ANNUAL REPORT
TO
THE CONGRESS

CASPAR W. WEINBERGER
SECRETARY OF DEFENSE

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REPORT OF SECRETARY OF DEFENSE

CASPAR W. WEINBERGER

TO THE CONGRESS

ON THE

FY 1983 BUDGET, FY 1984 AUTHORIZATION REQUEST
AND FY 1983-1987 DEFENSE PROGRAMS

FEBRUARY 8, 1982

THIS REPORT REFLECTS THE FY 1983 DEFENSE BUDGET
AS OF JANUARY 31, 1982

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SOVIET MILITARY POWER

REQUIREMENTS FOR NATIONAL SECURITY

> We know only too well that war comes not when the forces of freedom are strong, but when they are weak. It is then that tyrants are tempted.
>
> -- Ronald Reagan
> (July 16, 1980)

The strength of the United States serves to protect the American people and helps preserve the peace. We need strength to deter attack, to support the cause of freedom, and to work for a peaceful world. But our nation can be strong only if our defense and foreign policies enjoy broad support at home. For it is in the American people that the ultimate strength of the United States resides--in the patriotism and convictions, in the skills and courage of each of us.

Fifteen months ago the American people gave Ronald Reagan the mandate to lead our nation. That mandate emphasized the strengthening of America. It is the President's responsibility, while working ceaselessly for peace, to ensure that the safety of the American people cannot successfully be threatened by anyone. President Reagan has kept his pledge to make this responsibility his first priority.

I am pleased to submit to the Congress and the American people the first Defense Budget for which the Reagan Administration is fully responsible. This report for Fiscal Year 1983 contains my summary of our defense policy, programs, and budget.

First, I must express my deep appreciation to the Congress for the support given to the Department of Defense during the past year. Much has been accomplished in the vital area of our nation's security. Far more remains to be done. To complete the task we have begun, to redress the military balance with the Soviet Union, many years of sustained effort will be needed. I pledge to work with Congress to make sure the burdens the American people assume will bring the fullest measure of security for our country.

A. RESOURCES

It is my primary statutory responsibility to advise the President, the Congress, and the American people of the things we must do to improve our national defense and why we must do them. Serious deficiencies in our military forces have compelled us to break with past thinking and to develop new policies and programs. We must correct the major weaknesses in our defenses that have resulted from a decade of neglect. And we must at the same time look at the decade to come. With the cooperation of this Congress, we will construct a defense that can substantially reduce the dangers we now face, and, at the same time, give us the margin of safety necessary to preserve the peace.

We are requesting $258.0 billion of Total Obligational Authority (TOA) for the Defense Department for this coming fiscal year. Taking FY 1982 TOA as a base, we envision an average real growth rate in the defense budget of 7.4 percent a year over the next four years (Table I.A.1).

TABLE I.A.1

Five-Year Defense Plan

	1982	1983	1984	1985	1986	1987
TOA						
Current Dollars	214.2	258.0	285.5	331.7	367.6	400.8
FY 1983 Dollars	227.8	258.0	269.8	297.8	314.0	325.9
Outlays						
Current Dollars	182.8	215.9	247.0	285.5	324.0	356.0
FY 1983 Dollars	195.4	215.9	233.2	255.6	276.0	288.7
Defense Budget as a Percent of GNP	5.9	6.3	6.5	6.9	7.2	7.4

For the major individual programs a detailed discussion of the reasons which make these increases necessary is, of course, required. But it is equally important to state the broad and fundamental reasons for the increase in the defense budget as a whole, so that Congress can properly weigh the needs of the defense of the nation against the many other demands on the Federal Budget.

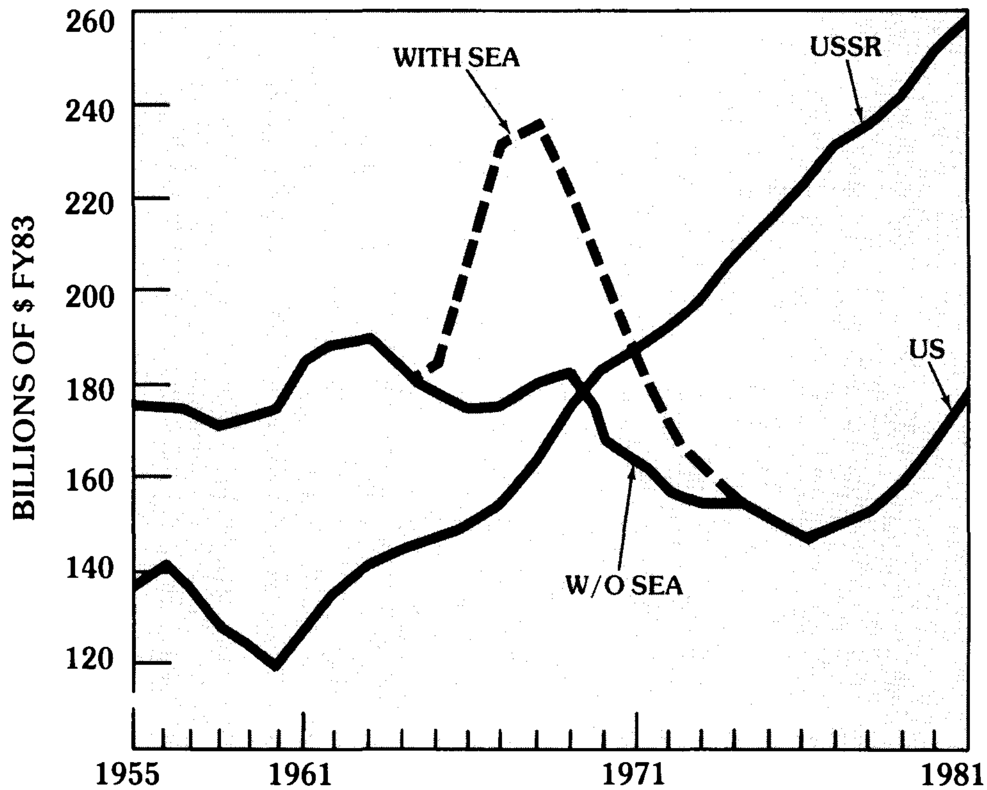
Why must the defense budget be increased as much as we propose?

First, because we must now pay the bill for our collective failure to preserve an adequate balance of military strength during the past decade or two. While our principal adversaries engaged in the greatest buildup of military power seen in modern times, our own investment in forces and weapons continued to decline until very recently. Even now we have yet to match their level of effort, as Chart I.A.1 clearly demonstrates.

Second, because we cannot, in good conscience, increase our reliance on the threat of nuclear weapons to evade the need for restoring our conventional military strength across the board. And we also cannot neglect our strategic deterrent that must prevent the use of these terrible instruments by the enemy. In fact, we must overcome the obsolescence of our strategic nuclear arms and strengthen each part of the Triad.

Chart I.A.1

COMPARISON OF US DEFENSE OUTLAYS WITH ESTIMATED DOLLAR COST OF SOVIET DEFENSE ACTIVITIES



NOTES:

U.S. DEFENSE OUTLAYS INCLUDE NATIONAL SECURITY PROGRAMS FUNDED BY DOD AND DEFENSE RELATED OUTLAYS OF DEPARTMENT OF ENERGY, COAST GUARD, AND SELECTIVE SERVICE AND THEIR SOVIET COUNTERPARTS.

EXCLUDES RETIREMENT, FOREIGN MILITARY SALES AND CIVIL DEFENSE.

Finally, because we cannot offer the American people and our allies a mere facade of security by deploying forces that lack the necessary materiel and training and are not backed up by an adequate mobilization potential.

It is important to note that, for the last three decades, real U.S. defense expenditures remained virtually constant. With the exception of increases in expenditures for the Korean and Vietnam wars, defense outlays fluctuated within a fairly narrow range--between about $150 billion and about $190 billion (in constant FY 1983 dollars). As the economy grew, therefore, the relative investment in defense expenditures diminished.

The constant level of total defense expenditures masks, however, a quite different pattern for our defense equipment and the infrastructure that supports it--the "capital stock" of the nation's defense establishment. The United States emerged from World War II with a very significant "capital stock" for defense. It had, for example, built a fleet of ships so large that it could maintain a Navy of approximately 1,000 vessels in active service until the late 1960s. It had constructed a whole series of defense plants and some of the facilities that were built in World War II are still in use today.

But the typical defense capital asset lasts between 15 and 25 years. Thus, in the 1960s, we should have faced a major requirement for reinvesting in defense if we were to maintain the margin of safety we had enjoyed since the end of World War II. Such a reinvestment program for conventional forces was indeed begun under President Kennedy, but it was interrupted by the Vietnam War. During the 1970s, instead of continuing to reinvest in our defense effort, we decided to retrench substantially. New investment was pursued during the 1970s in selected areas only--for instance, Air Force tactical aircraft. Hence, in most areas we now face a major backlog of investment requirements.

Not only did the relative defense effort of the United States decline but, and with few exceptions, our allies spending rose only gradually. An increase in defense spending throughout our alliances is clearly necessary.

Given the undoubted importance of reducing the rate of growth of the Federal budget and the difficulties caused by reductions in domestic programs, it is important that we be aware of the relative size of our defense expenditures. Our total defense expenditures will still amount to no more than 7.4 percent of GNP in FY 1981, as compared to an average of more than eight percent of GNP during the 1950s and 1960s (Chart I.A.2). And as a percentage of public spending (Federal, state, and local), defense will be relatively low compared with an average of about 30 percent during the 1950s and 1960s (Chart I.A.3). The much published figure of $1.6 trillion for defense within the next five years is still less than the $1.8 trillion now contemplated for social and welfare programs for the same period.

CHART I.A.2

U.S. DEFENSE BUDGET AS A PERCENT OF GROSS NATIONAL PRODUCT, 1940-1981

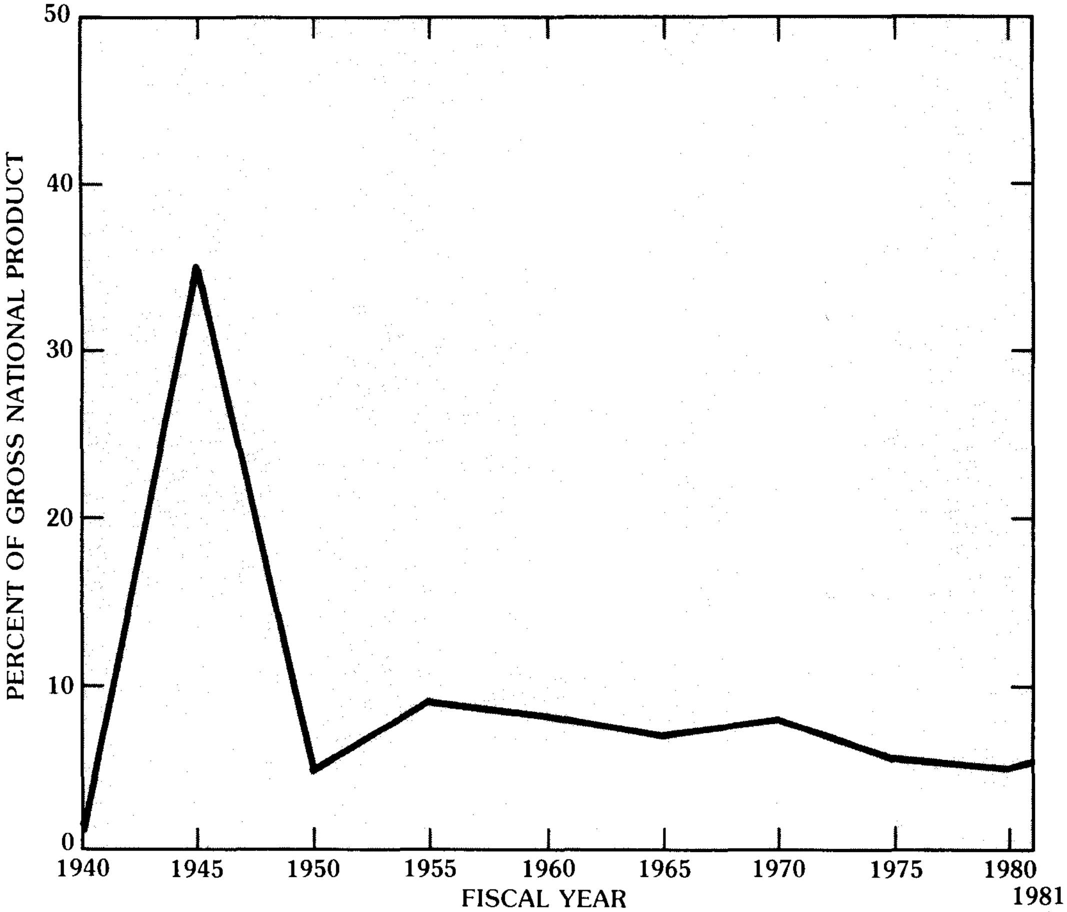
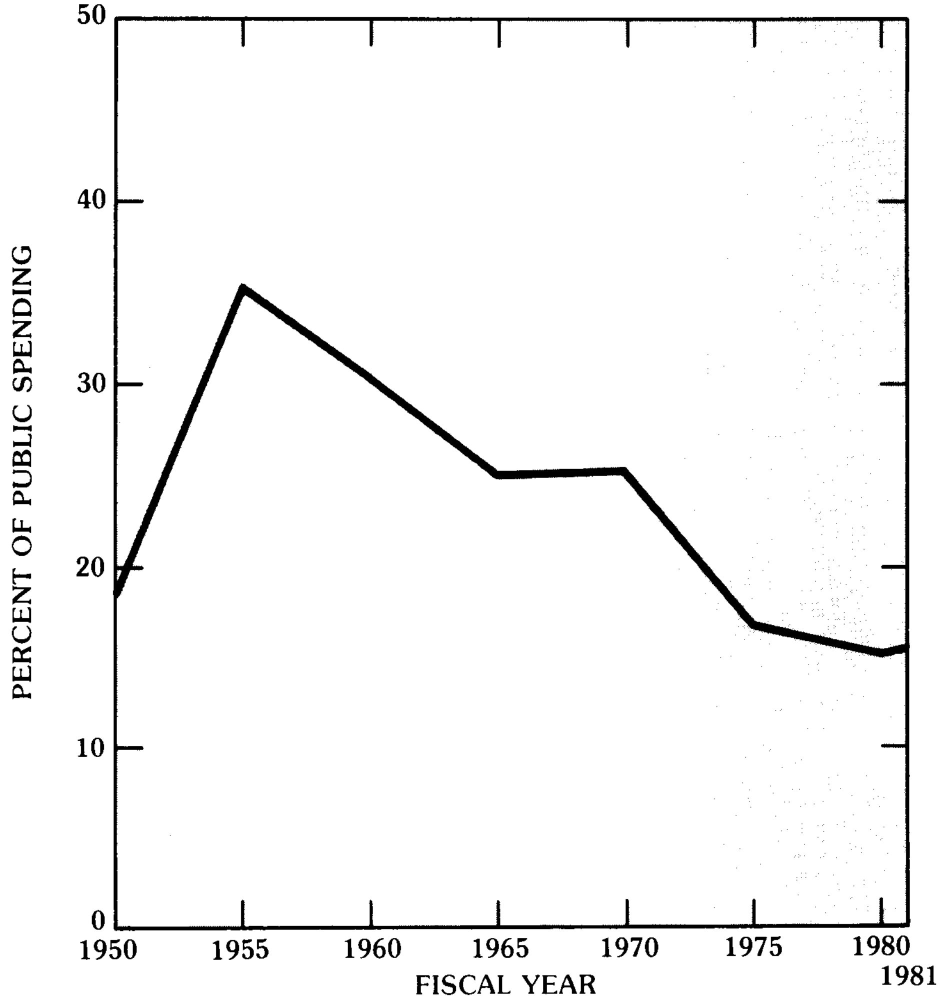


CHART I.A.3

U.S. DEFENSE BUDGET AS A PERCENT OF PUBLIC SPENDING, 1950-1981



Fears that the defense budget of this Administration will strain the American economy are unfounded. In the 1950s and 1960s, when defense spending as a percentage of GNP was much larger than today, annual inflation rates ranged from about one to seven percent. Economic studies have found little difference in the effect of defense and non-defense spending on inflation. Defense spending, like other Federal spending, produces something which contributes to the people's welfare. The very purpose of our economy is to meet the needs of our people. Defense is an urgent need, and we have ample resources to meet it. As British Air Marshall Sir John Slessor put it: "It is customary in democratic countries to deplore expenditure on armaments as conflicting with the requirements of social service. There is a tendency to forget that the most important social service that a government can do for its people is to keep them alive and free."

Yet, while it is essential to allocate greater resources to our defense needs, by itself, even that would not be enough. We must not only spend more money for our security, we must also bring our thinking up to date.

B. POLICY AND STRATEGY

Policy endows our defense effort with purpose. It relates means to ends, but considers neither as unchangeable. Our defense policy must tell us how to reshape the means we inherited so that we can better attain our objectives, and it must help us to define our ends realistically.

To change the forces we inherited takes time; we can alter them only incrementally. Much of our defense budget today must go to support our existing assets: to compensate and provide for the people who make up the Armed Forces and to increase the readiness of existing units and strengthen their ability to sustain themselves in combat. Since we must maintain substantial forces to deter present threats, only about one-third of the defense budget I have submitted to you is left to purchase more, or new arms and other equipment. And it will take several years for these purchases to have an impact on force capabilities. Thus, the means available during the next few years have largely been shaped by past policies and strategies and by past expectations about our adversaries and the threats we will face. We are, to a greater extent than we would like, the prisoners of our immediate past.

1. The Need for Change

Sadly, many of our past expectations have been disappointed. The most fateful disappointment, perhaps, concerns the role that military power continues to play in the world. Expectations were widespread in the West that arms agreements and other understandings--explicit or tacit--would have a universal rather than a unilateral effect on limiting the accumulation of weaponry and restraining the level of military spending, East and West. With the exception of the U.S. build-up related to Vietnam, the United States and its allies gradually reduced the proportion of national income (i.e., GDP and GNP) devoted to defense during the mid and late 1950s and 1960s. However, the Soviets continued to amass force without slackening; and, they have already exploited their growing power in several areas of the world.

The Soviets have used proxy military force in Angola and Ethiopia and they have used their own military forces for the invasion and continuing occupation of Afghanistan. We have learned once again that even when our adversaries do not actually fire weapons, they can exploit a preponderance of military power. They can coerce by threatening--implicitly or explicitly--to apply military force--as in Poland. In this way, they can continue to hold captive populations that clearly want to be free. And given the opportunity--for example, in Iran--they might seek to expand their imperial reach.

A second and related Western expectation that was disappointed had to do with the West's long-term reliance on a continuing American advantage in nuclear weapons to offset the Soviets' advantage in conventional arms in the center of Europe. When the Soviets failed in their attempt to change the nuclear balance by placing missiles in Cuba, many in the United States expected that they would not make the effort to challenge our strategic advantage. But they did make the effort. By the late 1970s, we had cut our strategic spending (in constant dollars) to one-third of what it had been during many years prior to the early 1960s, while the Soviets tripled their strategic spending since the early 1960s.

Just as the level of resources that we devote to defense has become inadequate, so has our intellectual approach been overtaken by events. Indeed, our defense policy has not only become obsolete because of new threats to our security, it has also been discredited by its failure to recognize and cope with the deterioration in the global military situation. In fact, obsolete strategic concepts have stood in the way of necessary reforms. Hence, we have to break with some past thinking and develop new policy and concepts.

The first change needed in our thinking, then, is a clear recognition that we face adversaries with serious long-term goals incompatible with our own and that we must, therefore, undertake a sustained effort to increase the ability of the United States and our allies to protect our common interests and to deter the use of force.

Even though it is essential that we reform our defense policy, one must not regard this reform as a substitute for an increased defense effort. The adoption of new ideas and thinking is sometimes presented as an alternative to sustained growth in the defense budget. It is not. Part of the needed reform in strategic thinking is precisely the new realization that we must devote more resources to defense.

In stressing the importance of change, however, I do not wish to belittle the substantial continuities in our strategic objectives and approach. The United States remains committed to a defensive use of military strength; our objective is to deter aggression or to respond to it should deterrence fail, not to initiate warfare or "preemptive" attacks. In tactics it is often said, the offensive is the best; but the defense policy of the United States must remain strictly defensive. This stance has been fundamental to U.S. national strategy since World War II, indeed even before then. From this premise it flows that our military forces must be prepared to react after the enemy has seized the first initiative and react so strongly that our counter attacks will inflict unacceptably high cost on the enemy--a requirement that puts a heavy burden on our readiness and intelligence capability. A defensive strategy must be responsive to the particular threats presented by our potential enemies; in other words, we must adapt our forces and our tactics to the magnitude and character of the threats as they evolve over time.

Another fundamental continuity in our defense strategy is the importance of U.S. commitments to allies and the tradition of military cooperation within an alliance framework, especially within NATO. The necessary recasting of our strategy must, as far as possible, evolve in close cooperation with our allies. The contributions of each ally to the common defense will, of course, be changing over time. It is clear that to achieve greater equity among the burdens imposed on the economies and taxpayers of each nation and greater safety for us all, several of our allies will have to assume a larger share.

2. Warning and Mobilization in a Defensive Policy

Given the long established and broad agreement that the United States and its allies are committed to a defensive use of military strength, one would expect that the most essential requirement of such a policy--preparedness to respond to warning and to mobilize--would always have been accorded top priority. Yet I found that much more should have been done and now, must be done.

Four tasks, I decided, had to be undertaken with a high sense of urgency. First, we needed to make more realistic the manner in which our forces respond to warning. Second, we had to increase substantially programs to improve the steady-state of readiness of our forces. Third, we had to enhance our preparations for military mobilization--that is, the arrangements and prior training needed quickly to mobilize, assemble, and deploy our forces. Fourth, we had to repair the national capacity to expand defense production rapidly during a crisis.

Our forces and those of our allies will, of course, be better able to cope with an armed attack if we alert them in response to warning and bring them to a higher state of readiness before the enemy strikes. Indeed, major aspects of our deployments and military planning are based precisely on the assumption that we can exploit warning of an enemy attack. A clear example is the NATO plan to reinforce U.S. strength in Europe, in response to warning of an enemy attack. A clear example is the NATO plan to reinforce U.S. strength in Europe, in response to warning of an impending Warsaw Pact attack, by airlifting troops and having their heavy equipment prepositioned in Europe.

