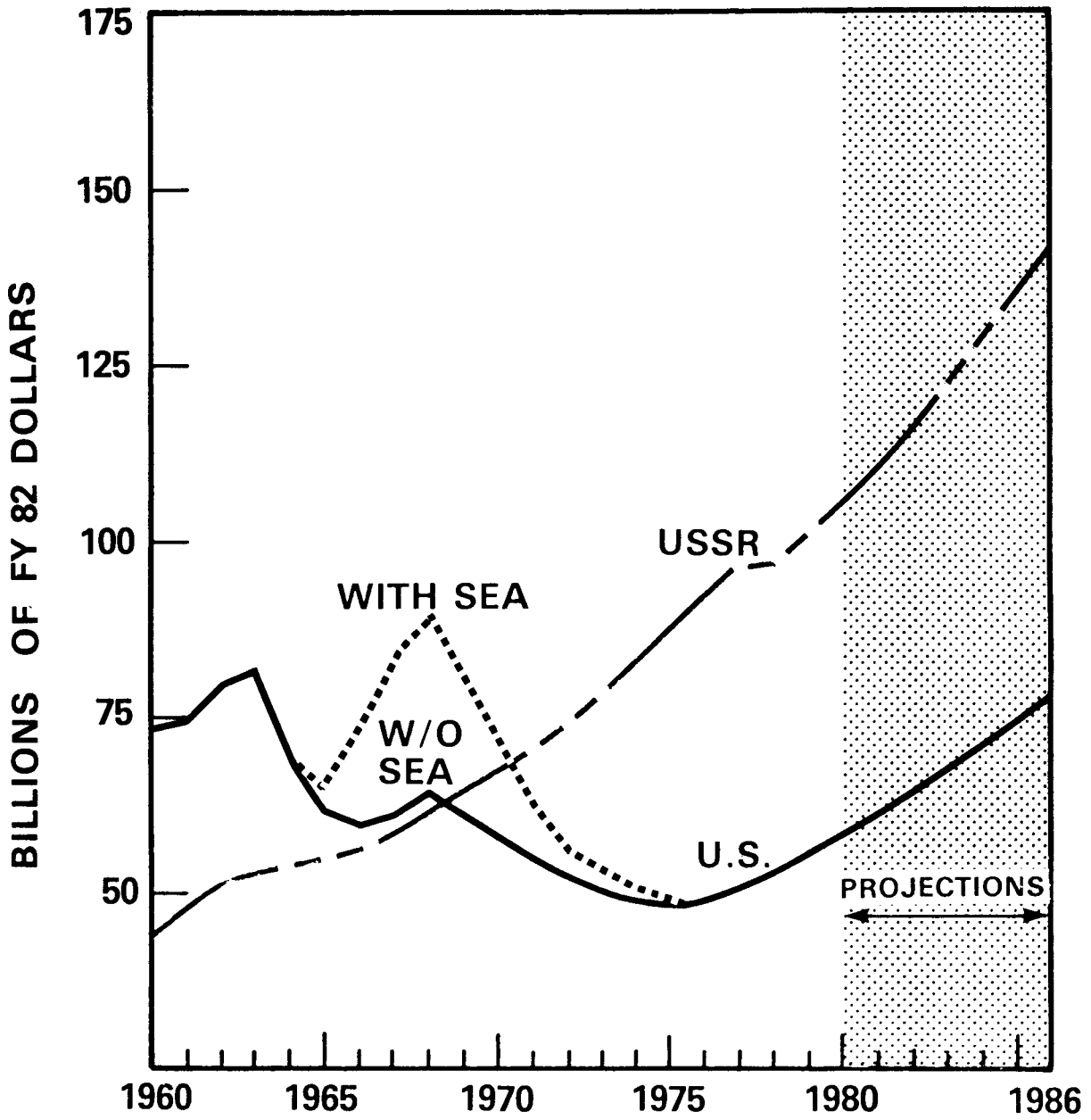
COMPARISON OF NATO AND WARSAW PACT TOTAL DEFENSE COSTS



[1]SOUTHEAST ASIA INCREMENT EXCLUDED (I.E., VIETNAM COSTS)

CHART C-13

COMPARISON OF U.S. MILITARY INVESTMENT OUTLAYS AND ESTIMATED DOLLAR COST OF SOVIET MILITARY INVESTMENT



NOTES:

1. INVESTMENT INCLUDES RDT&E, PROCUREMENT, AND MILITARY CONSTRUCTION.
2. PROJECTIONS ARE BASED ON FIVE PERCENT ANNUAL REAL GROWTH FOR USSR. FOR U.S. REAL GROWTH INVESTMENT OUTLAYS PROJECTED AT ANNUAL RATES OF FIVE PERCENT
3. SEA-SOUTHEAST ASIA [I.E., VIET NAM COSTS]

TABLE C-14

PRESIDENT'S BUDGET-
PAY AND INFLATION RATE ASSUMPTIONS

FY 1980-FY 1986
ANNUAL PERCENTAGE CHANGE

CATEGORY	1980 TO 1981	1981 TO 1982	1982 TO 1983	1983 TO 1984	1984 TO 1985	1985 TO 1986
PAY						
MILITARY	11.70	9.10	9.00	8.50	8.00	7.50
GENERAL SCHEDULE	9.10	5.50	9.00	8.50	8.00	7.50
WAGE BOARD	8.25	6.94	7.00	7.70	7.20	7.30
MILITARY RETIRED PAY	12.57	9.19	14.35	7.66	6.55	5.63
INDUSTRY PURCHASES (NON-PAY)	10.43	9.70	8.60	8.00	7.20	6.40
COMPOSITE, DoD	11.78	9.45	9.07	8.03	7.32	6.62

TABLE C-15

FY 1982 DEPARTMENT OF DEFENSE BUDGET
CHRONOLOGY OF THE FY 1981 BUDGET ESTIMATES
($ MILLIONS)

	TOA		
	TRANSMITTED TO CONGRESS	CONTINGENCIES	TOTAL
FY 1981 BUDGET (JANUARY 1980)	156,626	2,113	158,739
BUDGET AMENDMENTS[1]	3,477	-417	3,060
CONGRESSIONAL ACTION	4,959	—	4,959
STATUS AFTER CONGRESSIONAL ACTION	165,063	1,696	166,758
SUPPLEMENTALS:			
PAY INCREASES	4,427	-1,870	2,558
SUBSISTENCE INCREASES	38	—	38
RETIRED PAY INCREASES	29	—	29
FUEL PRICE INCREASES	830	—	830
MILITARY PERSONNEL LEGISLATION	159	—	159
NON-FUEL COST INCREASES	315	—	315
RDF/READINESS PROGRAM INCREASES	210	—	210
MIL CON PLANNING AND DESIGN	94	—	94
OTHER FACT-OF-LIFE INCREASES	187	—	187
ALL OTHER CHANGES	-66	90	24
TOTAL CHANGES SINCE CONGRESSIONAL ACTION	6,224	-1,780	4,443
CURRENT FY 1981 ESTIMATE	171,286	-85	171,202

[1] EXCLUDES NOV 1980 READINESS AMENDMENT ($1,385 MILLION) UPON WHICH THE CONGRESS TOOK NO ACTION.

Note: May not add due to rounding.