To carry out a timely response to warning, however, two conditions must be met: we must not only receive warning, but also take the decision to respond. The first task has long been recognized; it calls for strong intelligence capabilities. It is the second task that has been neglected or misunderstood. We cannot assume that the enemy, if he actually plans to attack, will necessarily do us the favor of furnishing warning that is unambiguous. Military history reminds us that we ought to expect a massive and skillful effort at deception.

It is sobering to recall how often elaborate warning systems failed to trigger the needed decisions to prepare against surprise attack. The Soviet Union failed to anticipate the German attack in 1941; the Soviets, in turn, surprised the Japanese in 1945. Despite the lesson of Pearl Harbor, we were caught unprepared again in June 1950 by the North Koreans. The Israelis achieved surprise in 1967, only to fall victim to surprise in 1973. It seems likely that skillful deception could deprive us of clear warning. Indeed, Soviet military doctrine puts great emphasis on deception and surprise.

Hence, we have to change our policy for reacting to warning. Our forces and those of our allies must be prepared to respond to warning indicators that are highly ambiguous. These responses must be such that they can be decided upon quickly, sustained--if necessary, for a prolonged period--until the ambiguity is resolved, and repeated every time the warning indicators demand it. Our response to ambiguous warning ought to reduce vulnerabilities and the maldeployment of forces and improve our forward defense. A policy that provides for such responses, as a routine procedure, can help to avert crises and strengthen deterrence. By contrast, being prepared to respond only to warning that is unambiguous means being prepared for the kind of warning we are least likely to get.

By improving our ability to respond to ambiguous warning, we would substantially improve the deterrent value of our forces and their ability to cope with an attack. This is a measure we can take quickly and--an added attraction--at a very small budgetary cost. Hence, we have launched several projects to improve responsiveness to ambiguous warning. Last spring, for example, I requested our NATO Allies to join us in a study of responses to ambiguous warning. As the results of this effort become part of NATO's readiness posture, the deterrent strength of the Alliance should improve substantially.

Yet the most timely and energetic response to warning will not help us much unless our military forces are continuously maintained at a appropriate state of readiness. The prolonged stringency in our defense budget has led to an underfunding of the very things that determine the readiness of our Armed Forces--adequate manning and training, maintenance, supplies of spare parts, fuel, and ammunition. These needs, therefore, were accorded priority in the allocation of the defense budget.

As Secretary of Defense, I cannot confine my attention to the long-term recovery of our military strength --important as the sustained effort to build up our forces is. I am responsible to the President and to the nation for our security here and now, for a crisis that might come tomorrow. Improvements in readiness--apart from being essential for a strategy that is defensive--have the advantage that they can be realized soon. This need for quick improvement also inspired some of our decisions on the acquisition and reactivation of weapon systems. For example, the reactivated IOWA-class battleships, equipped with modern cruise missiles and electronics, and the deployment of cruise missiles on attack submarines, are quick ways to get more naval power to sea, at far less cost than building new ships of comparable power.

Preparations for large-scale military mobilization complement our policy of responding to ambiguous warning. Our existing military assets--personnel, arms, equipment, and supplies--would have to be assembled and deployed to the arena of threat or conflict. This requires planning and organization--and time. The faster we can marshal the men and their equipment and move them from the assembly points to where they are needed, the better prepared we are. What is needed are exercises and up-to-date planning. These too are low-cost measures that can go a long way to strengthen the deterrent effect of our forces.

Distinct from these preparations for military mobilization are the efforts we have initiated to repair our capacity rapidly to expand defense production. Our historic experience suggests that a major and acute crisis, threatening our national security, is likely to lead to a decision massively to expand our defense effort. For example, upon the outbreak of the Korean War, Congress decided on a three-fold increase in our defense budget, raising the level of defense spending to 13 percent of the Gross National Product. (The World War II peak was 45 percent.) But we would be complacent to assume that we could readily call on American industry today to accomplish comparable feats in expanding defense production. During the last 20 years, the capacity of our industry to respond to a new defense emergency has greatly deteriorated.

The improvements in the acquisition process that we instituted last year will help strengthen our defense industry. But more needs to be done. We are developing administrative and legal procedures for rapid industrial mobilization and are supporting the production of "long-lead" items and making other preparations to create the capacity for a surge in the production of certain weapons systems. These efforts will be coordinated with other government agencies through the Emergency Mobilization Preparedness Board, which the President established last December.

Restoring our capacity for expanding defense production is of very great strategic importance. This capacity helps to deter precisely the aggressive moves that might lead to such an expansion, and it plays a critical role in our policy for a conventional war.

3. <u>Conventional Warfare</u>

Our conventional forces must be designed for many different contingencies to cope with a wide range of threats. It is our aim to direct the development and improvement of our forces so as to create a better balance in meeting the different strategic requirements for U.S. conventional strength.

For many years, it has been U.S. policy to let the investment and planning for our conventional forces be determined primarily by the requirement for fighting a war centered in Europe, and in which NATO forces would be attacked by the Warsaw Pact. This emphasis recognized that Soviet military forces were concentrated in Central Europe. Preoccupation with the need to be strong in the center led to the mistaken assumption that if the Alliance could meet this largest threat, it could meet lesser ones.

In recent years, however, it has become increasingly clear that the members of the Alliance in the northern, center, and southern regions are bound together as one and critically depend on each other and even outside the NATO treaty boundaries--notably the Persian Gulf. At the same time, the Soviet Union has been greatly increasing its ability to exploit political instability and to project military power into precisely such areas.

The strategy we have been developing seeks to defend Alliance interests in such other regions. For the region of the Persian Gulf, in particular, our strategy is based on the concept that the prospect of combat with the U.S. and other friendly forces, coupled with the prospect that we might carry the war to other arenas, is the most effective deterrent to Soviet aggression. This strategy, thus, has two dimensions. First, we must have a capability rapidly to deploy enough force to hold key positions, and we must be able to interdict and blunt a Soviet attack. It is the purpose of this capability to convince enemy planners that they cannot count on seizing control of a vital area before our forces are in place, and that they cannot therefore confront us with an accomplished fact which would deter our intervention. Second, this strategy recognizes that we have options for fighting on other fronts and for building up allied strength that would lead to consequences unacceptable to the Soviet Union.

We are taking several actions to improve the ratio between the forces that the United States and the Soviet Union could bring to bear. The Soviets can use their interior lines of communication to change rapidly the front at which they might concentrate their forces for power projection. They can, for example, rapidly move airborne forces and air forces on their periphery and they can shift BACKFIRE bombers to attack our fleets more rapidly than we can shift aircraft carriers between widely separated sea regions near the Soviet Union. We, however, can offset such moves if we make better use of U.S. and allied air, land, and sea forces and facilities; in particular, if we exploit the additional strengths these forces and their versatility bring to our allied total.

To this end, among other things, we are strengthening the interactions of surface naval forces with land-based airborne early warning and control aircraft and with land-based tactical aircraft. The added and more reliable warning time made possible by our Airborne Warning and Control System (AWACS), for example, can greatly increase the effectiveness of our deck launched interceptors, and the land-based tactical aircraft which might be used to protect the AWACS plane could also help defeat an incoming bomber raid. With appropriate plans and infrastructure, U.S. and allied land-based air can be moved swiftly and could even be moved in peacetime in response to ambiguous warning.

What is more, we can exploit more effectively the versatility of these forces, especially in strategically inter-connected areas.

If we had to deal with these threats without the complementary development of allied and other friendly nations' forces and facilities, we could only do so, if at all, at much greater cost. Security assistance, therefore, must play a large role in our evolving strategy. It is more important today because U.S. interests are threatened now in places that were less critical and better protected in times past.

This Administration has accordingly sought to strengthen our security assistance to allied and friendly nations. I see such assistance as serving both to support the complementary roles of U.S. and allied forces and to enhance the availability of overseas facilities we need to meet the increasingly widespread threats. Some of the essential forces and facilities are owned by allies and friends who cannot fund the desired force improvements on their own.

A necessary step for the intellectual reform of our policy regarding conventional warfare is to discard artificial definitions and contrived categories--habits of mind that obscure rather than clarify reality. I have already stressed the importance of realistic warning assumptions--that to plan for unambiguous warning is to plan for the type of warning that we are least likely to get.

Another case in point is the mistaken argument as to whether we should prepare to fight "two wars," "one and a half wars," or some other such tally of wars. Such mechanistic assumptions neglect both the risks and the opportunities that we might confront. We may be forced to cope with Soviet aggression, or Soviet-backed aggression, on several fronts. But even if the enemy attacked at only one place, <u>we</u> might choose not to restrict ourselves to meeting aggression on its own immediate front. We might decide to stretch our capabilities, to engage the enemy in many places, or to concentrate our forces and military assets in a few of the most critical arenas. The geographic distribution of our assets must be guided by the prospects for protecting our vital interests and winning the war. We cannot settle this question in advance by defining the risk we confront as "one war" or a "war and a half." Moreover, the decision on how large our overall defense effort ought to be must be based on much broader and more fundamental judgments than some arbitrary and facile assumption about the number of "wars," or fronts, that we must be prepared for.

Another confusion in thinking to be avoided is the transposition of the defensive orientation of our peacetime strategy onto the strategy and tactics that should guide us in the event of war. A wartime strategy that confronts the enemy, were he to attack, with the risk of our counteroffensive against his vulnerable points strengthens deterrence and serves the defensive peacetime strategy. This does not mean that any allied offensive, using any means whatsoever and at any place other than the point attacked, would serve our purpose. Our counteroffensives should be directed at places where we can affect the outcome of the war. If it is to offset the enemy's attack, it should be launched against territory or assets that are of an importance to him comparable to the ones he is attacking.

Some important Soviet vulnerabilities have to do with the fact that the Soviet empire, unlike our alliance, is not a voluntary association of democratic nations. Thirty-seven years after free elections were promised at Yalta, the imposition of martial law in Poland makes clear how such elections would turn out if they were permitted. Our plans for counteroffensive in war can take account of such vulnerabilities on the Soviet side.

Strategic planning for counteroffensives is not provocative. It is likely to increase the caution of the Soviet leaders in deciding on aggression, because they will understand that if they unleash a conventional war, they are placing a wide range of their assets--both military and political--at risk.

Another fallacy in recent defense policy regarding conventional warfare has been the "short war" assumption--the notion that in planning our strategy and designing our forces we could rely on the assumption that a conventional war would be of short duration. Common sense and past experience tell us otherwise. I have therefore instituted changes in our defense policy to correct this fallacy.

It goes without saying that, should our policy to deter aggression fail and a conventional conflict be forced upon us, the United States would bend every effort to win the war as quickly as possible. The two wars in which the United States has fought since the beginning of the nuclear era, however, were both of long duration. Unless we are so strong, or our enemy so weak that we could quickly achieve victory, we cannot count on a war ending within a few months.

The essential purpose of our conventional warfare policy is to prevent war by deterring aggression. Deterrence would be weakened if the enemy were misled to believe that he could easily outlast us in a conventional war. In particular, for a vulnerable and vital region like Southwest Asia, a U.S. strategy that promised our adversaries a "short war" could be an invitation to aggression. If we were unprepared to sustain the conflict, the adversary might expect we would have to seek a truce by conceding vital territory to his control.

The efforts that I have initiated to overcome the "short war" fallacy--improved sustainability for U.S. forces, a strengthened capability to expand defense production, and appropriate changes in strategy and tactics--are essential to reduce the likelihood of war. They are essential, in particular, for vulnerable regions protected neither by the presence of U.S. forces nor by an explicit nuclear guarantee. But they can also help buttress NATO's strategy of flexible response and the U.S. nuclear guarantee in behalf of the integrity of the Atlantic Alliance.

4. Nuclear Strategy

It is by intention that I have not treated nuclear strategy until now, except tangentially. This Administration does not regard nuclear strength as a substitute for conventional strength. However, it does place the highest priority on the long overdo modernization of our strategic forces. While this modernization program is not designed to achieve nuclear "superiority" for the United States, by the same token, we will make every necessary effort to prevent the Soviet Union from acquiring such superiority and to insure the margin of safety necessary for our security.

The United States will maintain a strategic nuclear force posture such that, in a crisis, the Soviets will have no incentive to initiate a nuclear attack on the United States or our allies. U.S. forces will be capable under all conditions of war initiation to survive a Soviet first strike and retaliate in a way that permits the United States to achieve its objectives. Nuclear weapons systems will not be funded merely to make our forces mirror Soviet forces according to some superficial tally of missiles or aircraft deployed in peacetime. Obtaining a facade of symmetry between U.S. and Soviet forces in terms of such simplistic counts is not a requirement for which I would allocate scarce defense dollars. Instead, our goal will be to gain and maintain a nuclear deterrent force which provides us an adequate margin of safety with emphasis on enduring survivability.

At present we spend some 85 percent of our total defense budget on non-nuclear forces, and that accurately reflects our priorities. Non-nuclear capabilities would, in fact, receive an even higher priority in our budget had it not been for the fact that this Administration must cope with the severe inadequacies it inherited in the realm of strategic and other nuclear weapons.

President Reagan's decision last year on the modernization of major nuclear forces was based on a long-term view. The President had to choose not just one new weapon system, but all the major components of our strategic forces at the same time. These choices are likely to shape our overall strategic capability well into the next century. Strategic weapon systems, once deployed, tend to be part of our forces for many years. (The MINUTEMAN system for missile basing was determined more than 20 years ago; the mainstay of our present bomber force, the B-52, was chosen some 30 years ago.) The President recognized that his decisions on new strategic forces would predetermine, to a large extent, the strategic policies that the United States can adopt for years to come. Thus, the magnitude and scope of his decisions were almost unprecedented in the nuclear era. The only comparable review of strategic force needs and across-the-board decisions occurred in 1955, when President Eisenhower decided on the development of ICBM and IRBM forces and on systems for bomber basing and air defense.

The fact that this Administration had to decide how to replace or expand all the major elements of our strategic forces--bombers, ICBMs, SLBMs, and communications systems--was not without advantage. It permitted us to shape our strategic nuclear force as a coherent instrument responsive to national policy and to eliminate some dangerous contradictions between the capabilities of our nuclear forces and the objectives of our policy.

We recognized that, for the foreseeable future, our nuclear forces had to serve at least the following four purposes; (1) to deter nuclear attack on the United States or its allies; (2) to help deter major conventional attack against U.S. forces and our allies, especially in NATO; (3) to impose termination of a major war--on terms favorable to the United States and our allies--even if nuclear weapons have been used--and in particular to deter escalation in the level of hostilities; and (4) to negate possible Soviet nuclear blackmail against the United States or our allies.

The further spread of nuclear weapons would pose different security threats and risks depending on the industrial and technological capabilities of the proliferating nation. The development and testing of nuclear weapons by an advanced nation with near-term missile capability could have a significant impact on the global strategic situation. This could cause an alteration in US strategic planning and threat assessments. Nuclear weapons proliferation in less advanced nations would have a regional impact that could affect the ability of the US to influence developments in the region. The development of nuclear weapons by less advanced nations is unlikely to change the basic missions of our strategic forces at least through the end of this century.

It is the purpose of our nuclear forces and strategy to prevent nuclear attack in all possible contexts and from all possible causes. We can never neglect the risk of a surprise attack "out of the blue;" a risk that imposes severe requirements on the survivability of our retaliatory forces and our supporting of command, control, and communications systems. However, we also must be prepared to strengthen nuclear deterrence during a period of heightened danger, in particular during a conventional war. In such a crisis, we can decrease the vulnerability of our strategic forces through increased readiness, dispersal, airborne alert, and other measures.

I feel it is important to guard against a narrow view of the dangers of nuclear war. Given the long lifetime of strategic systems, the full sweep of technological change that they may encounter cannot be predicted. Such a time period, moreover, may also bring major geopolitical change. But above all, the unpredictable dynamics of nuclear war, the unforeseeable interaction of attacks and counterattacks, in all their ramifications, confront us--and Soviet planners--with vast uncertainties.

In particular, we need always to be mindful of the danger of accidents and unanticipated failures, both human and technical. Nuclear systems and procedures, therefore, must be as safe as we can make them. The care and emphasis bestowed on making our nuclear posture safer is a leading feature of President Reagan's force program that may not have been sufficiently appreciated.

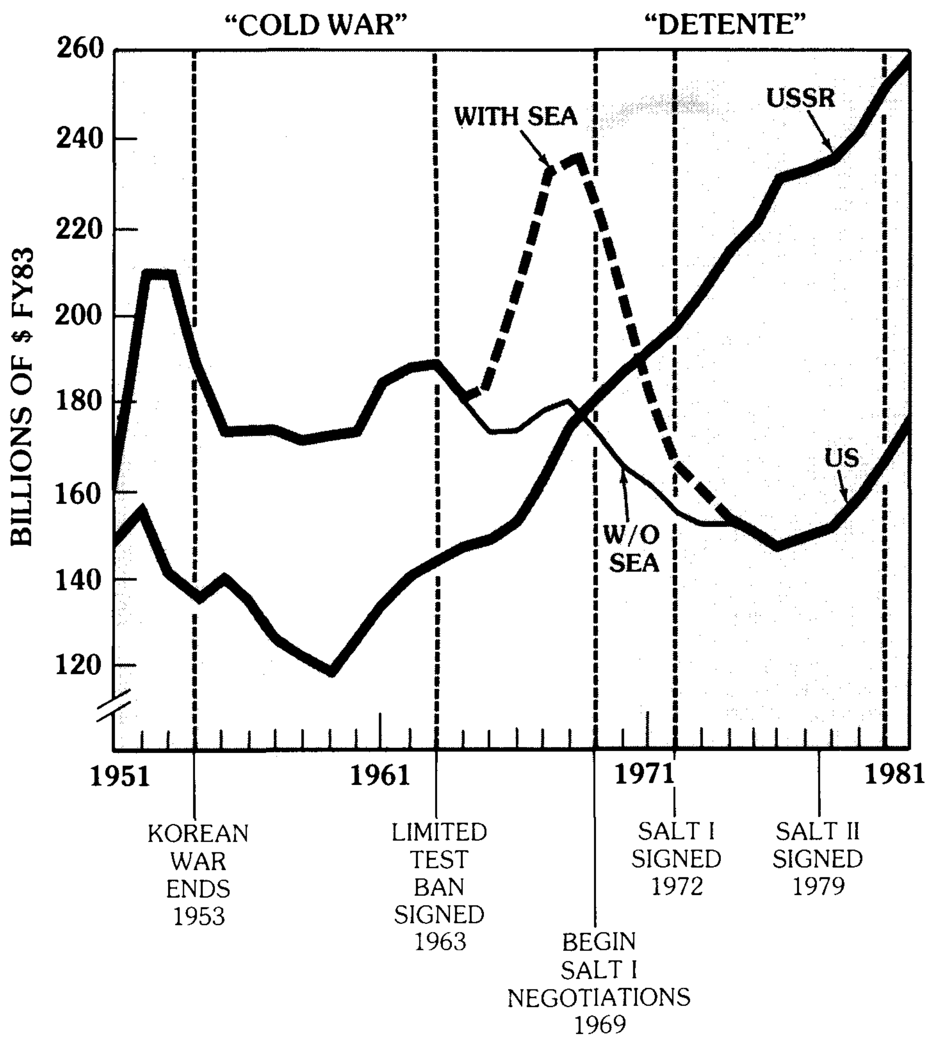
5. Arms Control

A melancholy chapter in the troubled history of the last decade or two is that on arms control. Early in the 1960s, after many years of fruitless negotiations, the United States seemed to have reason for high hopes. The Limited Nuclear Test Ban Treaty of 1963 seemed to offer the imminent prospect of a much broader U.S.-Soviet understanding on nuclear arms that would slow down and eventually halt the nuclear competition and make the deterrent forces of both sides more stable and secure. Today, we have come to recognize the full extent of our disappointment. Despite the agreements we negotiated, the Soviet Union steadily increased its investment in nuclear strategic forces even though we reduced ours. Our land-based deterrent forces have become highly vulnerable even though one of our main purposes in SALT was to prevent such vulnerability. And Soviet nuclear offensive capabilities now exceed by far our most pessimistic forecasts of 15 years ago, when we estimated what might happen should our SALT efforts fail--as indeed they have.

Indeed, as Chart I.B.1 shows, not just in the nuclear domain, but in military expenditures as a whole, the trends during the "cold war" and "detente" were quite different from what one would expect.

CHART I.B.1

US DEFENSE OUTLAYS AND ESTIMATED DOLLAR COST OF SOVIET DEFENSE ACTIVITIES DURING THE "COLD WAR" AND "DETENTE" PERIODS



Recently, a set of facts has come to light that creates a most serious problem for any new arms agreement with the Soviet Union.

The United States now has many good reasons for believing that the Soviet Union has violated the Biological Weapons Convention--an arms control treaty negotiated, signed, and ratified when the illusions of "detente" were most prevalent. We have evidence of an inadvertent release of anthrax bacteria from a highly secured military installation in the Soviet city of Sverdlovsk during the spring of 1979. This incident points strongly, we believe, to biological warfare activities in the Soviet Union that exceed those allowed under the treaty for protective purposes. We regard the explanation provided by the Soviet government--that the outbreak of anthrax was due to natural causes--as inconsistent with our analysis of the evidence.

In addition to the Sverdlovsk incident, the United States and other nations have evidence of the use of lethal chemical and toxin weapons by Soviet and Soviet-supported forces in Laos, Kampuchea, and Afghanistan. Lethal toxins have been identified in samples from Kampuchea and Laos. Trichothecene toxins are not known to occur naturally in Southeast Asia at levels found in the samples and are substances whose use in war is clearly prohibited under the 1925 Geneva Protocol and the Biological Weapons Convention.

This accumulation of evidence, from many different sources and witnesses, raises a wrenching question for future arms control agreements. Our past approach to verification often relied on the theory that the Soviets would not risk violating isolated arms control provisions that were hard to verify, since there would always be some risk of detection, and to be caught would have damaging political consequences for them. In particular, this theory assumed there would be a vigorous condemnation by world opinion and a strong response by many governments. What is now left of the validity of this theory?