TABLE C-16

FY 1982 DEPARTMENT OF DEFENSE BUDGET

TOTAL OBLIGATIONAL AUTHORITY, BUDGET AUTHORITY AND OUTLAYS

(MILLIONS OF DOLLARS)

FUNCTIONAL CLASSIFICATION	DIRECT BUDGET PLAN (TOA)			BUDGET AUTHORITY (BA)			OUTLAYS		
	FY 1980	FY 1981	FY 1982	FY 1980	FY 1981	FY 1982	FY 1980	FY 1981	FY 1982
MILITARY PERSONNEL									
ACTIVE FORCES	28,608	33,557	34,952	28,547	33,557	34,952	28,465	33,552	34,899
RESERVE FORCES	2,456	3,152	3,411	2,467	3,152	3,411	2,376	3,159	3,392
TOTAL - MILITARY PERSONNEL	31,065	36,709	38,363	31,014	36,709	38,363	30,842	36,711	38,291
RETIRED MILITARY PERSONNEL	11,920	13,917	16,077	11,965	13,917	16,077	11,920	13,880	16,049
OPERATION AND MAINTENANCE	46,605	54,159	61,492	46,365	54,074	61,492	44,770	52,117	59,659
PROCUREMENT	35,312	44,951	49,065	35,283	44,951	49,065	29,021	35,422	40,120
RESEARCH, DEVELOPMENT, TEST & EVAL	13,495	16,054	19,841	13,561	16,054	19,841	13,127	15,441	18,485
MILITARY CONSTRUCTION	2,254	3,377	5,589	2,293	3,327	5,554	2,450	2,526	2,919
FAMILY HOUSING & HOMEOWNERS ASSIST. PROG	1,551	2,044	2,181	1,526	2,014	2,156	1,680	1,861	1,959
SPECIAL FOREIGN CURRENCY PROGRAM	7	3	3	7	3	3	3	12	6
REVOLVING AND MANAGEMENT FUNDS	-	72	276	1,336	72	276	-246	443	-258
OFFSETTING RECEIPTS	-	-	-	-728	-732	-682	-728	-732	-682
INTERFUND TRANSACTIONS	-	-	-	-	-	-	-	-	-
DEFENSE-WIDE CONTINGENCIES	-	-85	3,514	-	-85	3,514	-	-85	3,450
TRUST FUNDS	-	-	-	13	11	10	15	15	12
INTRAGOVERNMENTAL TRANSACTIONS	-	-	-	-12	-11	-10	-12	-11	-10
TOTAL - DEPARTMENT OF DEFENSE	142,209	171,202	196,400	142,621	170,305	195,660	132,840	157,600	180,000
SUMMARY BY COMPONENT									
DEPARTMENT OF THE ARMY	34,567	41,335	46,110	34,380	41,052	45,824	32,601	38,704	42,894
DEPARTMENT OF THE NAVY	47,084	56,727	62,042	47,225	56,483	61,944	42,710	50,762	56,031
DEPARTMENT OF THE AIR FORCE	41,690	50,543	58,649	41,720	50,253	58,472	38,976	46,348	53,201
DEFENSE AGENCIES/OSD	5,229	6,216	7,100	5,601	6,077	6,980	4,786	5,809	6,063
DEFENSE-WIDE	13,639	16,465	18,984	13,695	16,524	18,925	13,768	16,062	18,361
DEFENSE-WIDE CONTINGENCIES	-	-85	3,514	-	-85	3,514	-	-85	3,450
TOTAL - DEPARTMENT OF DEFENSE	142,209	171,202	196,400	142,621	170,305	195,660	132,840	157,600	180,000

TABLE C-17

FY 1982 DEPARTMENT OF DEFENSE BUDGET

DIRECT BUDGET PLAN (TOA), BUDGET AUTHORITY, AND OUTLAYS

(MILLIONS OF DOLLARS)

FUNCTIONAL CLASSIFICATION	DEPT. OF DEFENSE - TOTAL			DEPT. OF THE ARMY			DEPT. OF THE NAVY			DEPT. OF THE AIR FORCE			DEF.AGS/OSD/UNDIST		
	FY 1980	FY 1981	FY 1982	FY 1980	FY 1981	FY 1982	FY 1980	FY 1981	FY 1982	FY 1980	FY 1981	FY 1982	FY 1980	FY 1981	FY 1982
MILITARY PERSONNEL															
ACTIVE FORCES	28,608	33,557	34,952	10,528	12,192	12,715	9,584	11,420	11,967	8,496	9,946	10,271	-	-	-
RESERVE FORCES	2,456	3,152	3,411	1,567	2,054	2,250	364	438	452	526	660	710	-	-	-
TOTAL - MILITARY PERSONNEL	31,065	36,709	38,363	12,095	14,246	14,965	9,948	11,858	12,419	9,021	10,605	10,980	-	-	-
RETIRED MILITARY PERSONNEL	11,920	13,917	16,077	-	-	-	-	-	-	-	-	-	11,920	13,917	16,077
OPERATION AND MAINTENANCE	46,605	54,159	61,492	12,303	14,058	16,317	16,319	19,279	21,331	14,215	16,319	18,926	3,768	4,502	4,918
PROCUREMENT															
AIRCRAFT	13,296	16,861	17,791	946	1,076	1,362	4,332	6,111	6,980	8,018	9,674	9,470	-	-	-
MISSILES	4,825	6,807	8,051	1,150	1,520	1,651	1,516	2,146	2,126	2,159	3,141	4,275	-	-	-
SHIPS	6,464	7,484	6,640	-	-	-	6,464	7,484	6,640	-	-	-	-	-	-
COMBAT VEHICLES, WEAPONS & TORPEDOES	2,348	3,355	3,738	1,811	2,582	2,720	537	773	1,018	-	-	-	-	-	-
ORDNANCE, VEHICLES & RELATED EQUIPMENT	1,806	2,488	3,530	866	1,426	1,863	452	617	946	488	445	721	-	-	-
ELECTRONICS & COMMUNICATIONS	2,838	3,360	3,684	1,034	1,402	1,295	1,202	1,264	1,476	602	694	913	-	-	-
OTHER PROCUREMENT	3,735	4,596	5,631	735	963	984	1,147	1,464	1,784	1,565	1,864	2,360	289	305	484
TOTAL - PROCUREMENT	35,312	44,951	49,065	6,542	8,969	9,874	15,650	19,859	20,950	12,832	15,818	17,758	289	305	484
RESEARCH, DEVELOPMENT, TEST & EVAL															
TECHNOLOGY BASE	2,265	2,554	2,949	462	506	617	611	701	801	562	597	648	630	750	883
ADVANCED TECHNOLOGY BASE	604	603	790	140	166	208	194	165	225	270	271	358	-	-	-
STRATEGIC PROGRAMS	2,188	3,469	4,417	241	268	346	359	413	513	1,556	2,748	3,459	31	40	100
TACTICAL PROGRAMS	5,313	5,681	6,961	1,470	1,528	1,614	2,824	2,932	3,486	1,019	1,221	1,860	-	-	-
INTELLIGENCE & COMMUNICATIONS	1,128	1,514	1,960	33	37	55	103	137	188	649	915	1,078	344	424	639
PROGRAMWIDE MANAGEMENT AND SUPPORT	1,996	2,233	2,763	499	581	738	472	546	653	945	1,024	1,266	79	83	106
TOTAL - RESEARCH,DEVELOP.,TEST,EVAL	13,495	16,054	19,841	2,846	3,087	3,577	4,563	4,895	5,866	5,001	6,776	8,669	1,084	1,297	1,728
MILITARY CONSTRUCTION	2,254	3,377	5,589	780	972	1,167	603	831	1,455	620	996	2,274	250	578	694
FAMILY HOUSING & HOMEOWNERS ASSIST. PROG	1,551	2,044	2,181	-	-	-	-	-	-	-	-	-	1,551	2,044	2,181
SPECIAL FOREIGN CURRENCY PROGRAM	7	3	3	-	-	-	-	-	-	-	-	-	7	3	3
REVOLVING AND MANAGEMENT FUNDS	-	72	276	-	4	211	-	4	22	-	28	43	-	35	-
DEFENSE-WIDE CONTINGENCIES	-	-85	3,514	-	-	-	-	-	-	-	-	-	-	-85	3,514
TOA TOTAL - DEPARTMENT OF DEFENSE	142,209	171,202	196,400	34,567	41,335	46,110	47,084	56,727	62,042	41,690	50,543	58,849	18,868	22,597	29,598
FINANCING ADJUSTMENTS	1,140	-165	-59	116	-5	-	248	-145	-	296	-54	-	479	39	-59
TRUST FUNDS & OFFSETTING RECEIPTS	-727	-731	-881	-303	-278	-286	-107	-98	-99	-266	-236	-177	-51	-119	-119
BUDGET AUTHORITY (BA)	142,621	170,305	195,660	34,380	41,052	45,824	47,225	56,483	61,944	41,720	50,253	58,472	19,296	22,517	29,420
OUTLAYS	132,840	157,600	180,000	32,601	38,704	42,894	42,710	50,762	56,031	38,976	46,348	53,201	18,554	21,786	27,874