Our approach to arms control should be that we negotiate to achieve agreements that diminish the risks of war and help reduce the threat to our security and the security of our allies. Cosmetic agreements--those that would merely legitimize a further buildup of Soviet military power--are not in our national interest. When serious opportunities arise to negotiate agreements that significantly reduce the present level of armaments in a fair, balanced, and verifiable manner, we should pursue them vigorously. President Reagan's historic offer to terminate our plan to deploy cruise and PERSHING II missiles in Europe if the Soviets will dismantle their SS-20, SS-4, and SS-5 missiles and limit other missiles that could substitute for them is the sort of arms control proposal that meets these criteria. We shall work hard to gain its acceptance.

This Administration recognizes that genuine and mutual understandings for the control and reduction of armaments can make a major contribution to our security and to world peace. We are committed to seeking balanced and verifiable arms control agreements which result in substantial reductions in nuclear arms. The serious present difficulties will not deflect us from this long-term goal.

6. The Foundation for Long-Term Improvement

For the long term our prospects are bright, provided we take prudent advantage of the great assets of the Free World--the resilience of democratic nations, the productivity and innovativeness of capitalism, the vigor of free societies. As President Reagan said, "the West won't contain Communism, it will transcend Communism." To transcend in peaceful competition, the United States and our allies need a long-term strategy that will build on our strengths with determination and persistence. With equal determination and persistence, this strategy must ensure that the weaknesses of our adversaries have their full impact.

The peaceful competition--in economic productivity and scientific creativity, in social progress and cultural achievement--is all in our favor. The only domain in which Soviet communism has not proved to be a failure is the practice of military imperialism. In this domain, the Soviet Union has steadily moved ahead. It has conducted, and is still conducting, the biggest military buildup of modern times. It has expanded, and is still expanding, its imperial reach by establishing or consolidating military outposts throughout the world--in the Middle East, Africa, Indochina, and elsewhere. If the Soviet military buildup continues unabated, if Soviet imperial expansion is not reversed, if the Soviets see themselves steadily and easily gaining in military strength, our ability to deter aggression will be inexorably weakened. Moreover, the Soviet incentive for arms control would vanish.

For the natural strength of free societies to prevail in the long run, our defense strategy must do two things. First, it must bring to a halt the further expansion and consolidation of the Soviet military empire, whether this expansion would proceed through direct Soviet military intervention (as in Afghanistan) or through less direct intervention (as in Angola, Nicaragua, and elsewhere). Second, our strategy must see to it that the productivity and technological creativity of free societies are not exploited to make good the chronic deficiencies of the communist system.

If the economy of the Soviet empire is propped up by Western credits, the Soviet Union is enabled to divert more of its resources to its military buildup. If the Soviet Union earns foreign currency by exporting raw materials to our allies, it can purchase more equipment to facilitate its arms production and give more to its client states. If it continues to obtain advanced technology from the West, it can later threaten us with the advanced weaponry.

Soviet trade with the United States and its allies amounts to some two percent of its national product. It is nevertheless critically important for the Soviet system, since a major weakness of the centrally-planned economy is its slow rate of innovation. Without constant infusions of advanced technology from the West, the Soviet industrial base would experience a cumulative obsolescence, which would eventually also constrain the military industries. The Soviet leaders must know full well by now that their central planning system is fatally flawed. But their system cannot be reformed without liberalizing Soviet society as a whole. Hence, without access to advanced technology from the West, the Soviet leadership would be forced to choose between its military-industrial priorities and the preservation of a tightly-controlled political system. By allowing access to a wide range of advanced technologies, we enable the Soviet leadership to evade that dilemma.

Thus, the infusion of new technology from the West helps preserve the Soviet Union as a totalitarian dictatorship. And, of course, if the Soviet Union were less totalitarian, it would also be less of a military threat, since a less controlled and more liberalized regime could not possibly allocate so much of the nation's resources to military expenditures.

One reason sometimes cited for trading with the Soviet Union is the possibility of gaining political concessions from the Soviet leadership in exchange for the technologies and commodities that it needs from the West. Although there is seemingly an ample opportunity to do that, many in the West decry _any_ "linkage." Indeed in a reversal that is a testimony to the degree of our past blindness to reality, it is the Soviets who do the manipulating--and with considerable success--in spite of their inherently weak bargaining position. In fact, the Soviet Union has brought into existence powerful interests in the West which now press for even more generous trade policies toward the Soviet Union.

In the nuclear age, more than in any other period in human history, military strategy must be the servant of national policy, a policy that is the ultimate trustee of the nation's interests. But to paraphrase Clausewitz, policy cannot make demands on military strategy which strategy cannot fulfill. I have the responsibility as Secretary of Defense to tell you that, in my view, no defense policy, no strategy, could succeed in the long run unless we pay close attention to the foundations for military strength. We must pursue a policy that ensures that our resources will not be diverted to strengthen our adversary but instead fully serve the cause of freedom. I must also remind you that whatever strengthens the Soviet Union now, weakens the cause of freedom in the world.

C. MAJOR INITIATIVES

Over the past year, we have taken major initiatives in six broad areas:

- -- The heart and soul of any military force are people. We found pressing needs in this area--to improve our ability to recruit and retain the high quality men and women we need in uniform today.

- -- Given the world as it is, we must be ready to fight on short notice in a variety of places around the globe, and to carry on the fight until it is won. This means enhancing the readiness, mobility, and sustainability of our forces.

- -- At the same time, we must move forward more vigorously than before to expand and modernize our forces to meet the increasing demands we face.

- -- We cannot do all of this alone, so we must encourage our allies and friends to do more in the common defense.

- -- While addressing these critical problems, we could not ignore a whole set of pending decisions regarding strategic nuclear forces, some of which were long overdue.

- -- Throughout all of this, we are determined to spend the taxpayer's money as efficiently and effectively as possible, which led us to a major overhaul and tightening of DoD management systems and the way we do our business.

1. The Importance of People

No military force, no matter how sophisticated its equipment, will be any better than its people. Unfortunately, during the last few years not enough attention has been paid to the people in our armed forces--to their needs, their problems, their aspirations. The consequences of this neglect were predictable: the size of the Armed Services declined, the quality of accessions fell off sharply, and retention dropped substantially. There were many who took these facts as evidence that the All Volunteer Force had failed. But it was the implementation that was flawed; not the concept.

President Reagan's program for rebuilding our military strength has accorded top priority, therefore, to the men and women of our Armed Forces. This Administration is committed to making the All Volunteer Force a success.

Working together with the Congress, we have taken a number of steps to remedy past neglect and the results of last year make us confident that we are on the right track. Although our efforts have just begun, we can already observe genuine improvements. For the first time in over a decade, force size is beginning to increase: the end strength of the Active and Selected Reserve grew by 80,000 in FY 1981 alone. And we plan to continue to make increases of this magnitude each year through FY 1987 so that we can meet our worldwide military needs.

a. Recruiting

In FY 1981, for the first time since the FY 1976 each of the four Military Services met or exceeded its enlisted recruiting target. Overall, the Department of Defense recruited more than 327,000 new enlistees in FY 1981--101 percent of its goal. Dramatic improvements were achieved during the year in the levels of education and competence of the new recruits. DoD recruited nearly 265,000 high school graduates in FY 1981, up 9 percent from FY 1980. In addition, recruits with high school diplomas comprised 81 percent of all new recruits during the year, compared to only 68 percent in FY 1980. Even the Army, which has historically had the most difficult time attracting well-qualified individuals, recruited 80 percent high school graduates in FY 1981, compared to only 54 percent in FY 1980. The proportion of new enlistees scoring in the lowest acceptable range on the entrance examination dropped to 18 percent in FY 1981 from the FY 1980 level of 31 percent.

In spite of these successes, we still have a long way to go. It will take the Services several successive good recruiting years to make up for past shortfalls. Moreover, recruiting will become more difficult in the next few years as Congressionally-imposed quality constraints force us to narrow our recruiting base further in FY 1982, and even more in FY 1983. Unless we obtain some relief from these constraints, by FY 1983 we will be forced to recruit 80 percent of our recruits from 70 percent of the youth population. Anticipated improvements in the economy and a continuing decline in the youth population will compound the difficulty of recruiting. However, if military service continues to be regarded by the American people as a worthwhile profession, and if Congress maintains pay and benefits at the present competitive levels, we are confident that we can meet the need for increased military manpower, and that our Armed Services will continue to increase in quality. Both as Secretary of Defense and Chairman of the President's Military Manpower Task Force, I will do my best to ensure that this occurs.

b. Retention

Current reenlistment rates are among the highest ever experienced by the U.S. Armed Forces. First-term reenlistment in FY 1981 climbed to an all-time high of 43 percent, compared to only 39 percent in FY 1980. Reenlistment among career personnel increased from 70 to 86 percent from FY 1980 to FY 1981, registering a gain for the second consecutive year. As a result of these increases in retention, the experience mix of the U.S. military continues to improve. Currently, the proportion of our active duty enlisted personnel who have five years or more of military experience is 43 percent, compared to approximately 39 percent at the inception of the All Volunteer Force.

Maintaining good retention rates is one of the keys to increasing our force strength. Here, too, we must maintain the momentum of FY 1981 for several years in order to make up for the lean years of the late 1970s. When we lose a middle grade Noncommissioned Officer or Petty Officer, the effect on the force is substantial. Not only do we lose his or her experience, but we must increase the number of recruits by a factor of three or four in order to replace the career person.

c. Compensation

The movement toward reestablishing adequate levels of compensation for our military personnel was important in the success of the All Volunteer Force in FY 1981.

Since the All Volunteer Force began in 1973, military compensation had eroded significantly in comparison to other sectors of our economy. Beginning with the Nunn-Warner Bill in late FY 1980 and continuing through FY 1982, it has been restored to more favorable levels through several initiatives of this Administration and the Congress. In September 1980, the Nunn-Warner Bill established payment of a variable housing allowance, increased basic allowance for subsistence rates by 10 percent, enhanced permanent change of station travel reimbursements, increased flight pay by 25 percent, and increased sea pay rates by 15 percent.

The FY 1981 Department of Defense Authorization Act provided an 11.7 percent pay raise for all military personnel, increased per diem rates and enlistment and reenlistment bonuses, extended reenlistment bonuses, and authorized an aviation continuation bonus. Several additional improvements in military compensation were made in FY 1981 by the Military Pay and Allowances Benefits Act of December 1980, the major ones being a substantial increase in submarine and sea duty pay and the establishment of career sea pay for officers.

Finally, in FY 1982, the Uniformed Services Pay Act of 1981 provided an overall 14.3 percent pay raise, increased the rates and expanded the eligibility for hazardous duty incentive pay, provided increases in aviation career incentive pay, and enlistment bonuses, authorized a 3-year enlistment bonus program for the Army and a scientific and engineering continuation bonus for officers, and made a number of improvements to travel and transportation allowances.

Providing fair compensation to our military members demonstrates that the American people appreciate their sacrifices and recognizes that military people must maintain a decent standard of living for themselves and their families.

d. Training

This year several initiatives were begun to enhance the training programs of the Services--an area of importance to the All Volunteer Force. Army readiness was improved by returning approximately 20,000 soldiers from a "borrowed labor" category to their regular units. This realignment was made possible through increased civilian end strengths and additional contracting. The Army also improved its unit readiness by increasing the length of basic training by one week, by programming additional dollars for training ammunition, and by opening the National Training Center at Fort Irwin, California.

The Air Force decreased the on-the-job training burden on its NCO corps in operational units by increasing its initial skill training by one week. A Joint Jet Pilot Program, instituted at Sheppard Air Force Base, Texas, trains pilots of our NATO Allies alongside U.S. pilots. In addition, increased flying hours for all the Services were programmed in the FY 1983 budget.

Not only does proper training improve readiness, but it provides job satisfaction and increases the motivation of the military person. Few things are more demoralizing to a member of the Active Forces or selected Reserve than to get no chance to develop his or her potential.

e. Cost

Too often, the need for improvements in military compensation programs become obscure by perceptions that personnel costs are rising at a disproportionate and accelerating rate which the nation is unable to afford. The fact is that this is not the case at all. The share of the DoD budget that goes for personnel (including retired pay) has declined every year since 1975--from nearly 60 percent in FY 1975 to 41 percent of the planned FY 1983 budget outlays. Even with the significant military compensation improvements granted last year, the personnel share of the budget is seven percent less than in FY 1981. These cost compare favorably with manpower costs in labor-intensive industries which run about 48 percent of expenditures.

These data indicate very clearly that if we continue to provide military members adequate compensation, we can attract and retain enough qualified men and women to meet our military needs. Further, we are confident that the All Volunteer Force (AVF), properly managed, can work.

2. Readiness and Sustainability of Conventional Forces

About 85 percent of our entire defense budget is devoted to non-nuclear forces. This large fraction of the budget is subdivided into the costs of military pay and allowances; research, development and acquisition of new weapon systems and military equipment; ammunition, spare parts, fuel and other consumables and other operations, maintenance and support costs. Among these items, two broad categories require special attention: readiness and sustainability.

Readiness is the ability of a forces, units, weapon systems, or equipments to deliver the outputs for which they were designed (including the ability to deploy and employ without unacceptable delays). It depends on having the required quantities of equipment in the hands of the units on a day-to-day basis, and on having the required number of adequately trained people assigned with the necessary mix of grades and experience level and to ensure that people and machines can work together.

Sustainability groups together items needed by forces to sustain combat in the event of war. It includes replacement equipment, spare parts and ammunition, fuel and other essential consumables. Sustainability also includes the manpower required to maintain combat strength--to rotate, replace, and reinforce as the course of battle demands.

Sustaining our forces with materiel in the early stages of a conflict must depend upon the war reserve inventories of ammunition, combat equipment, spares, and other combat-essential items acquired in peacetime. If conflict continues, the source of our materiel sustainability would shift increasingly to new production. Our initial manpower requirements would come from the trained personnel already assigned to active and reserve units in peacetime. Additional pools of obligated, trained people would be used upon mobilization to fill active and reserve units to wartime strength and to replace casualties during the early months of war. As the war continued, we would then become dependent upon volunteers or inductees to sustain the manpower needs of the Services. New inductees and volunteers require training before they can be assigned to combat--thus they would not be deployable during the first several months of conflict. (The law currently requires 12 weeks of training before inductees can be assigned overseas.)

No matter how large our forces or how modern our military equipment, if our forces are not ready to fight, or if they cannot be sustained once engaged, we have no real combat capability. When I assumed responsibility as Secretary of Defense, I inherited serious deficiencies in the readiness of our forces (both in manpower and materiel), extremely austere inventories of those war reserves needed for critical, immediate sustainability, and a generally antiquated and debilitated defense industrial base.

My most urgent requests this first year are designed to correct these deficiencies. To meet our immediate personnel readiness needs and to ensure our continued reliance on the All Volunteer concept, we are committed to: (1) securing fair and adequate compensation for those now serving in our Military Services; (2) providing a predictable, stable, and easily understood military pay increase adjustment mechanism to sustain the appropriate relationship between Service compensation and the pay of the private citizens whom our armed forces protect; and (3) providing living and working conditions that are attractive enough to encourage continued military service by trained and experienced men and women.

We also accord a high priority to redressing inherited deficiencies in materiel readinesss. We seek appropriations for our current forces to maintain a level of day-to-day materiel readiness that would permit them to move into combat with short warning if necessary. Because the warning time is likely to be short and the time required to correct readiness deficiencies is long, we must and will insist that the readiness of current forces be brought to higher levels before we modernize equipment or increase the size of our forces.

Adequate readiness ensures that we could respond quickly to a crisis or the outbreak of hostilities--a capability that is necessary but not sufficient. We must also be able to sustain our forces during conflict.

Again, we have adopted the policy of acquiring, as soon as possible, combat sustainability at least equal to that of the threats we face. Under this policy, procurement of the stocks needed for immmediate combat sustainability has nearly as high a budget priority as necessary improvements in readiness. Beyond that, we will continue to increase our war reserves gradually so that those inventories, complemented by a broader and more responsive industrial production base, will give us the capability to sustain our combat forces for the likely duration of conflict.

3. Conventional Force Expansion and Modernization

Although improving the combat readiness and sustainability of our conventional forces has, of necessity, been a high-priority concern for the Reagan Administration, we must, however, also provide for the modernization and expansion of our conventional forces to meet the clearly growing threat.

Here again our neglect in the past coincided almost exactly with the increasing Soviet threat. We must modernize and expand quickly if we are to continue to be able to deter aggression.

Beginning with the FY 1981 Budget Supplemental and FY 1982 Budget Amendment proposals last February, this Administration increased substantially the investment in equipment for conventional forces. I am requesting a continuation of this investment in the present budget and propose to continue a significant conventional investment program over the next five years.

Under this five-year plan, our ground forces will be receiving additional quantities of both weapon systems and support equipment. Compared to the final Carter plan, our ground forces will get 29 percent more M-1 tanks, 34 percent more fighting vehicles, 25 percent more attack helicopters, and 11 percent more utility helicopters, to cite some of the more cogent examples. Although this materiel will not allow for much expansion of Army force levels, it will go a long way toward eradicating the most serious of the Army equipment problems that the Reagan Administration inherited. In practical terms, the added quantities of tanks and fighting vehicles will provide modern weapon systems to three and a half more divisions than would have received them under the Carter Administration budgets.

Air Force and Navy/Marine Corps tactical air will also be modernized at more rapid rates and expanded modestly. We estimate that the Carter program would have provided something less than 4,200 fighter/attack aircraft for the Air Force, with an average age of 12.0 years. Our program will provide over 4,800--a 15 percent expansion--with an average age of 10.8 years. For the Navy and Marine Corps the force will increase from roughly 1,770 to 1,930 aircraft--an 9 percent increase--while average age will decline from 10.2 to 9.6 years. This represents an important step toward meeting the ideal average age for our tactical aircraft inventory--10 years for Air Force aircraft and 7-1/2 years for Navy aircraft.

It is vital to expand and keep modern our tactical air capability because it can react flexibly to ambiguous warning, deploy quickly to distant regions, provide support for outnumbered ground forces, and deliver considerable firepower.

The most significant force expansion proposed by the Administration centers on the Navy, particularly those components of it that have offensive missions. By the end of this decade, President Reagan's program ship total will exceed that planned under the Carter Administration by about 15 percent. The two new nuclear-powered carriers in our program will allow us to replace aging MIDWAY-class carriers by the early 1990s. Without these additions, for which the Carter program had no plan, our deployable carrier force in the early 1990s would have declined from 13 to 12 decks. The Reagan program will more than double The Carter Administration's planned attack submarine production, permitting both replacement of aged vessels and a small force increase. Carter effectively had no program for modernizing our amphibious fleet; as a result, our capability to lift amphibious forces would actually have declined in the 1980s. This Administration's ten amphibious ships will give us a good start toward countering the block obsolescence that threatens our amphibious lift shipping in the 1990s. And the four refurbished battleships provided under the Reagan program will give us unique offensive capabilities and will be the nucleus of four surface combatant battle groups.

Because we face a large backlog of modernization requirements, and because our first priority is restoring the readiness of forces we already have, the pace of modernization must be slower than would be desirable, given the substantial demands that our military forces should be prepared to meet. Nor can we increase the level of defense forces as much as might be prudent. In all of our conventional force investment efforts, we have attempted to correct weaknesses in the defense industrial base and to achieve greater efficiency in production. Sustained Congressional support will be necessary to field the strong conventional forces required to meet the threat.

4. Cooperating with Allies and Friends and the Role of Security Assistance

a. Security Assistance

It is so obviously to the advantage of the United States, of our allies, and of the free world, to have a strong network of alliances that no further advocacy should be required. Yet, every year military assistance and training funds are regularly held up, reduced, and sometimes denied. The inevitable result of this will be far higher defense expenditures for the United States.

In the past year we have built closer defense relationships with friends in Southwest Asia and the Middle East. We have strengthened our military cooperation with Morocco, Saudi Arabia, Sudan, Somalia, Oman, and Pakistan. Joint military commissions with Egypt, Morocco, Tunisia, and Jordan have been established and are being explored with other countries. These commissions provide a useful forum for security discussions and facilitate monitoring and planning of programs of military cooperation.

Like our own, the defense requirements of our friends and allies have increased. Our security assistance program is designed to assist in meeting their defense needs while enhancing the collective security of the Free World, thus complementing U.S. defense efforts and strengthening our own security.Security assistance also facilitate obtaining important access, and overflight base rights abroad, and encourages rationalization, standardization, and interoperability with our allies. Other benefits include an expanded defense industrial mobilization base and reduced procurement leadtimes.

The cost of military assistance to the U.S. taxpayer is not onerous (Chart I.C.1). In FY 1980 it was less than $13 per person--the lowest level in 30 years. In 1981, the grant element of our military assistance dropped below $1 billion, or less than one-twentieth of the 1952 level. The sharp reduction beginning in 1973 reflects previous Administration's and Congress' decisions to phase out the grant aid program. We now see the need for more on-budget funds for grant aid, or loans at concessional interest rates, since important parts of our defense strategy rely on the cooperation and capabilities of a growing number of friendly countries that have critical defense needs but overburdened economies.

Although the dollar value of U.S. military related exports has risen over the long term, the ratio of military assistance to the U.S. defense budget has steadily declined from its 1950 peak of 9.5 percent. Current military assistance funding levels even at less than two percent of the defense budget, provide a high-dividend return on the dollar investment and are a particularly cost-effective instrument of U.S. policy (Chart I.C.2).

These declining trends in our security assistance program have occurred in the face of considerable increases in the military assistance efforts of the Soviet Union. For example, there was a five-fold increase in Soviet arms sales to the Third World from 1978 to 1980 (Chart I.C.3). This dramatic leap in Soviet sales is a significant indicator of the Kremlin's willingness to exploit political and military opportunities as they arise throughout the world. During the same period, American policy was not sufficiently flexible to meet the challenges of a rapidly changing international environment.

b. Treaty Relationships

The value of formal treaty relationships is greatly enhanced by continuing and realistic provisions for security assistance.

The North Atlantic Alliance is the principal alliance to which the United States has committed its defense resources. The Alliance continues to bring together its members in the common cause of collective defense and provides the forces to deter Soviet aggression.

The Atlantic Alliance is not without its problems. A collection of 15 sovereign states, dedicated to the proposition that an attack against any is an attack against all, is bound to encounter difficulties of a military as well as a political nature. But, despite the problems, the Alliance remains strong and determined and continues to reflect a remarkable consensus on the fundamental issues of deterrence and defense.