APPENDIX D: ACRONYMS

AAA:	Anti-Aircraft Artillery
AAH:	Advanced Attack Helicopter
AAO:	Authorized Acquisition Objective
AAP:	Affirmative Actions Program
AAW:	Anti-Air Warfare
ABM:	Anti-Ballistic Missile
ACCS:	Air Command and Control System
ACDA:	Arms Control and Disarmament Agency
ADM:	Atomic Demolition Munitions
ADP:	Automated Data Processing
AE:	Assault Echelon
AECB:	Arms Export Control Board
AEW&C:	Airborne Early Warning and Control
AFQT:	Armed Forces Qualification Test
AFRT:	American Forces Radio and Television
AFSATCOM:	Air Force Satellite Communications
AGM:	Air-to-Ground Missile
AID:	Agency for International Development
ALCM:	Air-Launched Cruise Missile
ALCS:	Airborne Launch Control System
ALOC:	Air Line of Communication
ALWT:	Advanced Lightweight Torpedo
AMHS:	Automated Message Handling System
AMRAAM:	Advanced Medium-Range Air-to-Air Missile
AMST:	Advanced Medium STOL (Short Take-off and Landing) Transport
ARG:	Amphibious Ready Group
ASAS:	All Source Analysis System
ASAT:	Anti-Satellite
ASEAN:	Association of Southeast Asia Nations
ASM:	Air-to-Surface Missile
ASPJ:	Airborne Self-Protection Jammer
ASROC:	Anti-Submarine Rocket
ASUW:	Anti-Surface Ship Warfare
ASVAB:	Armed Services Vocational Aptitude Battery
ASW:	Anti-Submarine Warfare
ATFD:	Automated Tactical Fusion Division
ATGW:	Anti-Tank Guided Weapons
AUTODIN:	Automated Digital Network
AUTOSEVOCOM:	Automatic Secure Voice Communications
AUTOVON:	Automatic Voice Network
AVF:	All Volunteer Force
AWACS:	Airborne Warning and Control System
BA:	Budget Authority
BAQ:	Basic Allowance for Quarters
BETA:	Battlefield Exploitation and Target Acquisition
BMD:	Ballistic Missile Defense
BMEWS:	Ballistic Missile Early Warning System
BUIC:	Back-up Intercept Control