Through extensive consultation and concerted action, we have moved to strengthen the North Atlantic Treaty Organization. The Administration has sought and received a reaffirmation of the important NATO goal of annual real increases in defense spending. We have sought and received from our allies an increased recognition of threats to the Alliance that originate outside the NATO area, and we have engaged in consultations on how the Alliance might act in concert to facilitate meeting those threats. There is strong support within the Alliance to maintain the momentum for the modernization of NATO's nuclear forces. And the members of NATO have supported the President's unprecedented offer to the Soviet Union to

CHART I.C.1

COST TO TAXPAYERS: TOTAL GRANT PROGRAM

(CONSTANT FY '82 $: BILLIONS)

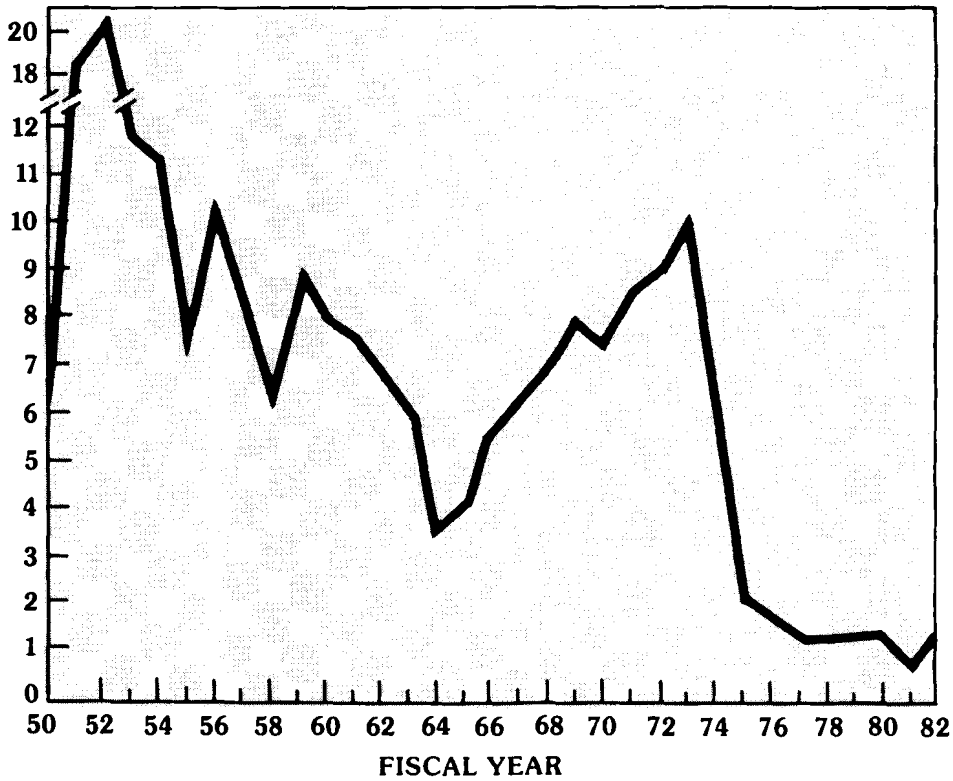


CHART I.C.2

SECURITY ASSISTANCE AS A PERCENTAGE OF THE DEFENSE BUDGET
(CONSTANT FY 1982 DOLLARS)

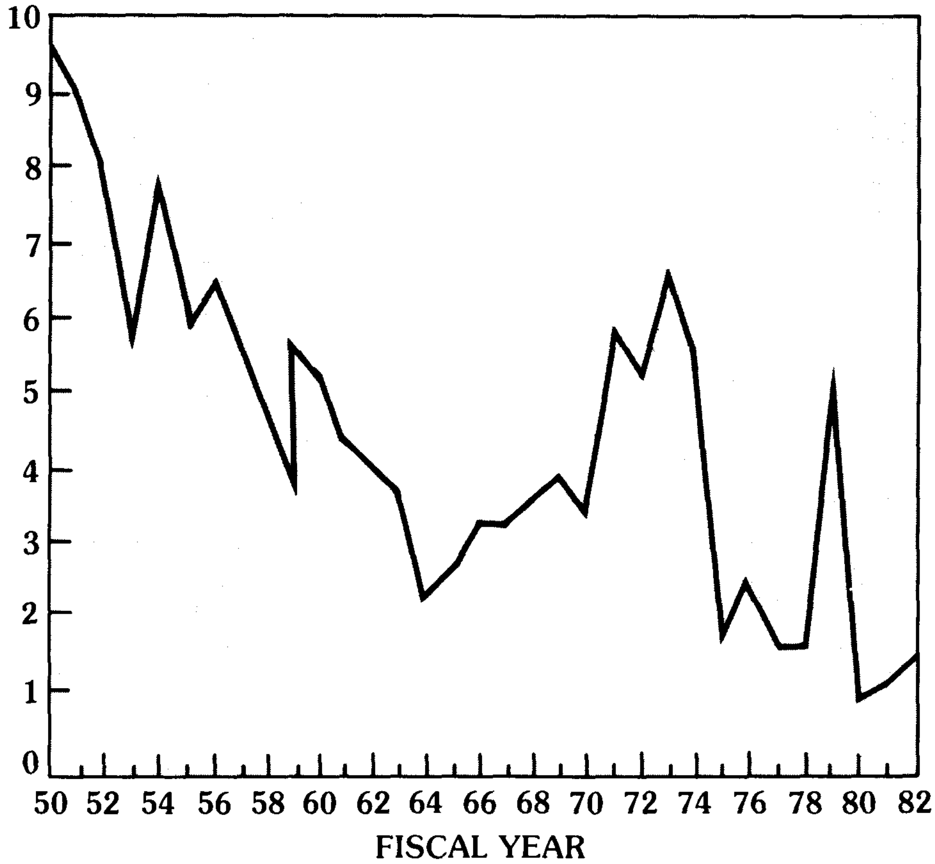
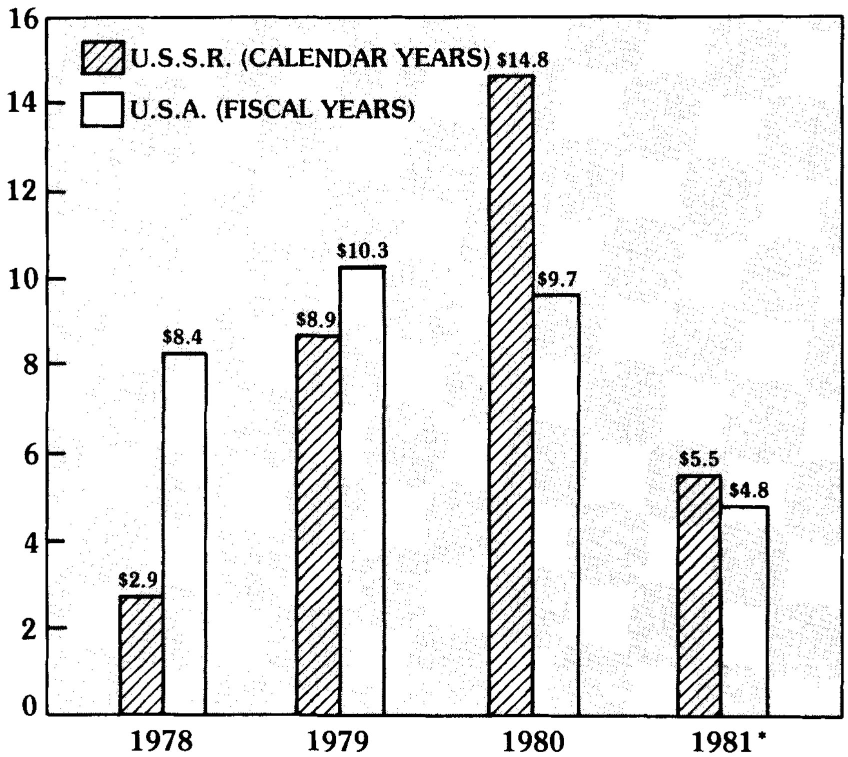


CHART I.C.3

U.S. AND SOVIET ARMS SALES TO THE THIRD WORLD

(IN BILLIONS OF DOLLARS)



*SOVIET FIGURE INCLUDES SALES AS JUNE 30, 1981;
U.S. FIGURE INCLUDES FULL FISCAL YEAR SALES

terminate the deployment of U.S. intermediate-range nuclear missiles in Europe if the Soviets will dismantle their intermediate-range nuclear missiles.

Cooperation with our NATO Allies greatly multiplies the effectiveness with which our own defense resources are marshalled to protect our national security. We have called upon our NATO Allies to facilitate our efforts to provide for the security of Southwest Asia. We have made it plain to them that their cooperation is vital if we are to be able to concentrate our forces in Europe and still make them applicable, in a crisis, to other areas. We will continue to press for concrete measures to accomplish this.

We have stressed the importance of allied solidarity in the face of growing Soviet military power. And we have for the most part achieved that solidarity through close consultation and collaboration. Several of our NATO allies have managed, despite economic difficulties, significantly to increase their defense investment. Others, though, have fallen short. All are agreed that more needs to be done if stable deterrence is to be maintained. We will continue to lead by example, urging each of our allies to join with us in making the additional sacrifice that the unremitting growth of Soviet military power has forced all of us to bear.

Concern in Europe about the danger of nuclear war has led to protests and demonstrations, often calling for policies that Western governments recognize would do irreparable harm to the integrity of the Alliance and the safety of its people. We are determined to lead the alliance through the current period of concern and anxiety, pursuing a sound military strategy in consultation with allied governments. Neither we nor our allies can permit the flaring of emotions to deflect us from the urgent requirement to preserve the peace by maintaining our strength. Confident that the overwhelming majority of free citizens in all the sovereign countries of the alliance remain committed to our common defense, we will show, in Churchill's memorable phrase, the "will to stay the course."

The United States is allied by treaty with six Asian and Pacific nations: Japan, Australia, New Zealand, The Philippines, Thailand, and the Republic of Korea. Japan, with whom we have a Treaty of Mutual cooperation and Security, plays a vital role in maintaining regional stability and is the cornerstone of the US forward defense strategy in the Asian-Pacific region. Japan already contributes toward the achievement of shared security objectives, both economically and with its own improving self-defense capability. However, much remains to be done to expand Japanese defense capabilities responsive to the threat in Northeast Asia.

Australia and New Zealand, allied with us by the ANZUS mutual security pact, contribute to Western security by focusing their efforts on the Southwest Pacific islands and the support of friendly Southeast Asian nations. Australia has also increased its presence in the Indian Ocean and its support for transitting U.S. forces. The Philippines, to whom we are linked by a mutual security treaty and by the Manila Pact, enhance our ability to project power throughout East Asia and into Southwest Asia by providing continued use of Clark Air Base and Subic Naval Base. Additionally, although non-aligned, Malaysia, Indonesia, and Singapore support U.S. presence in Southeast Asia and allow unhampered U.S. transit of the vital Indonesian straits. Two of our Asian allies, Korea and Thailand, which face hostile forces across their borders, have U.S. assistance to bolster their self-defense improvements. In Korea, U.S. forces help maintain deterrence and preserve peace and stability.

By funding nearly the full amount of the Administration's FY 1982 request for foreign aid, Congress has recognized that an effective security assistance program serves American interests well. Congress has supported legislative initiatives, including creation of the Special Defense Acquisition Fund and removal of restrictions on assistance to key regional partners, that have further enhanced the effectiveness of the program. We expect continued progress in FY 1983 and beyond (Table I.C.1).

TABLE I.C.1

Security Assistance Program Growth in the 1980s

	1981	1982	1983
Total Programs (Constant FY 1982 Dollars In Billions)	6.0	6.8	8.2
Percentage Breakdown of Programs 1/			
Foreign Military Sales Credits			
Guaranteed Loans	46.5	45.3	44.9
Concessional Loans	--	--	14.2
Forgiven Loans	9.1	11.0	5.7
Military Assistance Program	3.1	3.1	1.1
Economic Support Fund			
Grant	35.1	34.7	22.8
Direct Loan	5.0	3.0	10.2
International Military Education and Training	.5	.6	.6
Peacekeeping Operations	.6	2.2	.5

1/ Percentages may not total 100 percent due to rounding.

The security problems in Central America and the Caribbean are likely to require greater attention and resources. In the event of a major conventional war, the Soviet presence in Cuba and Cuba's armed strength could present a direct military threat to the southeastern United States and to the South Atlantic sealanes. This imposes an added burden for the defense of our Alliance.

At the present time, however, Cuban and Soviet intervention in Central America and the Caribbean poses the more immediate danger. In view of the potentially serious threat to American security interests there, the Caribbean Basin must receive higher priority and far greater resources than in the past. In order to gain time to address the underlying political, economic, and social problems of the region, we must cooperate closely with our neighbors. We must halt terrorist aggression and deter further military attacks in the hemisphere. A failure to respond to the current threat would only lead to far greater human and material costs in the future.

The government of El Salvador, unlike Nicaragua, seeks to fulfill its pledge to hold elections. But the terrorists and guerrillas supported by Cuba and the Soviet Union attempt to deny the people of El Salvador the opportunity to build a pluralist democracy, to complete their land reform, and to restore the economy. The Government of El Salvador needs our help to restore security for its people.

In September, the Defense Department dispatched a team of experts to El Salvador to assist the Salvadorans in developing a national military strategy. While some recommendations of the team are currently still under review, others are already being implemented. The Salvadorans have requested, and we have agreed to provide, out-of-country training for about 500 to 600 officer candidates, for a light infantry battalion of about 1,000 men, and for noncommissioned officers. This training began early in 1982. Salvadoran requirements far exceed planned FY 1982 foreign military assistance and training levels. Thus, we will need the support of the Congress to fund this urgent need and respond in a timely manner.

We are continuing to provide small Mobile Training Teams to train personnel in areas such as maintenance and coastal patrolling in which there are deficiencies. Equipment provided through Foreign Military Sales includes communications equipment, helicopters, weapons, and trucks that should allow the Salvadoran forces to improve their mobility, command and control, and ability to interdict insurgent supply lines from their external suppliers. This effort is being supplemented by support from other concerned Latin American countries. The favorable consensus that was developed at the Fourteenth Conference of American Armies in November and more recently at the Organization of American States meeting in St. Lucia, suggests an awareness among many nations in the hemisphere that they must work together to enhance their common security. Both by long-standing policy and by the Rio Treaty, we are committed to join with our Latin American Allies in "mutual assistance and common defense of the American Republics."

5. The Forces for Nuclear Deterrence

Last fall, President Reagan decided on a comprehensive program for revitalizing our strategic nuclear deterrent. This program will end the decline of U.S. strategic capabilities relative to Soviet forces and create a deterrent that is far more stable and secure than exists today.

Our strategic program is affordable; it fits within the amounts decided upon in March 1981 for strategic programs for the next six years. Direct costs associated with the strategic force buildup of the early 1960s consumed over 30 percent of the total defense budget. President Reagan's program for strategic forces, while consuming less than 15 percent of defense spending over the next five years, will give us the greatest addition of modern, strengthened strategic forces planned and funded by any United States President.

The period in the mid-1980s when major and critical components of our present strategic deterrent forces could be destroyed by an enemy surprise attack is our most vulnerable period. This period of added vulnerability--and hence risk--looms before us because the United States failed to modernize or strengthen its strategic forces while the Soviets have never slowed their strategic buildup. We must regain our momentum now. Most strategic systems take a long time to bring on line--often as much as a decade. That is why parts of this program are specially designed to secure additional strength for the near term, while at the same time we build the long-term strategic forces we need but cannot deploy until the end of the 1980s. This is an area of such importance that we cannot leave any gaps.

Accordingly, the President's program consists of five mutually reinforcing elements:

-- First, improvement of our communications and control systems, perhaps the most urgently needed element of our entire strategic program. We must have survivable systems that would, under all circumstances, detect, identify, and report a nuclear attack. We must be able to communicate with our strategic forces before and after such an attack, so as to control and coordinate our response. Our command and control systems will need major improvement if they are to survive endure, and be useable. The President's program provides for those vital needs.

-- Second, modernization of our manned strategic bomber force so that it retains the capability to penetrate Soviet air defenses.

-- Third, deployment of new, more accurate, and more powerful submarine-launched missiles--the most survivable of our nuclear offensive systems.

-- Fourth, a step-by-step plan to improve the survivability and accuracy of new land-based intercontinental ballistic missiles (ICBMs) and to reduce their vulnerability.

-- Fifth, improvement in strategic defenses including civil defense to help deter nuclear attack, and to degrade its effectiveness if it is attempted.

a. <u>Command, Control, and Communications Systems</u>

To improve our warning capability, we will upgrade the survivability of our warning satellites and ground terminals and augment their capacity so we could obtain more definitive warning should a nuclear attack be launched. Additional surveillance radars, which would help us detect an attack from submarines, will be constructed to cover potential operating from submarines, will be constructed to cover potential operating areas of Soviet strategic submarines to the southeast and southwest of the continental United States.

To upgrade the capability and survivability of our command and control systems, we will deploy advanced airborne command posts to serve the National Command Authority in time of war and we will harden existing airborne command posts against nuclear weapons effects.

We will develop a new satellite communications system employing extremely high-frequency channels so the President's orders can be passed from the national command center to the commanders of our forces and the forces themselves and so we can better manage our forces in a protracted war. Our bombers will be equipped with very low-frequency receivers to enhance their ability to communicate. Our ballistic missile submarine force will also receive an upgraded communications package.

b. <u>Bomber Forces</u>

The previous Administration was willing to live with the risks of an aging B-52 force for the 1980s and the uncertain schedule and unproven capabilities of an advanced technology bomber (ATB or "Stealth") for the 1990s. We have chosen a far less risky course. Our program will provide much-needed capability earlier in the 1980s.

Specifically, we will develop and deploy a force of 100 B-1B bombers, with an initial operating capability in 1986. This aircraft will have the ability to penetrate enemy defenses well into the 1990s and to serve as a more survivable and enduring cruise missile platform. The B-1B also will have a most important conventional role for many years to come. We also plan to deploy the ATB as soon as possible.

The "two bomber" approach of the Administration's program will not only provide increased capability when needed, but also will help in controlling costs by stimulating competition, allowing for flexible procurement policies, and providing the B-1 for use as a cruise missile carrier for the 1990s--instead of another, yet-to-be-developed aircraft.

Meanwhile, we will also modernize a selected portion of our newer B-52s to carry cruise missiles and make them more survivable overall. A force of about 3,800 air-launched cruise missiles will be deployed beginning next year. Finally, existing KC-135 aerial tankers will be retrofitted with new engines to increase our airborne refueling capabilities.

c. Sea-Based Forces

The cornerstone of our program for the sea-based strategic offensive forces is the development of the more accurate submarine-launched ballistic missile (SLBM) known as the D-5, or TRIDENT II missile. This missile, which we plan to deploy in 1989, has nearly doubled the payload of its predecessor, the C-4, and is more accurate as well. We thus will maintain our sea-based capabilities when large numbers of older POSEIDON submarines retire in the 1990s. At the same time, we provide the additional targeting capabilities that come with a more accurate missile. We plan to continue construction of the TRIDENT ballistic missile submarines at a steady rate of one per year. Since no TRIDENT submarine was authorized in FY 1982, we are requesting two in FY 1983 to maintain this steady level of production over the two year period.

In addition to the long term plans, we will deploy several hundred nuclear-armed sea-launched cruise missiles on our general purpose submarines beginning in 1984. These missiles will serve to strengthen our deterrent.

d. ICBM Forces

The quest for a satisfactory solution to the increasing vulnerability of our existing land-based ICBMs has been a particularly vexing one. The Reagan program provides a step-by-step modernization program for the ICBM force. We will continue development of the MX missile--a far more accurate and more powerful missile than the MINUTEMAN. We will plan to deploy 100 operational MX missiles--each with 10 warheads--with a minimum of 40 in existing MINUTEMAN silos. All TITAN missiles will be deactivated. Deploying the MX in silos gives us a near-term improvement in our existing ICBM force, and an initial way of breaking the Soviet monopoly on prompt hard-target-counterforce capability until the D-5 and more permanent, less vulnerable MX deployments become operational.

Meanwhile, we will pursue research and development on three promising programs that would give us survivable MX basing modes for a much longer period. These are:

-- deep basing to protect missiles and control systems, if feasible, even from direct hits by Soviet weapons.

-- continuous airborne patrol aircraft, through development of a long-enduring aircraft that could carry and launch an MX missile; and

-- ballistic missile defense to protect our land-based missiles from incoming Soviet missiles and thus improve the survivability of our missiles.

We expect to choose one or, more likely, several of these options in 1983, the accelerated schedule directed by the Congress.

e. Strategic Defense

Our strategic defenses have been virtually ignored for over a decade. As a result, we have large gaps in the North American air defense network and obsolete air defense interceptors. And research and development programs for anti-satellite and ballistic missile defenses have fallen behind Soviet efforts.

Our approach is multi-faceted. It will improve air surveillance, in coordination with Canada, by deploying a combination of new Over-the-Horizon BACKSCATTER radars and improved versions of existing radars. Meanwhile, efforts to develop more enduring sensors will be pursued. We will replace five squadrons of aging F-106 interceptors with new F-15s and buy additional AWACS aircraft for peace-time and wartime surveillance and interceptor control. We will continue to pursue an operational antisatellite system. And we are increasing the research and development effort on ballistic missile defense systems that could provide defense for our strategic forces.

Civil defense has also been neglected in past years. A new effort will be made to improve our civil defense system over the decade ahead.

6. Improving the Management of the Defense Department

Improvements in the management of the Defense Department and the resources for which it is responsible are essential if we are to obtain the best value for our defense dollars. The management initiatives Deputy Secretary Carlucci and I have taken have had five broad purposes:

-- to provide for the best available contributions in strategic thinking, so as to renew defense policy and military strategy in order to adjust to the changed threat and take full advantage of our intellectual, scientific, and technological capabilities;

-- to accomplish cost reductions wherever possible and make more efficient use of resources;

-- to streamline the planning, programming, and budgeting system to eliminate wasteful paperwork and duplication of planning efforts, and to assign clear responsibility to the Services;

-- to improve the acquisition of weapons systems, reducing costs and time delays by eliminating unnecessary regulations and permitting steadier long-term procurement, with stronger incentives for industry to develop more economical production processes; and

-- to institute a vigorous effort to eliminate waste, fraud, and abuse throughout the Department and the Services.

a. Strategy and Policy Formulation

Defense policy and military strategy have to be renewed to adjust to the changed world environment, overcome obsolete concepts and thinking, and take full advantage of U.S. and allied capabilities. But the best strategic thinking will be of little use unless it can be translated into concrete policy decisions, budgetary choices, and specific strategic plans. We have, therefore, taken initiatives both to improve the translation of strategic thought into policy decisions and to encourage and utilize intellectual work that can inform and guide our decisions.

The new DoD planning process ensures that strategy and policy requirements are constantly before our budget officials and planners. By reorganizing the Defense Resources Board and streamlining the planning, programming, and budgeting system (see below), we provided the structure through which the renewal of strategic thought and policy can affect the actual operations and decisions of the Defense Department.

To develop the intellectual foundation for defense policy and strategy, we instituted more flexible and efficient ways of using established outside research organizations and have created a new group, the Strategic Concepts Development Center, located at the National Defense University. This Center will take advantage of the rich resources of the National War College and will provide advice to me, the Deputy Secretary of Defense, and the Chairman of the Joint Chiefs of Staff.

b. Cost Reductions

Significant reductions in Defense outlays have been made since our original plan in March to compensate for increases in non-Defense outlays, such as interest and unemployment insurance, and for lower revenues. Defense has taken reductions of $33.9 billion from the March original five-year topline, FY 1982-86.

Identified savings and economies in budget authority total $38.7 billion through FY 1986, compared with the previous Administration. If FY 1987 is included, the cumulative total is $48.2 billion. In addition, we have targeted future savings of $10.1 billion for FY 1984-87. This will bring the total savings and economies to almost $60 billion. We have already reduced FY 1983 Defense outlays alone by more than $5 billion based on new economies and efficiencies.

The constraints in effecting such savings must be properly understood. Ninety-three cents of each Defense outlay dollar are committed at the start of the year to cover prior year programs and minimal operations of the Department. This leaves only seven cents of each Defense outlay dollar for spending for new programs. Because of Defense spend-out patterns, outlay reductions require program reductions about four times as large. This causes serious program disruption and impacts heavily on faster spending readiness functions.

The following table summarizes the savings achieved or programmed.

TABLE II.C.2

Economies and Efficiencies
Preliminary Estimates
TOA ($ Billions)

	FY 81	FY 82	FY 83	FY 84	FY 85	FY 86	Sub-total	FY 87	Total
Pay Adjustment	.1	2.1	4.0	5.1	5.9	6.5	23.7	7.1	30.8
Operations	.3	1.2	.9	1.0	1.0	1.0	5.4	1.0	6.4
Acquisition	.1	1.1	1.6	1.9	1.9	3.0	9.6	1.4	11.0
Subtotal	.5	4.4	6.5	8.0	8.8	10.5	38.7	9.5	48.2
Targeted Future Savings	—	—	—	2.0	1.7	1.5	5.2	6.1	11.3
Total	.5	4.4	6.5	10.0	10.5	12.0	43.9	15.6	59.5

Compensation savings reflect: (1) a cap on Civil Service pay increases at 5.0 percent compared to the unrestrained application of comparability surveys; (2) once a year cost-of-living increases in lieu of semiannual increases; and (3) reversal of military pay reforms proposed by the previous Administration that would have cost more in the near term in order to realize some economies in the long term.

The costs of our internal operations have been greatly reduced through elimination of unnecessary travel; reduced reliance on consultants and contract management services; reductions in base overhead; reduced purchases of unneeded equipment, supplies, and furniture; and capital investments that will increase productivity. These are the outcome of intensive reviews and hard-nosed budget scrubs that will continue.

Economies in acquisition reflect not only reductions and cancellations of marginally useful programs approved by the previous Administration, but also many of the Department's acquisition initiatives. For example, the acquisition savings shown above include over a billion dollars from increased multi-year procurement; nearly $2 billion by rephasing procurement to take advantage of more economic order quantities; $1.5 billion from procurement of lower cost systems; and several hundred million by investing in productivity enhancing capital equipment. In addition, many programs have been delayed so that they too can be financed at more economical rates at a later date.

In addition to our own initiatives, we have examined scores of suggestions and recommendations on ways to save Defense dollars that we have received from the General Accounting Office, the Congressional Budget Office, the House Republican Study Committee, various Congressional Task Forces, and individual members of Congress. Of course, many of these suggestions duplicate initiatives that we had already undertaken. Others have been incorporated into our management initiatives and budget.

c. <u>The Acquisition of Weapons System</u>

To improve the acquisition process, we stress long-range planning so that the Services, the Congress, and the contractors will know as far in advance as possible the full scope of each program. I have delegated greater responsibility and accountability to the program managers to reverse the tendency towards micro-management by the Department. In choosing weapons systems, we are making every effort to achieve more economical production rates. At the same time, we must make doing business with the Defense Department more predictable and attractive. If we discourage innovative and efficient contractors from bidding for and participating in defense business, we will not restore a healthy, strong industrial base for military orders. To this end, we also must use realistic cost, budget, and funding figures so that both we and the Congress understand early what the total cost of the full program will be.

d. <u>The Planning, Programming, and Budgeting System (PPBS)</u>

Within recent years, the PPBS has grown top-heavy and congested with paperwork and detail, leading to an overemphasis on programming and unneeded data, to the neglect of strategic planning and professional military advice. I initiated a comprehensive review of PPBS to ensure that our strategy will be in harmony with our military capabilities, and to streamline our decisionmaking process. Following careful study, from both within and outside the Department, we have now thoroughly revised the system.

The new approach enhances the participation of top officials in the Department and of Service line-managers and ensures that the military advice of the Joint Chiefs of Staff and the Commanders of the Unified and Specified Commands is fully considered.

We cut back by more than half the paperwork that was required for the PPBS process. Budget documentation has also been reduced and Congressional committees have been asked to reduce the paperwork requirements they have imposed. Furthermore, we emphasize centralized control of executive policy development but decentralized policy execution. My senior staff, the Joint Chiefs of Staff, and the Service Secretaries can now concentrate on major policy decisions in offering me their advice and recommendations. The Services have been made responsible for the development and execution of the day-to-day management of the resources under their control. My staff also provides overall technical support and major mission analyses necessary to use the capabilities of all the Services and to meet the objectives identified by the President and Congress.

I have enlarged the Defense Resources Board, the principal governing body of the Department's program review process so that we can use the full capability of the Department to formulate policy and design programs. The Board now includes the Service Secretaries and makes available the views of the Commanders of the Unified and Specified Commands.

e. Elminating Fraud, Waste, and Abuse

I have instituted a continuing audit, inspection, and evaluation process to eliminate waste and to discover fraud and abuse so that the Government may take proper legal action to recover any losses. I established a new senior position, the Assistant to the Secretary of Defense (Review and Oversight). This official is responsible for coordinating all activities within the Department concerned with the elimination of fraud, waste, and mismanagement. He monitors and evaluates program guidance to all DoD activities on matters regarding criminal investigation programs. He conducts criminal investigations, as required, in the Office of the Secretary of Defense, the Organization of the Joint Chiefs of Staff, and the Defense Agencies. And he monitors the adherence of DoD auditors to internal audit, contract audit, and internal review policies and procedures. We have also set up a telephone hotline to help detect fraud, waste, and mismanagement in DoD programs. This innovation has proven quite effective and has led to a great many calls, 85 percent of which have resulted in useful suggestions.

ASSESSMENTS AND PROSPECTS

A. ASSESSMENT OF THE GLOBAL MILITARY SITUATION

1. The Central Role of the U.S.-Soviet Military Balance

The Soviet Union poses a greater danger to the American people than any other foreign power in our history. Only the Soviet Union has the power to inflict tens of millions of casualties on our population. Only the Soviet Union has massive and modern conventional and nuclear forces deployed, directly confronting our friends and allies in Europe and Asia. Only the Soviet Union has the forces and geographic proximity to threaten the free world's major source of energy. And the Soviet Union is embarked on a sustained effort to encourage and arm totalitarian forces in various parts of the world, so as to expand its political influence and military reach.

The Reagan Administration also fully recognizes that there are other threats to world peace and to the security of the United States. For example, we and our allies have come to depend heavily for important resources on some parts of the world which are either hostile or turbulent, or both, and which may possess powerful modern weapons. The Administration is also mindful of the fact that nuclear proliferation may lead to new dangers in the future and that the spread of nuclear explosives must be discouraged and inhibited. Moreover, the United States, together with its allies and friends, has to deter and contain terrorist threats by entities that act independently of the Soviet Union.

But even the threats that may arise independently in various regions are affected by Soviet power. Moreover, the Soviets sometimes choose to stimulate local instabilities, and even where they do not, they may benefit from the opportunities that these instabilities offer. The possibility of Soviet intervention increases the risk for the United States as it strives to protect a regional ally against a regional foe. The diffusion of power among many unstable and sometimes antagonistic states does not lessen the Soviet threat; "multi-polarity" has not, as many had hoped, become a benign force in the world. In key respects, unfortunately, the many dangers reinforce each other and make it more difficult to meet any one.

We recognize that several important foreign policy and military problems are not the result of any Soviet initiative. But this recognition must not divert us from the fact that it is the Soviet military effort, its direction and its nature, that drives our defense budget. When it comes to planning our military forces and defense strategy, it is clear that Soviet capabilities--present and potential--must be the dominant consideration.

For a realistic assessment of the threat we face, I refer you to the recent DoD publication, Soviet Military Power, a copy of which is attached to this Report. I published this document in an unclassified version to enhance public understanding of the Soviet armed forces--their capabilities and their strengths. There is nothing hypothetical about Soviet military power--it is real; and it is the single greatest threat to the United States and the Free World.

The touchstone for determining the adequacy of U.S. and allied defense plans and programs is whether these programs would put us in a position to defeat attacks on ourselves or essential allied interests wherever these interests are forcibly challenged. We have to be concerned with the potential courses and consequences of a variety of plausible conflicts that may threaten our interests or those of our allies. The array of existing forces that we inherited from past military programs, and the forces on the side of our potential enemies are clearly the major determinants of the outcomes of such conflicts in the near future. However, any direct comparison of specific forces can be only a gross indicator of the challenge that we now confront.

Some of these gross indicators, nevertheless, deserve our attention. To appreciate the overall trends in military strength, we can begin by comparing estimates of the overall military programs for the Soviet Union and the United States. This allows a crude first approximation of the evolution of the U.S.-Soviet military balance.

During the first two decades after World War II the United States made a larger military effort than the Soviet Union, (Chart I.A.1). Beginning in the 1960s, however, the Soviet Union steadily enlarged its military effort and then surpassed the U.S. defense program, which fluctuated but showed no real growth. For the last five years, the Soviet Union's military program has been about 50 percent larger than our own.

This comparison measures the size of the Soviet effort by an estimate of what it would cost, in dollars, for the United States to acquire and operate the Soviet military force as the Soviets do. The dollar estimates for the Soviet Union do not show how much the Soviets actually spend--they are estimates of the forces they are acquiring, stated in terms that permit comparison with the U.S. defense program. This comparison, however, does not include some very significant Soviet efforts and for which there is no exact U.S. counterpart--for example, their extensive preparations for industrial mobilization.

2. Trends in United States and Soviet Military Investment

More revealing than comparisons of total military expenditures is a comparison of American and Soviet military investment. While operating, maintenance, and personnel costs reflect military capability at the time they are incurred, programs for procurement of weapons, military construction, and research and development are investments in future capability.

In addition to the intrinsic importance of military investment, a comparison of Soviet and American investments is relatively clear-cut. There are many asymmetries between the two sides' defense programs, and between the two sides' economies, which make a comparison difficult. The U.S. has made certain choices about how to recruit, compensate, retain, and train its forces, and those choices impose some costs which the Soviet Union does not pay when it conscripts most of its forces for two years and pays them even less than the Soviet civilian standard of living. On the other hand, Soviet industrial inefficiencies make it relatively more costly for them to produce weapons than it is for us to produce weapons. While the dollar-cost comparison of the two programs attempts to correct for these asymmetries (by measuring both programs by what they would cost in the U.S.), a comparison of military investments focuses on items which are more similar for the two sides.

Military investments are also a particularly meaningful yardstick because they focus on the cumulative growth in strength. Military investments build up a "capital stock" of equipment, facilities, and weapon designs. Such assets last for many years and cannot be quickly acquired in an emergency. Future Soviet and American military capabilities will be decisively shaped by the inheritance from past and present military investment.

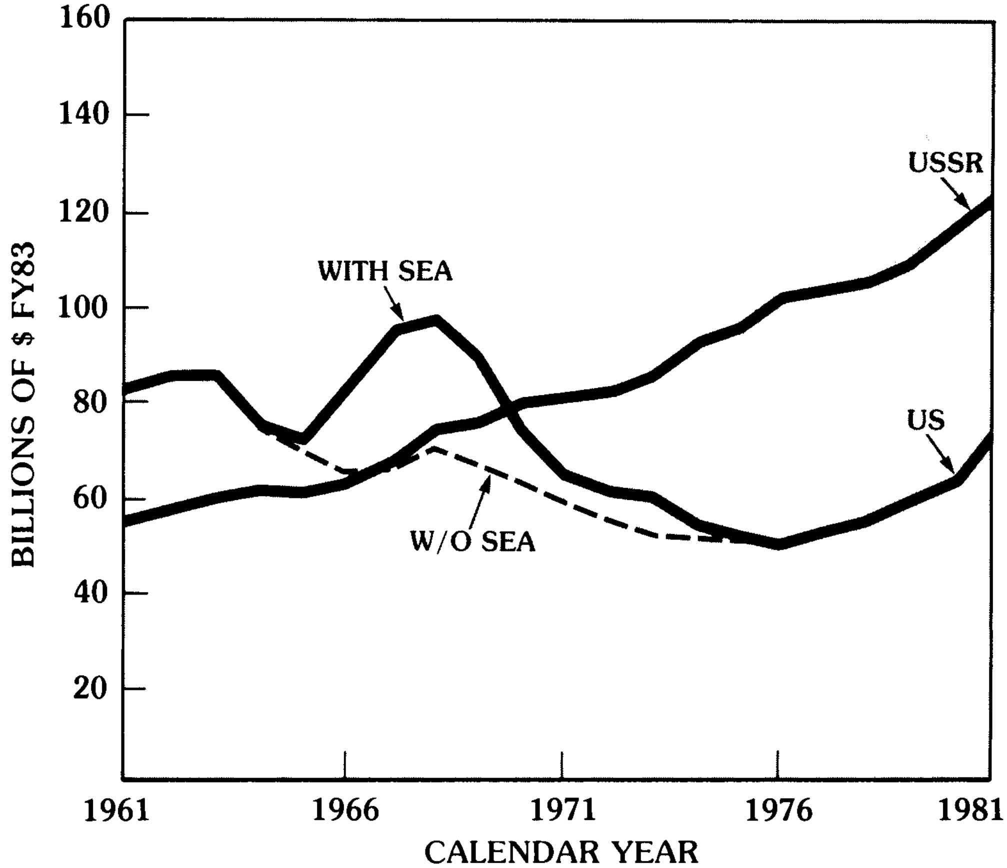
The Soviet Union's military investments have exceeded our own even more markedly than has its total defense program--an excess ranging from 80 to 90 percent during the past five years (Chart II.A.1). Investments form a larger share of a larger Soviet program; the Soviet commitment to military investment has not been deterred by the relatively high ruble cost of those investments; while the United State's resources for military investment may have been constrained by the relatively high dollar cost of paying our personnel and operating our forces.

The most direct result of these larger investment programs is an overall asymmetry in the flows of new weapons to military forces across virtually all of the major mission areas. Moreover, we have identified some 50 new or modified aircraft, missiles, naval ships, and space systems currently in flight testing or trials.

This continued high level of Soviet military investment has created an impressive inventory of military assets. A simple way to compare the U.S. and Soviet assets which have resulted is to assume that investments contribute an undepreciated "book value" to a nation's military capability over an average lifetime of, say, 20 years. In the 1960s, U.S. military investments were larger than the Soviets' and many of the assets then acquired still contribute to our strength. Hence, the Soviet advantage in accumulated assets began later and is currently smaller than their advantage in investments. But the very longevity of military assets means that the Soviet lead will grow wider, even if we now accelerate our own investment efforts. That is to say, we have not yet experienced the full consequences of our lagging investments of the 1970s.

CHART II.A.1

COMPARISON OF US MILITARY INVESTMENT OUTLAYS WITH ESTIMATED DOLLAR COST OF SOVIET MILITARY INVESTMENT ACTIVITIES



NOTES:

INVESTMENT INCLUDES RDT&E, PROCUREMENT AND MILITARY CONSTRUCTION

Chart II.A.2 shows that, under these rather simplified assumptions, even an increase in U.S. investments as high as 14 percent per year would not close the gap in accumulated assets until the early 1990s. The gap could be closed more quickly if U.S. investments provided qualitative innovations that increase the rate of obsolescence of past Soviet investments. This point highlights the importance of research and development and of policies to protect our technological lead. Technology transfer from the West to the Soviet bloc, in effect, increases our defense burden.

It is often argued that to compare only the United States and Soviet military programs is misleading and that adding the programs of allies will change the comparison in our favor. Any apparent edge of the Western Alliance, however, is overshadowed by the more meaningful comparison of military investment, and also fails to reflect the structural differences of the two sides. The military investment programs of the Warsaw Pact have exceeded those of the Atlantic Alliance plus Japan since 1973; they are currently about 15 to 20 percent larger (Chart II.A.3). Thus, the Warsaw Pact has been steadily accumulating more military assets than the Western Alliance for almost 10 years.

The structural differences of the two sides make the programs on the Western side add up less effectively than those of the Warsaw Pact. NATO is seeking to make its national programs more complementary. But in an Alliance of independent nations, duplication, lack of interoperability, and inability to achieve certain economies of scale cannot be avoided. For the Soviet bloc, military programs are more fully additive since the Soviet Union can impose standardization on the Warsaw Pact. Moreover the Soviets depend less on alliance unity than we because their partners contribute much less to the Soviet bloc's aggregate power than our allies contribute to NATO. Thus, the Warsaw Pact's advantage in effective investment is closer to 35 to 40 percent if, as a rough first approximation, the efforts of U.S. allies are considered 60 percent additive to U.S. efforts, while Soviet satellite efforts are 90 percent additive to Soviet efforts.

Some have suggested that the military programs of the People's Republic of China add to aggregate Western strength. The Soviet Union probably has plans for fighting on two fronts, so any "addition" of China's assets to those of the Free World may reflect the Soviets' own present assessment for certain contingencies. However, for other contingencies, Soviet planners might calculate that they could redeploy part of their forces currently positioned against China to some other front.

3. The Nuclear Balance

In assessments of the global military balance, the greatest attention has been devoted to the U.S.-Soviet relationship in strategic nuclear forces, and for sound reasons. But this attention has assumed a particularly

CHART II.A.2

RATIO OF ACCUMULATED MILITARY INVESTMENTS

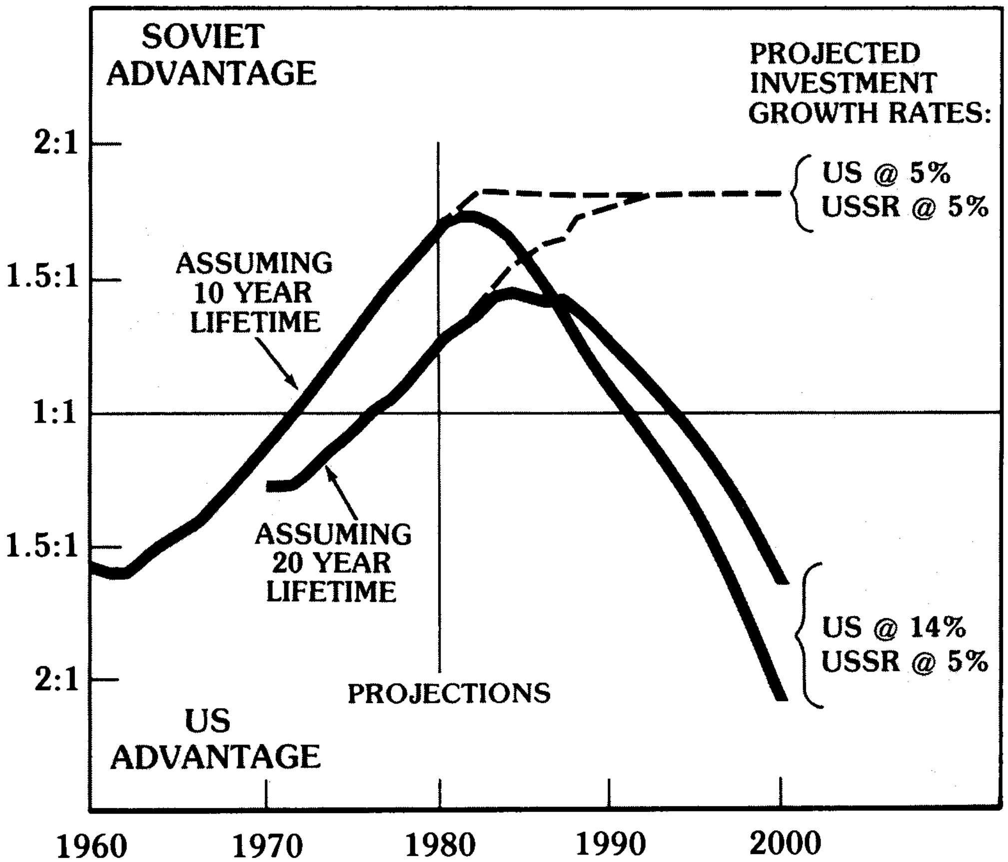
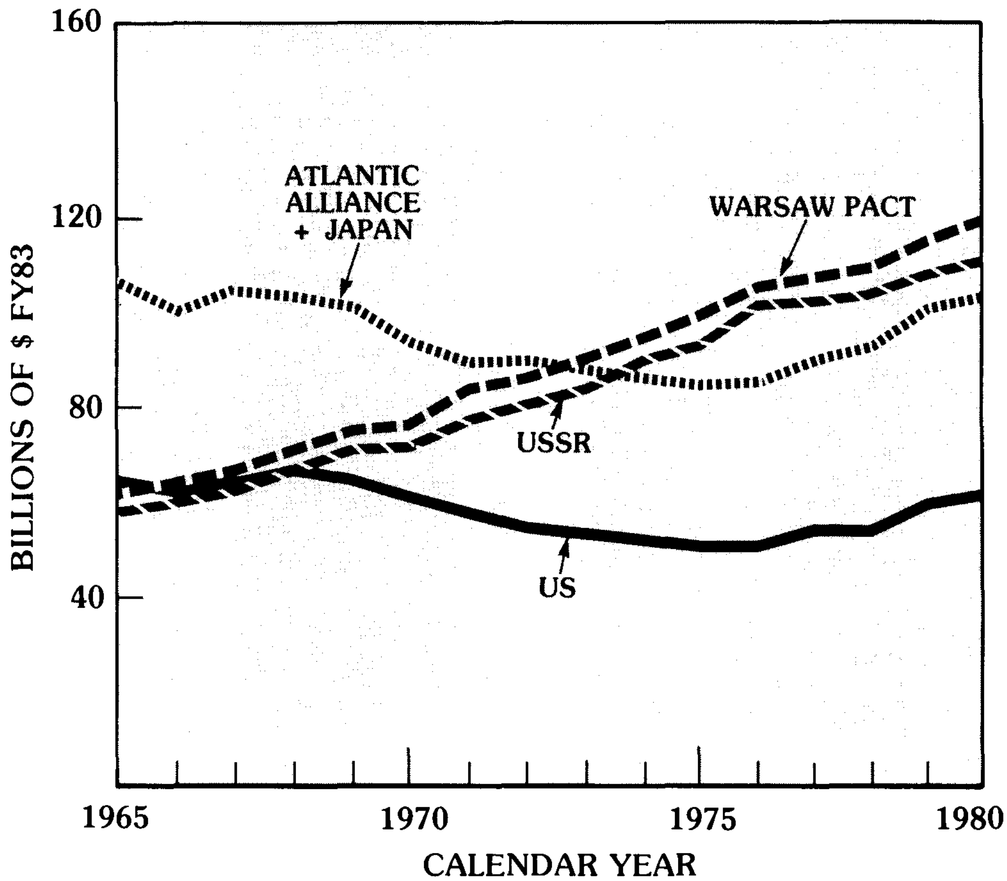


CHART II.A.3

COMPARISON OF ESTIMATED ATLANTIC ALLIANCE + JAPAN MILITARY INVESTMENT OUTLAYS WITH ESTIMATED DOLLAR COSTS OF WARSAW PACT MILITARY INVESTMENT ACTIVITIES



NOTES:

INVESTMENT INCLUDES RDT&E, PROCUREMENT AND MILITARY CONSTRUCTION.