C^3:	Command, Control, and Communications
C^3CM:	Command, Control, and Communications Countermeasures
C^3I:	Command, Control, Communications, and Intelligence
CAT:	Conventional Arms Transfer
CCP:	Consolidated Cryptologic Program
CD:	Civil Defense
CEP:	Circular Error, Probable
CEWI:	Combat Electronics Warfare Intelligence
CFV:	Cavalry Fighting Vehicle
CHAMPUS:	Civilian Health and Medical Program of the Uniformed Services
CINC:	Commander-in-Chief
CINCEUR:	Commander-in-Chief, European Command
CINCLANT:	Commander-in-Chief, Atlantic
CINCPAC:	Commander-in-Chief, Pacific Command
CINCRED:	Commander-in-Chief, Readiness Command
CINCSAC:	Commander-in-Chief, Strategic Air Command
CIWS:	Close-In Weapon System
CMC:	Cruise Missile Carrier (Aircraft)
CMCHS:	Civilian-Military Contingency Hospital System
COB:	Collocated Operating Bases
COCOM:	Coordinating Committee for Multi-lateral Export Controls
COD:	Carrier On-Board Delivery
COLA:	Cost-of-Living Allowance
COMSEC:	Communications Security
CONUS:	Continental United States
COOP:	Continuity of Operation Plan
CPI:	Consumer Price Index
CRAF:	Civil Reserve Air Fleet
CSS:	Combat Service Support
CV:	Aircraft Carrier
CVBG:	Aircraft Carrier Battle Group
CVN:	Aircraft Carrier, Nuclear-powered
CVV:	Aircraft Carrier, Medium-sized
CW:	Chemical Warfare
DARPA:	Defense Advanced Research Projects Agency
DCA:	Dual-Capable Aircraft
DCS:	Defense Communications System
DDG:	Guided Missile Destroyer
DEB:	Digital European Backbone
DEERS:	Defense Enrollment/Eligibility Reporting System
DEW:	Distant Early Warning (Line)
DLA:	Defense Logistics Agency
DMA:	Defense Mapping Agency
DMSP:	Defense Meteorological Satellite Program
DMZ:	Demilitarized Zone
DNA:	Defense Nuclear Agency
DoD:	Department of Defense
DoE:	Department of Energy
DPC:	Defense Planning Committee
DPS:	Defense Priorities System
DRB:	Defense Resources Board
DRSP:	Defense Reconnaissance Support Program

DSARC:	Defense Systems Acquisition Review Council
DSB:	Defense Science Board
DSCS:	Defense Satellite Communication System
DSP:	Defense Support Program
ECCCS:	European Command and Control Console System
ECCM:	Electronic-Counter-Countermeasure
ECIP:	Energy Conservation Investment Program
ECM:	Electronic Countermeasures
EOH:	Equipment on Hand
ER:	Enhanced Radiation
ESF:	Economic Support Funds
ETS:	European Telephone System
EW:	Electronic Warfare
FAA:	Federal Aviation Administration
FCI:	Foreign Counterintelligence
FEBA:	Forward Edge of the Battle Area
FEMA:	Federal Emergency Management Agency
FFB:	Federal Finance Bank
FFG:	Guided Missile Frigate
FLIR:	Forward-Looking Infrared
FMS:	Foreign Military Sales
FRS:	Fleet Readiness Squadron
FVS:	Fighting Vehicle System
FWE:	Foreign Weapons Evaluation
FYDP:	Five-Year Defense Program
GDIP:	General Defense Intelligence Program
GDP:	Gross Domestic Product
GLCM:	Ground-Launched Cruise Missile
GLLD:	Ground Laser Locator Designator
GMF:	Ground Mobile Forces
GNP:	Gross National Product
GSA:	General Services Administration
GSFG:	Group of Soviet Forces, Germany
HARM:	High Speed Anti-Radiation Missile
HEMTT:	Heavy Expanded Mobility Tactical Truck
HF:	High Frequency
HMMWV:	High Mobility Multi-Purpose Wheeled Vehicle
HNS:	Host Nation Support
IC:	Integrated Circuit
ICBM:	Intercontinental Ballistic Missile
ICM:	Improved Conventional Munitions
IFF:	Identification, Friend or Foe
IFV:	Infantry Fighting Vehicle
IMA:	Individual Mobilization Augmentees or Intermediate Maintenance Activity
IMET:	International Military Education and Training Program
ING:	Inactive National Guard
IOC:	Initial Operational Capability
IONDS:	Integrated Operational Nuclear Detection System
IRBM:	Intermediate-Range Ballistic Missile
IRETS:	Infantry Remote Targeting System
IRR:	Individual Ready Reserve
IWDM:	Intermediate Water Depth Mine