U.S. TOTAL EXCLUDES VIETNAM INVESTMENT.

NON-U.S. ATLANTIC ALLIANCE DATA DERIVED FROM NONPERSONNEL DEFENSE OUTLAYS CONVERTED TO DOLLARS USING CONSTANT EXCHANGE RATES.

narrow focus during recent years when specific SALT negotiations became a dominant consideration for our strategic force policy.

The relationship between United States and Soviet nuclear forces is far more complex than is apparent in the picture derived from a set of SALT criteria. For one example, SALT criteria were blind to command and control systems. Yet, survivable and enduring command, control and communications systems are decisive for deterrence and would be a critical force capability should deterrence fail. SALT did not--and probably could not--deal with these systems. For another example, SALT limited "launchers" (a tenuously defined part of a weapon system), rather than the actual number of missiles and warheads themselves. Launchers by themselves are not adequate as a unit of limitation in Arms Control.

The point here is not that SALT was too limited in focus and scope. Most arms control negotiations, by necessity, can cope with only a fraction of the important features affecting an arms balance. The point is that the focus on those criteria of the strategic relationship that were within the purview of SALT is far too narrow for making those strategic decisions which significantly affect national security.

A major reappraisal of our methods of assessing the strategic nuclear balance has been underway in the Defense Department and is being emphasized with my support. It includes efforts to take account of Soviet-style assessments of the roles and performance of strategic nuclear forces and to evaluate Soviet perceptions of a wider set of contingencies. These range from crisis, local war, and escalation to intercontinental nuclear attacks, to Soviet views on continued nuclear warfare after large-scale attacks.

Since the objective of deterrent forces is to influence Soviet views and decisions, we must pay careful attention to how the Soviets might see the role of nuclear forces. What are _their_ measures of effectiveness? What would be _their_ criteria of success?

There are many reasons to believe that Soviet assessments are likely to be different from those usually made in the United States. United States assessments have focused on dealing with the "out-of-the-blue" surprise attack and on the associated problem of ensuring the survival of our long-range nuclear forces. Soviet assessments, by contrast, may focus on outcomes of large-scale, global war in which both conventional and theater nuclear forces are also involved.

The broader picture of what has been happening to the nuclear balance becomes clearer as we look at a wide variety of measurements of the U.S.-Soviet nuclear relationship. No single measure or combination of these adequately describes the balance; however, when taken together we see a long downward trend in the US position since the mid-1960s. Even considering dynamic analyses which attempt to capture more of the realities of conflict, the trends are similar. There are many other dimensions of the balance that need to be included in an overall assessment.

While the Soviets have emphasized both offensive and defensive forces, the US has largely neglected defensive preparations. The Soviets have also continued development of and paid increasing attention to civil defense and a wide variety of measures, designed to enhance the prospect of survival of key elements of their society after the outbreak of a nuclear war.

Soviet programs to protect their command, control, and communications systems, furthermore, have been much more substantial than ours. They have made a much broader effort to protect leadership on a continuing basis. In addition, they have hardened communications facilities and continue to pursue efforts to enhance their ability to attack our C^3 systems, including an aggressive, anti-satellite program.

While our strategic programs have been restrained because of expectations for SALT and detente, the Soviets continually improved the quality of their strategic forces. Given the central importance of these systems to national security, the Reagan program places major emphasis on reversing the trends of the past decade and strengthening our strategic forces.

It has been customary for our assessments of the nuclear balance to draw a rather sharp line between "strategic" nuclear forces on the one hand and the remainder of the nuclear forces on the other. This dividing line was a necessary device to circumscribe the systems to be included in SALT.

Apart from the exigencies of SALT, the distinction between "strategic" and "non-strategic" nuclear forces had important historic origins and reflected differences in the missions and geographic location of these forces. However, the distinction has become blurred by the realities of Soviet military doctrine and capabilities. The vulnerability of our theater forces to enemy attack interacts closely with the vulnerability of our strategic forces, especially in the vital dimension of command and control. And Soviet doctrine seems to categorize nuclear forces differently, by regarding their other nuclear forces and ours as essentially an extension of intercontinental nuclear forces.

During the late 1950s and early 1960s, both sides made plans for the development of a family of nuclear-capable artillery and surface-to-surface missile systems.

The U.S. program, however, has not been implemented and currently centers on the PERSHING II missile and Ground-Launched Cruise Missile. Until the replacement of these systems, the West is left primarily dependent on a combination of artillery, LANCE missiles, and tactical aircraft. By contrast, the Soviets stuck close to their long-term plans. With deployment of new SS-21, SS-22, and SS-23 missiles, in combination with modernized artillery and aircraft, they have apparently achieved their original goal of providing for a significant range of complementary artillery, missile, and aircraft systems, each with nuclear, chemical, and conventional ordnance options.

If NATO targets alone are considered, the totality of the improvements in Soviet surface-to-surface missile capabilities appears to have significant implications beyond tactical missions. Soviet range and accuracy improvements significantly enhance the Soviets' ability to support an unreinforced attack because the new systems can launch from peacetime locations, supported by a relatively unstressed logistics system.

In assessing tactical and theater nuclear forces, we must take into account launchers and their survivability and reaction time as well as the nuclear ammunition stockpile. The count of available launchers limits the size of any one salvo but not the scope of the total nuclear attack over a period of time. Soviet mobile missiles give an edge in survivability vis-a-vis fixed NATO TNF installations. Since the Soviets provide for the reload of nuclear missiles (as well as artillery), we have to consider the total number of warheads, not just the number of launchers.

We must recognize the global threat to our interests posed by the overall asymmetry in the types of nuclear warheads and the comprehensive coverage and operational characteristics of Soviet nuclear systems. In East Asia and the Pacific, as well as on the Western front, the Soviets continue to add SS-20s to their formidable and growing arsenal of nuclear-capable aircraft, nuclear submarines, and other platforms. Much of this capability could be quickly shifted or retargeted to be concentrated against any potential theater of conflict.

4. Maritime Forces and Power Projection

We are determined to restore and maintain maritime superiority over the Soviets. The question of the use of naval forces by the United States or its adversaries to protect or further their interests is closely related to the more general question of the ability of each side to project power in various areas of the world. Today, we have critical interests in many places that are distant from the Continental United States. These places include not only two of the 50 States and the Commonwealth of Puerto Rico, but also the homelands of our European and Asian allies and regions--notably the Persian Gulf--on which we and our allies critically depend.

The United States has long recognized that it has essential distant interests. During the 1970s, however, we tended to narrow the range of our concerns to the center of Western Europe and to neglect the fact that, for the European center as well as for ourselves, other parts of the world are vital. In fact, Western Europe, our Asian allies, and the United States have sharply increased their dependence on raw materials from other parts of the world at the very time that these areas have become increasingly vulnerable to hostile actions.

Soviet naval policy and programs for the 1980s are expected to be directed toward broadening the range of military and political options available to the leadership across the entire spectrum of conflict.

In comparing maritime forces particularly, one must keep in mind the major asymmetries in roles and missions of US and Soviet naval forces including long range land-based aircraft. It is, therefore, inadequate to assess the "naval balance" by simple comparisons of U.S. and Soviet forces in terms of tonnage, numbers of ships, or types of ships.

United States territory is partly located overseas and the United States can reach most of its allies only by crossing wide oceans. The Soviet Union has no parallel requirements. In the 1950s, Soviet naval forces were developed for coastal defense and interdiction of America's links with its allies. In the 1960s, the Soviets began to build strategic nuclear submarines which have now become a major element of their strategic forces. Only more recently has the Soviet Union begun to develop naval capabilities to conduct open-ocean, anti-submarine warfare, and, on a smaller scale, amphibious operations overseas.

Apart from this fundamental asymmetry between U.S. and Soviet maritime requirements, a comparison of naval forces is further complicated by the important roles of other maritime assets, such as merchant shipping, and land based forces. Thus, our capabilities and requirements must be considered region by region because of the influence of base structures, land-based air forces, and other factors. Moreover, the Soviets approach naval warfare differently from the United States and our allies. For example, to attack surface ships they emphasize cruise missiles more than the United States and our allied navies do--both conventional and nuclear cruise missiles that can be launched from long-range aircraft, submarines, and some surface combatants.

The Soviets have invested heavily in technologically advanced platforms, sensors, and weapons for submarine and anti-submarine warfare. Many features of these forces, taken together with our observations of Soviet naval exercises, indicate that their concept of operation calls for Soviet anti-submarine warfare forces to be concentrated in home waters in support of newer classes of Soviet ballistic missile submarines. In contrast, our anti-submarine forces would be spread worldwide, protecting vital sea lanes and naval surface ships from the very large Soviet attack submarine force. That force is steadily improving in quality, as the Soviets deploy increasing numbers of new types of submarines (ALPHA-class SSN and the new OSCAR-class SSGN) armed with new supersonic cruise missiles of sufficient range to permit attacks on our ships from over the horizon, and beyond the sonar detection range of our escorts.

The Soviets have also undertaken a steady buildup of their land-based naval aviation, using the BACKFIRE aircraft and other land-based medium- and long-range bombers. The central location of the Soviet Union on the Eurasian landmass permits rapid redeployment of long-range bomber forces. This provides a formidable capability to concentrate attacks on surface ships over broad sea areas around the Soviet homeland and, indeed, around much of the Eurasian landmass.

U.S. and allied maritime forces continue to be structured around surface-ship and submarine task forces or battle groups, with aircraft carriers as the focus of power in the battle groups. The United States responded to the threat of Soviet bombers by procuring advanced fighter-interceptor aircraft (e.g., the F-14 with PHOENIX missiles) because fighters are the only direct threat to long-range bombers, such as BACKFIRE, that can launch cruise missiles at ranges beyond the range capabilities of surface ship anti-air warfare systems. Western navies have also introduced new surface-to-air missiles, radar, and communication equipment, as well as cruise missiles of our own to threaten Soviet surface ships when close to allied task groups.

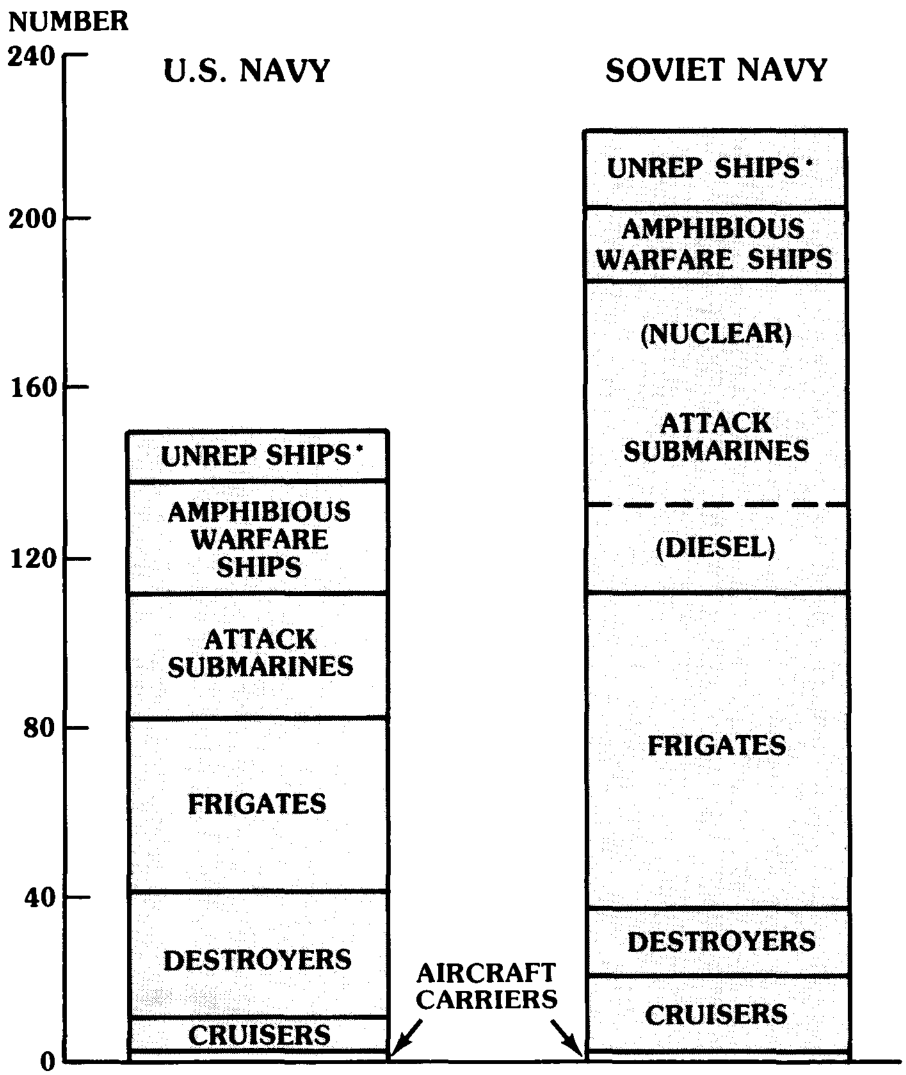
Despite these improvements, the pace of U.S. development and procurement has lagged behind the rate at which the Soviets have introduced new systems into their maritime forces (Chart II.A.4). This lag, coupled with our failure to replace aging units on a one-for-one basis, has dangerously eliminated the margin of maritime superiority on which the United States and its allies have depended since the end of World War II.

Recently, we have had evidence of a shift by the Soviets toward ship designs that permit sustained power projection operations in distant waters (e.g., the KIEV-class carriers, a new class of amphibious assault ship, and four new classes of cruisers and destroyers).

Judgments on our capabilities in the Persian Gulf region are heavily dependent on assumptions about such factors as tactical warning, Rules of Engagement at the commencement of hostilities, and unopposed overflights of third countries by Soviet bombers. In other ocean areas, particularly those outside the range of missile-equipped Soviet aircraft, our naval position remains strong enough so that our forces could accomplish their assigned missions.

CHART II.A.4

OPEN OCEAN GENERAL PURPOSE SHIPS AGE 10 YEARS OR LESS (END OF FY 80)



*UNDERWAY REPLENISHMENT SHIPS

Directly related to maritime forces and the changing character of navies is the balance between U.S. and Soviet capabilities to project power into crisis areas around the world. The United States has essential interests in defending allies who are close to the Soviet Union and separated from the Continental United States by the Atlantic and Pacific Oceans. No simple comparison of the size of our navy with the Soviet Union's will reveal whether we have the power to keep open the sea lines of communication to a threatened ally along their entire length, or whether, on the contrary, an adversary can cut them at some key point. Similarly, simply matching ground forces on both sides does not take into account the fact that in peacetime a large proportion of our ground forces is based many thousands of miles away from an area of conflict in the center of Europe.

Since the beginning of the 1970s, we have observed the Soviets describe the missions of their military forces as not only the traditonal protection of the Soviet Union, but also the protection of "Socialist states" throughout the world. The push to achieve long-range projection forces points to a major qualitative change in Soviet forces and strategy. The Soviets are acquiring forces for, and operational experience in, the projection of power and influence at great distances from the Soviet Union.

Assessment of relative power projection capabilities must include several additional factors which go beyond military forces and equipment. Effective power projection is facilitated by treaties of alliance and friendship, overseas military presence, rights of passage and overflight, base, port, and other facility use agreements, the willingness of friends to cooperate, and correct perceptions of the U.S. resolve to protect its interests. All of these will vary depending on circumstance and geographic region. In addition to using a variety of military and non-military tools to project power, the Soviets have a highly centralized and authoritative apparatus to coordinate the application of their activities directed toward basic goals. This apparatus is centered in the International Department of the Communist Party Central Committee.

Soviet ability to project power has been increasing relative to ours. They have expanded and improved their peripheral ground troops, tactical aircraft, and air defense units. They have improved their air and sealift capability and logistics infrastructure around the Soviet periphery. And, as we have seen, they have developed naval capabilities that allow them to project and support forces at a sizeable distance. They have improved their capabilities to manage distant operations by establishing sophisticated long-haul command, control, and communications facilities in such key areas as Cuba, Yemen, and Vietnam. They continue to use diplomacy, subversion, and military pressure to undermine non-communist states and to secure bases in Southwest Asia, Africa, and the Caribbean Basin.

In contrast, U.S. and allied access to several regions of strategic importance has declined as our overseas basing structure and that of our allies has diminished from what it was 20 years ago. To mention only two out of many examples, Aden, which used to be under British control, is now essentially a Soviet base, as is Cam Rahn Bay in Vietnam. And traditional friends may, in some cases, be less willing to cooperate with us militarily.

We have arranged for increased funding for facilities in East Africa and Southwest Asia because of our concern for the security of the Middle East and Persian Gulf region. U.S. long-range airlift capabilities will be improving, but Soviet proximity to the Persian Gulf and continuing Soviet force improvements clearly give the Soviets an advantage in projecting power into that vital region.

As we shift the focus away from the Soviet area of advantage on the Eurasian continent and its periphery to a broader area, the United States maintains a decided advantage in the ability to project power. However, the Soviets are strengthening their worldwide position by actively pursuing a much broader strategy involving aid, military advisers, military assistance, and use of proxy forces to increase their political influence, obtain communications, base, and facility use, and permit and enhance worldwide Soviet military operations. We can expect to see the character of Soviet forces continue to change considerably during this decade to accommodate their increased interest in power projection.

5. Conventional Forces in Europe

NATO's primary objective is to deter Warsaw Pact aggression and, if necessary, to defend against any attack on its territory or interests. In addition to deterring overt aggression, a strong NATO defense posture is needed both to limit the effectiveness of Soviet military forces as an instrument of political coercion and to foster stability in Europe. NATO's "flexible response" strategy requires mutually reinforcing strategic nuclear, theater nuclear, and conventional military forces that can respond effectively to any level of attack. Meeting these objectives will require that NATO continue to strengthen its theater nuclear and conventional forces.

The Warsaw Pact's buildup of conventional forces has attracted less public attention than the Soviet nuclear buildup, but it poses a serious threat to NATO's security--precisely because the Atlantic Alliance has lost its compensating advantage in nuclear arms. The combat power of the Warsaw Pact has increased considerably over the last 10 years, although force levels have remained roughly constant over this period--substantially larger than NATO's forces in many key areas, particularly ground combat forces. The Soviet advantage in associated weaponry has increased over the period. The Pact could quickly mass more than 150 divisions opposite NATO's Center, Northern, and Southern Region, and more than 5,000 tactical aircraft in direct support of these large ground formations. Moreover, most Pact forces have been modernized significantly with new weapons and support equipment.

Relative ground force potential in the Central Region has grown more favorable to the PACT over the past 15 years.

Air combat capabilities, calculated in a manner similar to ground force comparisons, for both NATO and the PACT have also grown steadily between 1965 and 1980. The Pact had an overall advantage in deployed combat aircraft. NATO modernization trends have resulted in about a 64 percent improvement in aircraft combat potential for deployed forces, compared to over 70 percent improvement for the PACT.

Not only have PACT land forces been impressively modernized, they have also been undergoing a reorganization to provide both a better combined arms fighting capability and greater sustainability.

The net result has been the emergence of Warsaw Pact ground and tactical air forces that are much stronger and better prepared to sustain conventional combat. NATO has traditionally sought to offset the Warsaw Pact's numerical advantages with higher quality equipment. However, the Soviet modernization of armaments has diminished, and in many cases reversed, NATO's qualitative edge. The qualitative advantage we had hoped to achieve by fielding the M-1 tank may be offset by continuing improvements in current Soviet tanks and by the expected fielding of the Soviet T-80 tank. Also, NATO's qualitative edge in air forces has been diminishing. Perhaps most important, Pact forces are becoming even better aligned with their military doctrine of defeating NATO quickly and decisively by means of fast-moving, "blitzkrieg-style" offensive operations. This mutually supportive relationship between doctrine and force structure means that Pact forces today pose a much more serious conventional military threat to NATO than was the case 10 years ago.

The combination of improving quality and a widening lead in numbers of major systems gives the Soviets a growing advantage in overall operational capability. In addition, the Warsaw Pact forces have gained in military strength through reinforcement actions, continued growth in war reserve equipment, and supply inventories contributing significantly to combat and logistic support capability. Thus, in contrast to the situation prevailing as recently as a few years ago, the Warsaw Pact appears increasingly capable of waging conventional campaigns in Europe lasting many weeks.

In order to insure deterrence against this formidable threat, NATO's military strategy calls for a strong forward defense effort by our combined ground and tactical air forces. Although substantial progress has been made in strengthening NATO'S forces, the Alliance's posture today has numerous weaknesses that erode its capability for executing this strategy. As a result, the quality of NATO's deterrent posture has weakened in recent years, and an accelerated U.S. and allied force improvement effort is needed if NATO is to retain a viable initial defense capability during the 1980s.

6. Southwest Asia and Africa

Recent events have dramatically increased the Soviet Union's access to the Persian Gulf region. The revolution in Iran eliminated a government whose military power posed a significant obstacle and substituted chaotic conditions that might facilitate the intrusion of a Soviet military presence. In addition, the Soviet Union and its proxies have established a major military presence in South Yemen and Ethiopia and increased the degree of control they exert over the regimes in these countries. The invasion of Afghanistan, despite the very real military difficulties of the Soviet occupation forces, has moved the potential Soviet front line further toward the Gulf. Compared to the 1960s, the Soviets can make use of heavy transport aircraft over Southwest Asia to support regional presence and client states. Furthermore, a large increase has taken place in the Soviet forces located in the nearby Caucasus and Turkestan Military Districts.

While these adverse changes were occurring in the Persian Gulf region, Africa increasingly became the target of subversion by the Soviets and their surrogates. Seizing opportunities for involvement in all corners of the African Continent, Soviet, East European, and Cuban military personnel and technicians have installed themselves in Ethiopia, Libya, Angola, Algeria, Mozambique and more than 20 other African countries. Of particular concern is the growing Libyan intervention and the Soviet-Cuban presence in the Horn of Africa (Table II.A.1).

TABLE II.A.1

Soviet Bloc Military and Civilian Advisors in the Mid-East and Africa (Significant Presence)

	Soviet	Cuban	East German
Mid-East and North Africa			
Algeria	8,500	170	250
Iraq	8,000	2,200	160
Libya	2,300	3,000	--
North Yemen	475	--	5
South Yemen	2,500	800	325
Syria	4,000	5	210
Sub-Saharan Africa			
Angola	700	18,000	450
Congo	850	950	15
Ethiopia	2,400	5,900	550
Guinea	375	280	125
Madagascar	370	55	--
Mali	635	--	20
Mozambique	500	1,000	100
Tanzania	300	95	15

Given the size of Soviet forces in the vicinity of the Persian Gulf, successful defense depends upon early arrival of U.S. forces--indeed upon their being in place in favorable defensive positions before any major Soviet penetration is achieved.

The United States has been attempting to enhance its own presence and operating capabilities in the region, in cooperation with such countries as Egypt, Oman, Kenya, and Somalia. This effort has included agreements on U.S. access in case of need and joint training exercises in the region.

7. East Asia

East Asia and the Pacific form, for the U.S., its western security region and, for the USSR, a separate theater of war with many contrasts to the military confrontation in Europe. In this large region, the interests and capabilities of four great powers converge.

The heightened Soviet effort to increase and project power in the Pacific, greatly facilitated by ever expanding Soviet access to air and naval facilities within Vietnam, is juxtaposed to traditional US interests and commitments in the region, the security concerns of the People's Republic of China, with who the United States has many common interests and objectives, and awakening Japanese awareness of their security interests and vulnerabilities.

The region is beset with internal conflicts, each with their own dynamics. The greatest and most militarized rivalry is the Sino-Soviet confrontation. Soviet forces in the Far East and Pacific have been increased and modernized since the mid-1960s, posing a threat to the world's most populous communist state, the People's Republic of China. North Korea has almost doubled its military capabilities since the late-1960s, raising tensions on the Korean peninsula. The Republic of Korea's steady force improvements, strong economic development, and the presence of U.S. forces have effectively deterred aggression. Following the "oil shocks" and the perceived decline in the relative U.S. strategic strength the Japanese are actively examining measures for a greater protection of their homeland and access of supply and markets.

Force trends in the Pacific region are unfavorable to the United States, Japan, and China. The Soviet Far East ground manpower has increased three to four times since the mid-1960s while that of the US in the Pacific has declined. Soviet tactical air forces and long-range air forces have been modernized. Vietnam is supporting its occupational forces in Kampuchea and Laos with increased Soviet aid. The Soviet Pacific Fleet has improved its power and reach with an aircraft carrier and other modern combatant ships. Sea surveillance and anti-submarine warfare operations based in Vietnam and the Soviet naval presence in the Indian Ocean have increased substantially. Chinese forces, large but ill-equipped, appear to need modern arms to counter the steady Soviet military buildup.

North Korea has relentlessly modernized and expanded its military forces. Much of this combat power is deployed well forward. The construction of hardened air, naval, and military facilities near the demilitarized zone, the North Korean tunnels under the DMZ, and heavy emphasis on unconventional warfare forces gives the North, which has the capability to attack with little or no warning, a military advantage. The Republic of Korea has enjoyed strong economic growth, much of which has been allocated to the improvement of the quality of life of its people. However, the South has not matched the military build-up of the Kim Il-sung dictatorship in the north.

U.S. naval forces in the Pacific, because of expanded commitments in other regions such as Southwest Asia, have been reduced to a post-World War II low. Our warships and submarines in the Pacific are about half of the 1965 level. The nuclear balance in the region has also shifted in favor of the Soviet Union.

The relative stability in the region reflects the vigor of our friends and the strength of our alliances. In order to strengthen these alliances, we hope that the Japanese, with the free world's second largest economy and eighth largest defense budget, will increase their contribution to regional stability by augmenting economic assistance to other nations, strengthening their air and sea defenses, and providing protection to the sea lines of communication out to 1,000 miles.

In Korea, we have emphasized the retention and modernization of our forces as well as continuing Republic of Korea modernization. As the Republic of Korea's economic recovery accelerates, their ability to finance the major force improvements they have planned over the next five years will grow. We hope that by 1990, a favorable military balance will be restored on the peninsula.

The role we assume in the military modernization of the People's Republic of China could be of enormous importance for China's own security. Certain arms sales and technology transfers, carefully managed in terms of our long-term strategic interests and relevant to China's perceived needs, might help strengthen China's value in countering Soviet expansionism in East Asia. A measured contribution to China's modernization can help to strengthen Beijing's perception of our reliability. It can also help prevent a widening of the gap between Chinese and Soviet military capabilities, thus contributing to the deterrence of a Soviet attack.

8. Western Hemisphere

For a century and a half, the Western Hemisphere has been protected from the reach of outside imperial powers, at first through the application of the Monroe Doctrine, and later through the collective security efforts of the American Republics. The West European empires, against which the Monroe Doctrine had been designed, have long since been dissolved. Today, it is the Soviet empire that poses the challenge to this hemisphere by intruding with military and political means wherever the opportunity arises.

Castro's Cuba has abandoned the attempt to become a model of progress and has become one more instrument of Soviet imperialism, as well as a direct military threat to the region. It serves as an arms depot, a supplier of expeditionary forces for Soviet arms, and a logistics base for Soviet-supported intervention in Central America and elsewhere.

The Soviet Union has provided a high level of military assistance to Cuba. The total value of Soviet arms shipments to Cuba since 1960 is about $2.5 billion. Since Cuban intervention in Angola, the yearly arms shipments have almost doubled on the average. During 1981, Cuba received 63,000 metric tons of arms--the highest yearly total since the massive buildup in 1962, the year of the missile crisis.

Cuba's military personnel strength has increased and its military capabilities have improved dramatically over the last five years. Of particular significance has been the development of an effective ready reserve which gives Castro and his Soviet masters a well-trained, and to a large extent, battle-tried mercenary force that can be activated on short notice. About 70 percent of Cuba's forces in Angola and Ethiopia are manned by ready reservists recalled to active duty. Cuban armed forces include an army of over 225,000, a navy of about 11,000, and air and air defense forces of 16,000. These figures do not include hundreds of thousands in paramilitary forces that, in many instances, are better trained and equipped than the regular armed forces of other Caribbean countries.

The Cuban army includes 9 active and 18 reserve divisions. The Cubans have over 200 MIG fighter aircraft, 650 tanks, 90 helicopters, 2 FOXTROT attack submarines, 1 KONI-class frigate, and about 50 torpedo and missile attack boats.

Cuba has over 2.3 percent of its population in the regular armed forces. In fact, one of every 20 Cubans participates in some kind of military or police mission. By comparison, Mexico, with seven times Cuba's population, maintains regular defense forces half the size of Cuba's and has less than two-tenths of one percent of its people in the regular armed forces. And, in the United States, we have less than one percent of our people in the regular armed forces. Per capita, Fidel Castro maintains about a 10 to 20 times larger military effort than any of the other major nations in this hemisphere.

Cuba's neighbors in Central America (with the exception of Nicaragua) maintain small defense forces, varying from almost none for Costa Rica to about 8,000 to 10,000 for Panama, 15,000 to 16,000 for Honduras and Guatemala, and about 20,000 for El Salvador. El Salvador, of course, has been compelled to expand its armed forces because of the totalitarian aggression against it.

The Soviet influence in Cuba is all-pervasive. A Soviet brigade with a strength of about 2,600 to 3,000 is located near Havana. An estimated 6,000 to 8,000 Soviet civilian advisers are in Cuba and allow the Soviet masters to monitor closely their Caribbean island. The Soviets provide Cuba's principal economic support--a leverage that Fidel Castro cannot ignore.

It would be a grave mistake to ignore the threat posed by this Soviet military outpost. It supports a massive intelligence collection center and sits astride critical sea lines of communications. In peacetime, 44 percent of all foreign trade tonnage and 45 percent of the crude oil imported into the United States pass through the Caribbean. In wartime, half of NATO's supplies would transit by sea from Gulf ports through the Florida Straits and onward to Europe. Much of the petroleum shipments and important reinforcements destined for U.S. forces in Europe would also sail from Gulf ports. The security of our maritime operations in the Caribbean, hence, is critical to the security of the Atlantic Alliance (Chart II.A.5).

In 1970, Soviet naval vessels spent approximately 200 shipdays in the South Atlantic. In 1980, this number had increased thirteen-fold to 2,600 shipdays. Given this presence and the current strength and disposition of the U.S. Navy, the South Atlantic sea lines of communications are far more vulnerable today than they were 10 years ago, or at the time of the Cuban missile crisis.

More immediately pressing than this threat to the Alliance in the event of war is the Soviet-Cuban effort currently underway to expand further the reach of totalitarian rule and Soviet influence. This attempt employs all the tools of modern empire building: propaganda and deception; the export of terrorism; massive shipments of arms; and, finally, the overthrow of established governments followed by the imposition of the new totalitarian rule, which is intended to be made irreversible through the import of "Praetorian guards" and police experts.

Nicaragua is close to the final stage of this intended irreversible transition, El Salvador is fighting in the middle phase, and Honduras and other Central American republics are now threatened by the early phase.

In Nicaragua, by the end of 1980, there were between 4,000 and 5,000 Cuban civilian advisers and about 1,500 Cuban military and security advisers. Cuban advisers are believed to be serving in key posts throughout the Government. There are also advisors in Nicaragua from East Germany, Bulgaria, North Korea, and the Soviet Union to assist in building the Sandinista Army from its currently estimated strength of 60,000 into a force of 250,000. Once achieved, this military buildup will mean 1 in 10 Nicaraguans under arms. Even at its present strength, the Sandinista Army represents the largest military force ever seen in the history of Central America (See Chart II.A.6).

Landing strips in Nicaragua have been lengthened and will soon be able to accommodate sophisticated jet

CHART II.A.5

(U) PRIMARY SEA LINES OF COMMUNICATION IN THE CARIBBEAN BASIN

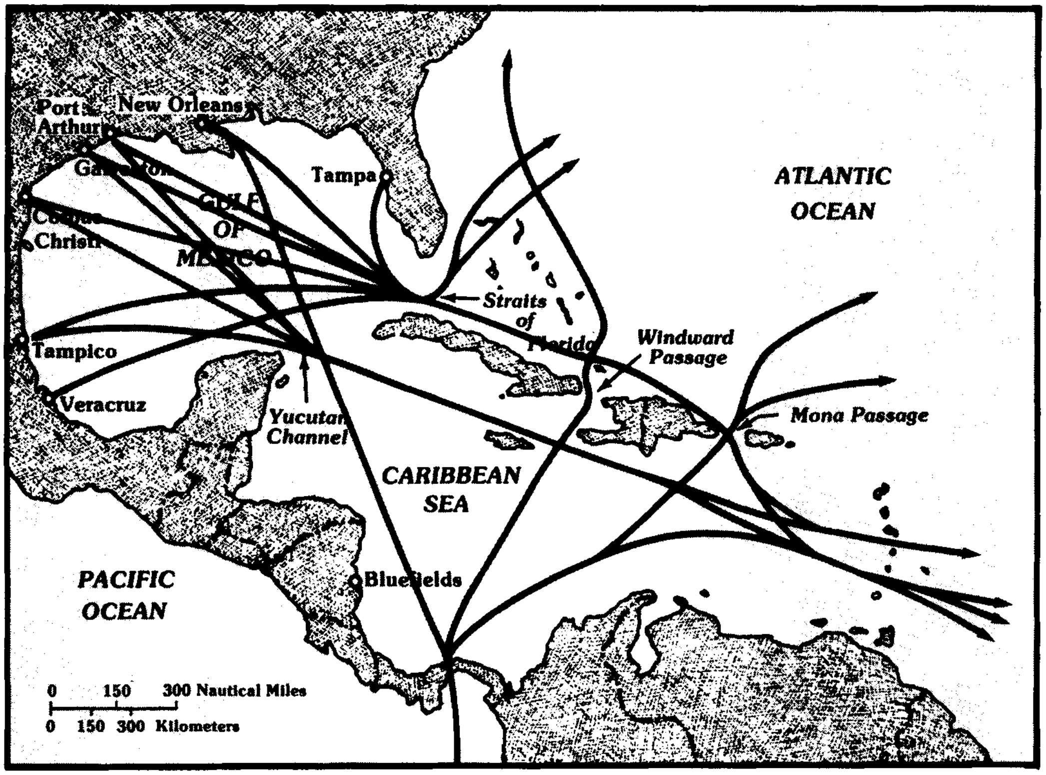
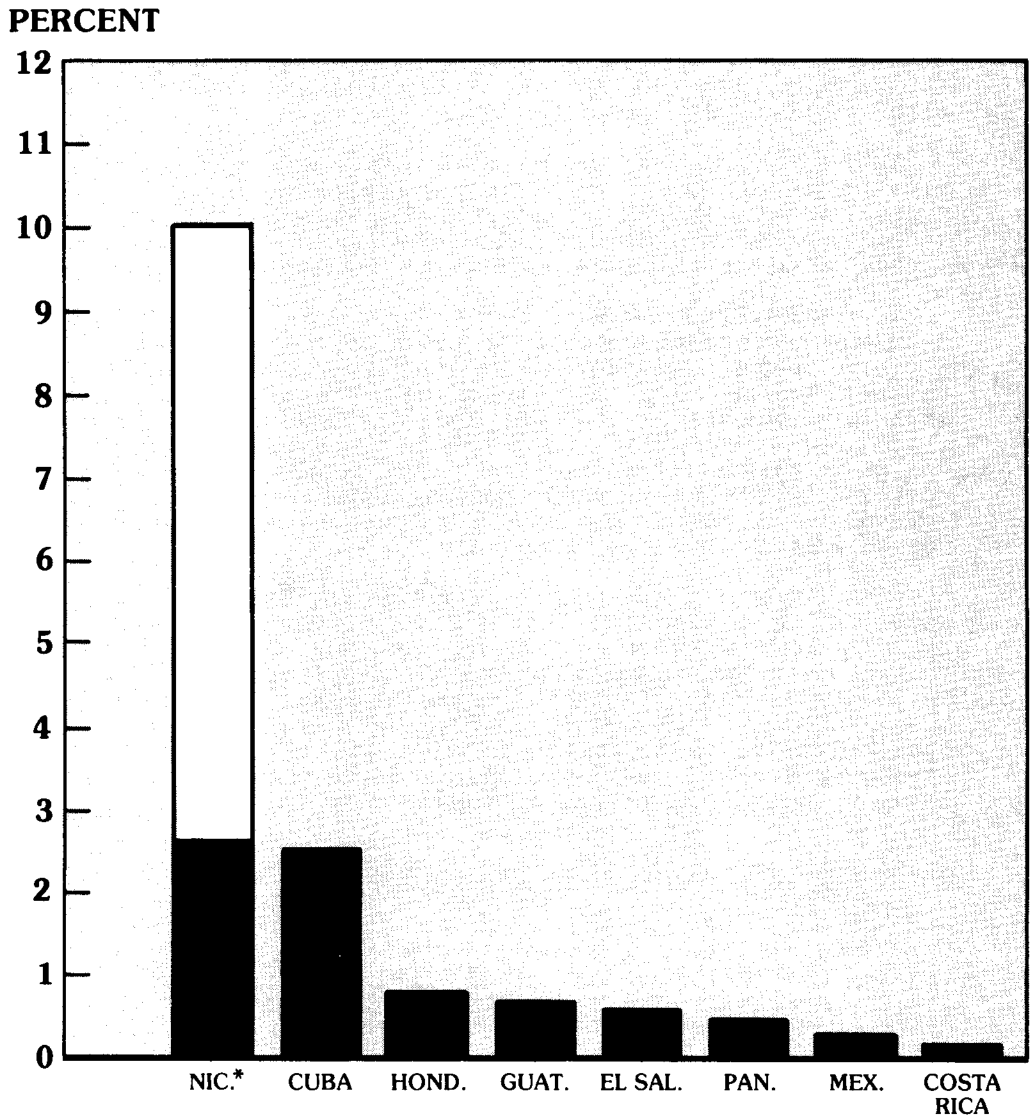


CHART II.A.6

% OF POPULATION UNDER ARMS



* HAS ANNOUNCED IT WILL EXPAND TO 250,000

aircraft. Soviet advisers are deeply involved in directing the effort to upgrade the Nicaraguan Air Force. Nicaraguans have been trained as jet pilots and mechanics in Bulgaria. Although there is no evidence of MIGs in Nicaragua yet, the sighting of MIG-21 crates in Cuba provides cause for concern. Arrival of MIGs would dramatically increase Nicaragua's threat to its neighbors, whose fighter inventories consist of old day-fighter aircraft. Honduras, for example, has only 20 super Mystere and F-86 fighters with no all-weather capability.

The Nicaraguan military buildup represents a growing threat to efforts in the region to move toward pluralism and self-determination. The November 1981 elections in Honduras stand in marked contrast to the broken pledge of early elections by the Sandinistas in Nicaragua.

In El Salvador, the Cubans have played a key role in arranging for the acquisition and delivery of weapons to the Salvadoran guerrillas from Vietnam, and Eastern Europe by way of Nicaragua. Guerrilla recruits have been transported to Cuba and elsewhere for extensive training. The Soviet Union has, of course, funded and assisted these efforts by underwriting its Cuban proxy at a cost of $3 billion annually and by supporting efforts to collect funds, arms, and supplies from the communist bloc for delivery to the guerrillas.

Cuba has not only been active in Nicaragua and El Salvador, but has also coordinated clandestine support organizations in Honduras, Costa Rica, and Guatemala. In fact, convincing evidence of Cuban subversion has surfaced in virtually every Caribbean Basin country. In Grenada, Cuban influence has reached such a high level that Grenada can be considered a Cuban satellite. The Cubans are constructing air and naval facilities on Grenada, which far exceed the requirements of that tiny island nation.

B. RESOURCES FOR THE LONG-TERM MILITARY COMPETITION

Economics and national defense are closely interrelated for all nations. The size and character of a country's military forces are limited, in the last analysis, by the size of its Gross National Product, its industrial and technological base, and the skills of its people. The vital interests which military forces are designed to protect are in part economic interests, such as access to vital raw materials--as the importance of Persian Gulf oil attests. In military alliances, the relative importance of the members depends in part on their industrial power and stature as trading partners.

The economic strength of the Free World critically affects the military balance between East and West. The larger economies and more advanced technology of the industrial democracies have enabled them to compete militarily with the Soviet bloc while using a much smaller proportion of their total national resources. The United States spends 5 to 6 percent of its GNP on defense, Western Europe 3 to 4 percent, and Japan 1 percent, while the Soviet Union devotes at least 13 to 14 percent of its GNP to military purposes.

Deciding how to allocate their national resources to defense is inevitably a controversial political issue for the industrial democracies. Necessary defense increases may seem too burdensome because they conflict with accustomed levels of taxation and with non-military spending. And during adverse business cycles, decisions in favor of defense spending are even less popular. As mentioned above, it is an unwarranted concern that our level of defense spending is responsible for the current inflation. Increased defense spending may raise prices for specific items we need--such as titanium and chromium--but this is the appropriate means of stimulating production and diverting non-defense consumption of those goods so that they will be available to meet our defense needs. Particular price adjustments do not constitute inflation; inflation is a general rise in prices. While we are committed to the rapid procurement of items which our military forces urgently need--even when this will increase costs--increased production rates will in some cases cut unit costs by achieving new economies of scale.

The great strength of the Free World has been the prosperity of its free market economies. This provides both steadily rising standards of living and the resources necessary for defense. Our adversaries extract their military program from less productive economies and must impose harsh restrictions on civilian consumption.