JCMC:	Joint Crisis Management Capability
JCS:	Joint Chiefs of Staff
JINTACCS:	Joint Interoperability of Tactical Command and Control Systems
JOT&E:	Joint Operational Test and Evaluation
JSCS:	Joint Strategic Connectivity Staff
JSS:	Joint Surveillance System
JTIDS:	Joint Tactical Information Distribution System
LAMPS:	Light Airborne Multipurpose System
LAV:	Light Armored Vehicle
LCAC:	Landing Craft, Air Cushion
LHA:	Amphibious Assault Ship
LOC:	Line of Communication
LPD:	Amphibious Transport, Dock
LSD:	Amphibious Ship, Dock
LST:	Amphibious Ship, Tank
LTDP:	Long-Term Defense Program
MAB:	Marine Amphibious Brigade
MAC:	Military Airlift Command
MAF:	Marine Amphibious Force
MAGTF:	Marine Air-Ground Task Force
MAP:	Military Assistance Program or Multiple Aim Point Basing
MAU:	Marine Amphibious Unit
MBFR:	Mutual and Balanced Force Reductions
MC:	Mission Capable
MC&G:	Mapping, Charting, and Geodesy
MCM:	Mine Countermeasures
MCTL:	Military Critical Technology List
MENS:	Mission Element Need Statement
MEPCOM:	Military Enlistment Processing Command
MHE:	Materiels Handling Equipment
MIDS:	Multi-functional Information Distribution System
MIFASS:	Marine Integrated Fire and Air Support System
MIG:	Mikoyan Aircraft
MILES:	Multiple Integrated Laser Engagement System
MIRV:	Multiple Independently-Targetable Reentry Vehicle
MLRS:	Multiple Launch Rocket System
MLS:	Microwave Landing System
MOU:	Memorandum of Understanding
MPS:	Maritime Prepositioning ships
MRBM:	Medium-Range Ballistic Missile
MRR:	Materiel Readiness Report
MRTFB:	Major Range and Test Facility Base
MRV:	Multiple Reentry Vehicle
MSC:	Military Sealift Command
MSO:	Ocean-Going Minesweeper
MSP:	Military Space Program
MTMC:	Military Traffic Management Command
MULE:	Modular Universal Laser Equipment
MX:	Missile, Experimental
NAPR:	NATO Armaments Planning Review
NATO:	North Atlantic Treaty Organization
NBC:	Nuclear, Biological, and Chemical
NCA:	National Command Authorities

NDRF:	National Defense Reserve Fleet
NEACP:	National Emergency Airborne Command Post
NEARTIP:	Near-Term Torpedo Improvement Program
NFCS:	Nuclear Forces Communications Satellite
NFIP:	National Foreign Intelligence Program
NMCS:	National Military Command System
NORAD:	North American Air Defense Command
NPG:	Nuclear Planning Group
NSA:	National Security Agency
NSC:	National Security Council
NTC:	National Training Center
NTPS:	Near-Term Prepositioning Ships
O&M:	Operations and Maintenance
OASD:	Office of the Assistant Secretary of Defense
OCC:	Operational Control Center
ODA:	Official Development Assistance
OJCS:	Office of the Joint Chiefs of Staff
OMB:	Office of Management and Budget
OPM:	Office of Personnel Management
OSD:	Office of the Secretary of Defense
OSHA:	Occupational Safety and Health Act
OSUT:	One-Station Unit Training
OTH:	Over-the-Horizon
PAA:	Primary Aircraft Authorized
PAL:	Permissive Action Link
PAPS:	Periodic Armaments Planning System
PARCS:	Perimeter Acquisition Radar Attack Characterization System
PAVE PAWS:	Phased-Array Radars
PKO:	Peace-Keeping Operations
PLRS:	Position Location Reporting System
PLSS::	Precision Location Strike System
PMR:	Primary Mission Readiness
POC:	Programs of Cooperation
POL:	Petroleum-Oil-Lubricants
POM:	Program Objectives Memorandum
POMCUS:	Prepositioned Overseas Materiel Configured in Unit Sets
PPBS:	Planning, Programming, and Budgeting System
PRC:	People's Republic of China
PSI:	Pounds per square inch
PWRMS:	Prepositionined War Reserve Materiel Stocks
R&D:	Research and Development
RAP:	Rocket-Assisted Projectile
RD&A:	Research, Development, and Acquisition
RDF:	Rapid Deployment Forces
RDJTF:	Rapid Deployment Joint Task Force
RDT&E:	Research, Development, Test, and Evaluation
RFM:	Reserve Forces Modernization
RIMSTOP:	Retail Inventory Management Stockage Policy
ROK:	Republic of Korea
RO/RO:	Roll-On/Roll-Off
ROTC:	Reserve Officer Training Corps
RPMA:	Real Property Maintenance Activities
RPV:	Remotely Piloted Vehicle

RRF:	Ready Reserve Fleet
R/S/I:	Rationalization/Standardization/Interoperability
RSIRIP:	Reparable Secondary Item Recovery Improvement Program
RST:	Rapid Solidification Technology
RV:	Reentry Vehicle
S&T:	Science and Technology
SAC:	Strategic Air Command
SACDIN:	SAC Digital Network
SACEUR:	Supreme Allied Commander, Europe
SACLANT:	Supreme Allied Commander, Atlantic
SAGE:	Semi-Automatic Ground Environment
SALGP:	Semi-Active Laser-Guided Projectiles
SALT:	Strategic Arms Limitation Talks
SAM:	Surface-to-Air Missile
SAW:	Squad Automatic Weapon
SES:	Senior Executive Service
SHF:	Super High Frequency
SIGINT:	Signals Intelligence
SINCGARS-V:	Single Channel Ground and Airborne System, VHF
SIOP:	Single Integrated Operational Plan
SLBM:	Submarine-Launched Ballistic Missile
SLCM:	Sea-Launched Cruise Missile
SLEP:	Service Life Extension Program
SLMM:	Submarine-Launched Mobile Mine
SLOC:	Sea Line of Communication
SNM:	Special Nuclear Material
SOSUS:	Sound Ocean Surveillance System
SOTAS:	Standoff Target Acquisition System
SOW:	Standoff Weapon
SRAM:	Short-Range Attack Missile
SRF:	Secure Reserve Force
SSBN:	Ballistic Missile Submarine, Nuclear-powered
SSN:	Submarine, Nuclear-powered
STANAG:	NATO Standardization Agreement
SUBACS:	Submarine Advanced Combat System
SURTASS:	Surveillance Towed Array Sensor System
SVIP:	Secure Voice Improvement Program
T&E:	Test and Evaluation
TAA:	Total Aircraft Authorized
TAC:	Tactical Air Command
TACAMO:	Airborne Strategic Communications System
TACS/TADS:	Tactical Air Control System/Tactical Air Defense System
TACTAS:	Tactical Towed Array Sonar
TAI:	Total Active Inventory
T-AKX:	Commercial Roll-on/Roll-off Ship
TCP:	Tactical Cryptologic Program
TEL:	Transportor-Erector-Launcher
TEMP:	Test and Evaluation Master Plans
TESS:	Tactical Environmental Support System
TIARA:	Tactical Intelligence and Related Activities
TNF:	Theater Nuclear Forces
TOA:	Total Obligational Authority
TRAM:	Target Recognition Attack Multi-Sensor

UHF:	Ultra-High Frequency
UNREP:	Underway Replenishment
URG:	Underway Replenishment Group
USAFE:	United States Air Force Europe
USAREUR:	United States Army Europe
VEAP:	Veterans Education Assistance Program
VHF:	Very High Frequency
VHSIC:	Very High Speed Integrated Circuits
VSTOL:	Vertical/Short Take-off and Landing
WIN:	WWMCCS Intercomputer Network
WIS:	WWMCCS Information Systems
WRS:	War Reserve Stocks
WWMCCS:	Worldwide Military Command and Control System