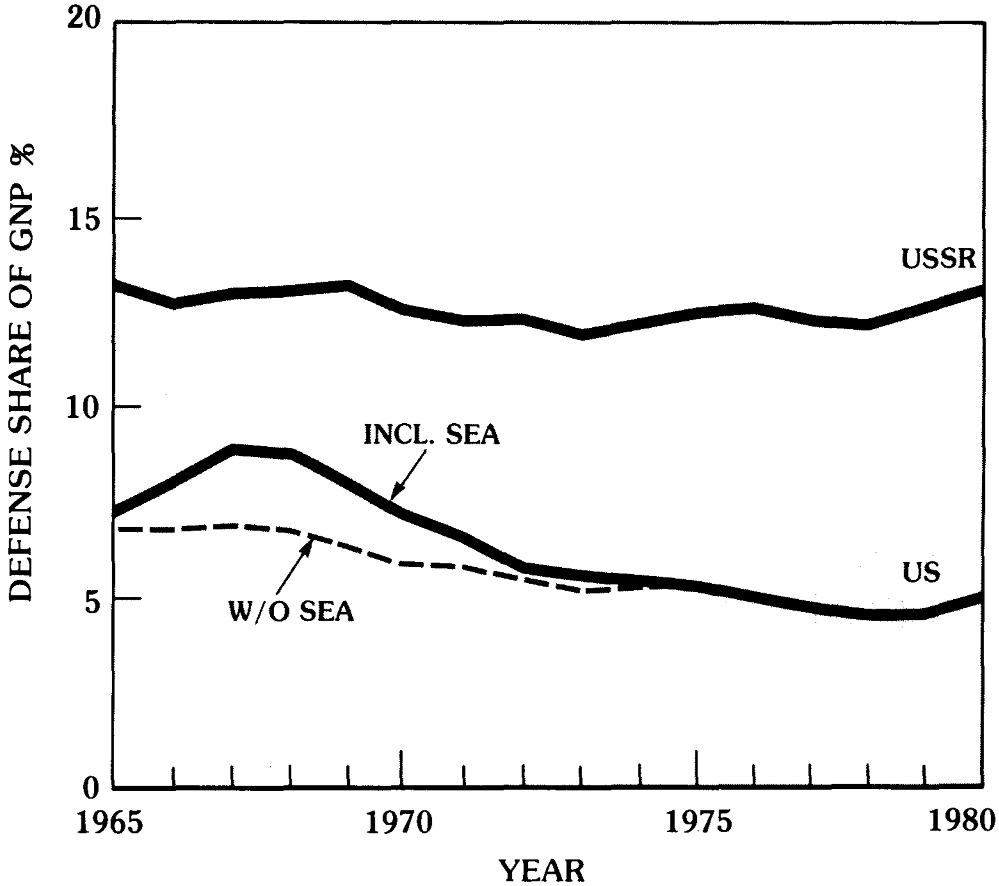
Despite our much larger economic base, however, the Soviet Union has for more than a decade committed more resources to military purposes. As Soviet GNP growth has recently declined below the rate at which military expenditures have advanced, the military effort is claiming a rising share of Soviet national output, as shown in Charts II.B.1 and II.B.2 below. Moreover, the Soviet Union devotes a significant additional part of its resources--more than one and one half percent of GNP--to the trade subsidies and surpluses and economic and military aid which sustain the Soviet empire. The various forms of Soviet economic support for Eastern Europe, Cuba, and Vietnam have grown sharply in recent years. The burden of these expenses as well as of the Soviet military program makes the Soviet economy's performance an important factor shaping the future of the Soviet empire.

During the next decade, Soviet economic growth rates are likely to continue declining at least as much as in the past decade. The Soviet system experiences chronic difficulty in improving productivity and the past sources of growth--large additions to capital stock and to the labor force--will be less available in the 1980s. A continuation of recent military expenditure trends, together with the increasing level of investment apparently necessary to compensate for the low return on investment, would further brake the already slow growth of consumption.

The Soviet economy is significantly affected by trade with the United States and our allies. Hence, it is

CHART II.B.1

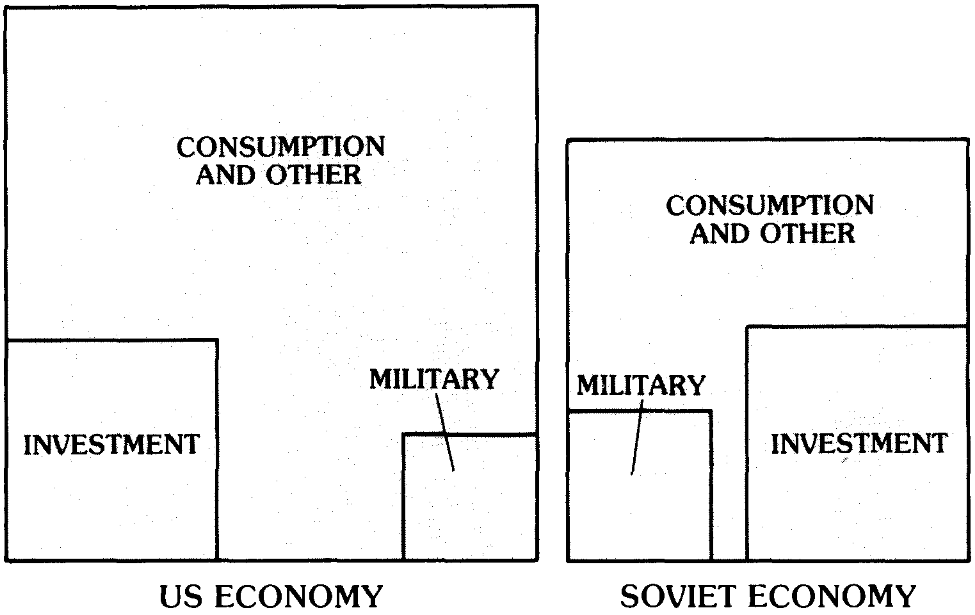
DEFENSE PROGRAMS' SHARE OF GROSS NATIONAL PRODUCT



SEA = SOUTHEAST ASIA COSTS

CHART II.B.2

COMPARATIVE SIZE AND ALLOCATION OF US AND SOVIET ECONOMIES



essential that trade policies be devised with full awareness of the security interests at stake. Western trade with Eastern Europe and the Soviet Union contributes to the economic strength of these communist countries, and thus inevitably to their ability to support military programs. Although the West may gain some economic benefits from these trade relations, leaving them to be determined by the private market forces is bound to work to the disadvantage of the West. Our East-West trade policies should take into account our larger strategic interests. The assistance East-West trade provides to Soviet military growth increases the threat to our security, the costs of our defense, or both.

Our willingness to do business with the Soviet Union should not be independent of Soviet behavior. For example, when Soviet policy brings about the suppression of the right of peoples in neighboring countries, as now in Poland, inaction by the United States and its allies in the spheres of trade and credits would signal acquiescence. Fortunately, the United States has not been inactive.

Western financial credits and grain sales clearly have helped the performance of the Soviet economy by conserving Soviet hard currency and supplying what Soviet agriculture cannot supply. In this connection, it is important to note that the Soviets have had exceedingly bad wheat harvests in three consecutive years. Western technology transfers to the Soviet Union--even in cases in which they do not seem to have any direct military application--permit the Soviets to put their own engineers to work on military research and development and, thus, reduce the "opportunity cost" of the Soviet military program.

Western purchases of Soviet raw materials contribute hard currency which the Soviets can use to acquire additional Western technology. Large extensions of Western credit simultaneously support Soviet purchases and create on our side an interest in seeing the debtor remain solvent.

In making East-West trade relations more consistent with Western security objectives, the United States tries to coordinate our policies with those of our allies. Unilateral American restrictions on economic relations with the Soviet bloc are usually less effective than joint actions. Although we recognize that our European allies and Japan sometimes see these matters differently, we will press for a greater recognition within our alliances of the national security stakes involved in East-West trade, even for "non-military" goods.

The large scale effort undertaken by the Soviet Union to acquire Western technology weakens our position in the military competition. This highly coordinated Soviet effort is essentially a raid on our technology base. The Soviets gain access to Western technology through a variety of channels, both legal and illegal. Under the guise of purchases for benign, civilian uses, the Soviets have obtained a wide range of equipment and technological know-how critical to their military program. Where they have failed to get what they want openly, they have resorted to a well-coordinated illegal acquisition program.

Until now, the West has failed to respond adequately to this challenge. Our export controls have been loose and our enforcement programs lax. Too many loopholes in our international control system have persisted. Clearcut violations of international export laws have been forgiven and forgotten. Violators, when caught, either have not been punished or got off with modest fines. As a result, the Soviet raid on our technology base has not only continued--it has increased in scope.

The laissez-faire attitude of the last decade has helped the Soviets to develop new generations of smart weapons, to dramatically improve their airlift capability, to make their nuclear weapons more accurate, and to enhance their command and control with better computers and communications. Technology for military use acquired from the West includes high-speed computers used in weapons systems design, signal processing, command and control, and intelligence gathering; semi-conductor manufacturing know-how that makes Soviet weapons more reliable and precise; and guidance technology for aircraft, ships, submarines, and missiles. The Soviets have also acquired precision machine tools and sophisticated manufacturing process information for use in improving their industrial base.

Such exploitation of the technological creativity and inventiveness of free Western societies allows the Soviet Union to save billions of rubles and years of research time. By acquiring proven technology, the Soviets can avoid costly mistakes. The Atlantic Alliance and Japan rely on a voluntary organization called "Coordinating Committee," or COCOM, to control the flow of technology to the East. This system, however, has serious weaknesses. Under COCOM auspices, shipbuilding, heavy vehicle, and micro-electronic manufacturing processes have been legally exported to the Soviet Union. These legal acquisitions are complemented by even more far-reaching illegal acquisitions. For example, the Soviets often used non-aligned or neutral nations as a clearing house for embargoed goods. The Soviet acquisition of Western technology is guided by a comprehensive intelligence system, focused on emerging technologies--computer memory, large-scale integrated circuits, genetic engineering, fracture mechanics, and superplasticity--all of which are potentially of high military value.

This Administration is taking measures to protect our technology more effectively. To strengthen and enforce COCOM restrictions, the President has called for a high-level COCOM meeting, the first since the early 1950s, to tighten the international control structure and encourage a more active enforcement role among member nations. We are participating in a special military subcommittee to identify military uses of technology that have been neglected in the past and refine the strategic criteria under which the COCOM system operates.

The long-term competition between the Free World and the Soviet bloc will also be affected by economic developments shaping our own economy and the economies of our allies. The continuing security of our alliances will depend on increasing military contributions from our prosperous allies. The countries of Western Europe in the past decade have faced particular economic difficulties because of the sudden escalation of energy costs. The longer-term growth of their economies may be slowed by their concentration in relatively "mature" industries rather than in more dynamic areas built around newer technologies. This Administration recognizes that defense requirements in times of economic stress pose difficult political and economic choices for the West European governments and people, as they do for the United States.

Japan and other East Asian countries, by contrast, have experienced rapid economic growth, and have become major trading partners for the United States. Hence, these countries are becoming increasingly capable of larger military efforts for their own self-defense. It is essential for the health of the Free World that this potential be realized.

PROGRAMS

A. LAND FORCES

1. Introduction

a. Force Structure

The land forces of the United States consist of the active and reserve forces of the Army and the Marine Corps. These forces are designed to assist in deterring war; should deterrence fail, they are structured and equipped to conduct ground combat to defeat the enemy. To fulfill these tasks, we maintain strong deployments in Europe and the Western Pacific, forward deployments afloat, and rapidly deployable reserves in the United States. Our forces provide the capability to engage the enemy at all levels--from counter-terrorism operations to full-scale combat against a heavily armed enemy.

We remain mindful of the consequences of failure to be prepared for war in Europe and of the increasing proliferation of sophisticated weapons throughout the world. Accordingly, a large portion of our force--particularly the Army's armored and mechanized divisions--is designed and equipped primarily to oppose armor-heavy, tactically mobile forces. A smaller portion of the force--including the Army's 82nd Airborne Division, ranger battalions, and the three active Marine divisions (as part of a Marine Air/Ground Task Force)--is configured and trained primarily for rapid-response and forcible-entry operations worldwide. Each element of the force is dependent on reinforcement and logistics support to conduct sustained combat operations.

In structuring our land forces, we seek to strike the appropriate balance between heavy and light forces and to improve the capabilities and responsiveness of both. This presents a dilemma for our deployment strategy: those forces that are most rapidly deployable are least suited for large-scale combat against heavily armored forces. The more capable mechanized and armored divisions place a severe strain on our strategic airlift resources and must be moved and supported primarily by sealift.

To help resolve this problem, we are seeking to increase the armor-defeating capability of our lighter forces while maintaining their rapid-deployment capability. Because deploying the support elements for our forces--whether heavy or light--also poses problems for our mobility forces, simply making a division "light" will not completely remedy the situation. Therefore, we are pursuing programs to preposition heavier equipment near potential trouble spots to ameliorate this problem.

b. Force Composition

Our land forces consist of 28 divisions, of which 19 (16 Army and 3 Marine Corps) are active and 9 (8 Army and 1 Marine Corps) are Reserve Components. These divisions (about 18,000 men each), supplemented by separate nondivisional brigades and regiments (4,000-5,000 men each) and by separate artillery, aviation, and maneuver battalions (500-1,000 men each), form the cutting edge of our land forces. They are supported by a wide variety of active, reserve, and host-nation support units and are backed by an extensive training and support base. Fiscal constraints will require our active forces to continue to rely on Reserve Components to reach their full combat potential. Of our 19 active divisions, 8 require roundout by reserve combat battalions and brigades to reach their full complement.

c. Force Disposition

Chart III.A.1 depicts the location of all active and reserve divisions. In addition to the major deployments shown, three brigades of CONUS-based Army divisions are forward deployed in Europe, and one regiment of the Okinawa-based Marine division is stationed in Hawaii. In addition, the Army maintains 3 separate brigades and regiments in Europe, 4 active and 25 reserve brigades and regiments in CONUS (not involved in roundout), plus one brigade each in Panama and Alaska.

2. FY 1983-87 Program

a. Program Objectives

The primary goal of our five-year program is to improve the combat capability of our existing ground forces. As a result, no significant expansion of our ground forces is planned. We seek to balance the force structure in order to improve responsiveness to both NATO and non-NATO contingencies; to improve the sustainability of our forces, not only in Europe but in other theaters worldwide; and to modernize our forces to enhance their effectiveness. The details of the program initiatives we are undertaking to accomplish these objectives are discussed below.

b. Program Initiatives

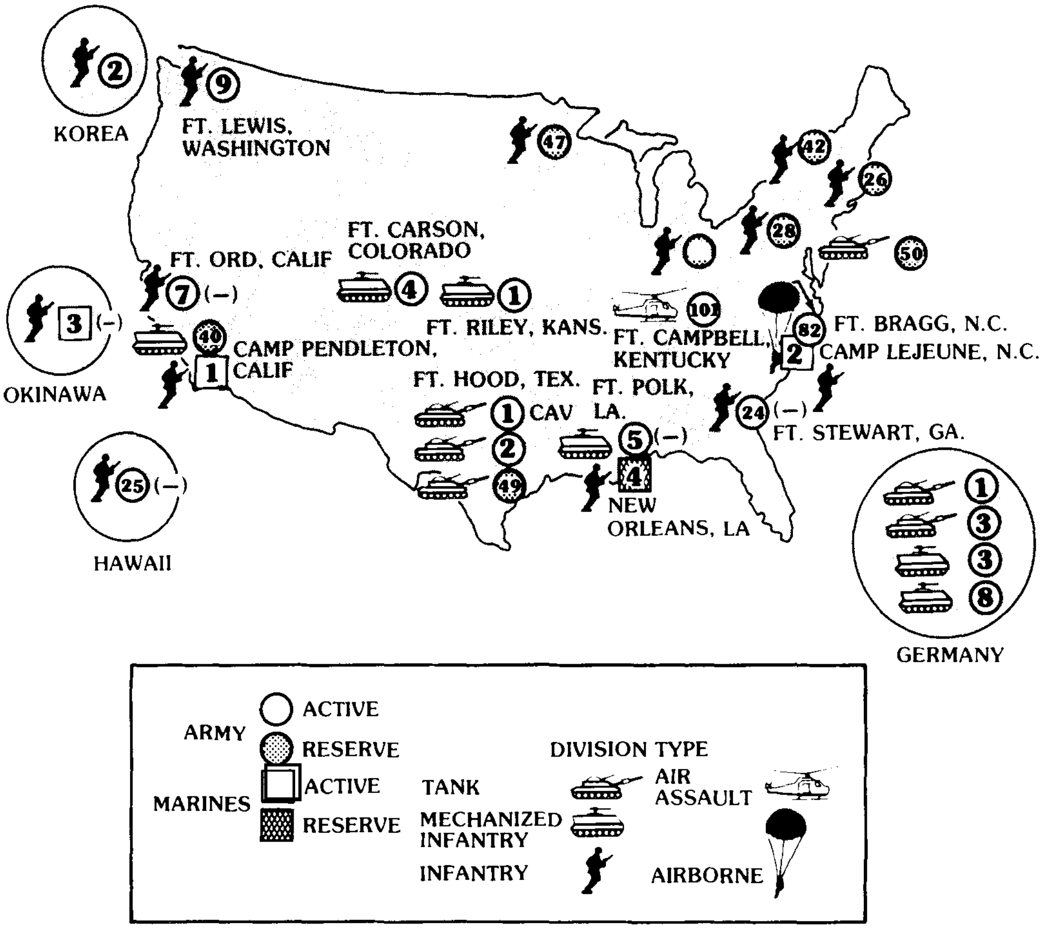
(1) Balance Force Structure to Improve Responsiveness

The Army will continue to increase the density of 155mm self-propelled howitzers in its European-based artillery battalions. In FY 1983, these battalions will be restructured from 18 to 24 howitzers. In FY 1982, the Marine Corps will complete the procurement of M198 155mm towed howitzers to replace 105mm towed howitzers in its three active divisions and to permit the formation of a second general support artillery battalion in each active artillery regiment by FY 1986.

The Army will reactivate 13 rifle companies of the 9th and 25th Divisions and activate one Air Defense Artillery battalion (Patriot). It will also reorganize portions of the 101st Airborne Division (Air Assault) to provide increased capabilities for forward support of fuel and ammunition, communications, anti-armor, and air defense.

CHART III.A.1

DEPLOYMENT OF U.S. LAND FORCES



In FY 1982, the Marine Corps is activating nine additional Forward Area Air Defense (FAAD) platoons. Twelve platoons will be operational when these activations are completed. In FY 1984, it will begin activation of nine additional TOW platoons, doubling each division's TOW capability by FY 1986.

The Marine Corps plans to form a Light Armored Vehicle (LAV) battalion in each of its active divisions. (Personnel for the new battalions will be provided primarily by reducing and restructuring infantry battalions.) The first battalion will achieve initial operating capability (IOC) in FY 1983; the remaining battalions will be operational by FY 1986. The Army plans to equip two existing battalions of each infantry division with LAVs, with a planned IOC of FY 1984.

The Army's 9th Infantry Division is being used as a test-bed for evaluating new technology and doctrine to balance combat power with strategic mobility. The Army is continuing to equip the division with modern anti-armor weapons and high-technology systems to test how these might improve its combat power, survivability, and tactical and strategic mobility. If successful, these concepts could be extended to other Army divisions.

We are continuing programs to preposition equipment and supplies for CONUS-based Army and Marine Corps units in Europe and Southwest Asia. Prepositioning speeds deployment to these areas in time of crisis by significantly reducing strategic lift requirements. (The details of our prepositioning programs are described in Part III.G.)

(2) Improve Force Sustainability

Ammunition procurement, which has been underfunded in recent years, has been given increased emphasis in our FY 1983-87 program. Our program provides funds to build our inventory of war reserve munitions to levels sufficient to support U.S. and Republic of Korea (ROK) forces; sustain our forces in Europe; and sustain U.S. forces in a non-NATO contingency.

(3) Modernize Forces

Our force modernization program capitalizes on the growth in funding initiated in the FY 1981 Budget Supplemental and FY 1982 Budget Amendment. In applying these additional funds, we seek to procure systems at more efficient production rates, thereby promoting program stability and holding down unit costs. Accordingly, we will accelerate the deployment of new systems and begin to eliminate critical shortages in existing equipment.

(a) Close Combat

To counter Soviet advances in armored combat systems, we must develop and field improved systems capable of defeating enemy armor while providing our forces with increased firepower, tactical mobility, and survivability.

M1 ABRAMS Tank--The Army initiated procurement of the M1 battle tank in FY 1979; increased funding, commencing with the FY 1981 Budget Supplemental, has been used to accelerate its deployment schedule. The FY 1982 program will increase the production rate from 30 to 60 tanks per month by November 1982; by January 1985, the production rate will increase to 90 tanks per month. By the end of FY 1987, this accelerated schedule will enable the Army to procure 30 percent more M1s than previously programmed. This will allow the Army fully to equip 7 of its 10 active armored/mechanized divisions by the end of the program period. The Army will achieve its acquisition objective of 7,058 M1s during the FY 1988 Funded Delivery Period (FDP) and reach its tank acquisition objective of 15,106 units during the FY 1987 FDP.

The Bradley Fighting Vehicle System (BFVS), consisting of the Infantry Fighting Vehicle (IFV) and the Cavalry Fighting Vehicle (CFV), is an out-growth of the Mechanized Infantry Combat Vehicle Program. Our program will increase the production rate from 50 to 90 vehicles per month by the end of FY 1986. By the end of FY 1987, 6 of our 10 active armored/mechanized divisions will have the BFVS. The Army's initial operating objective of 6,882 vehicles will be achieved during the FY 1990 Funded Delivery Period.

Amphibious Assault Vehicle (LVT)--The Marine Corps will continue its program to procure 382 additional amphibious assault vehicles (product-improved version) to support maritime prepositioning requirements for three brigades. Concurrently, it will continue a service life extension program to improve its existing LVT-7 fleet.

Light Armored Vehicle (LAV)--The Marine Corps and Army plan to initiate procurement of light armored vehicles to increase the ground combat mobility and firepower of their light infantry units. Current plans call for joint-service procurement of a single off-the-shelf vehicle, with several system variants.

TOW Missile System--The Army and Marine Corps will continue procurement of the TOW anti-tank missile with an improved warhead and guidance system. Concurrently, existing missiles will be retrofitted with these improvements. The improved version will be capable of defeating advanced-technology armor.

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
CLOSE COMBAT PROGRAMS				
M-1 Tank				
Development:				
$ Millions	113.0	111.1	66.3	61.3
Procurement:				
Quantity	569	665	776	1,080
$ Millions	1,482.2	1,659.8	2,025.0	2,634.9
IFV/CFV				
Development:				
$ Millions	41.7	103.4	50.5	33.5
Procurement:				
Quantity	400	600	600	555
$ Millions	668.7	918.0	872.4	846.1
LVT				
Procurement:				
Quantity	--	34	168	171
$ Millions	12.0	63.9	151.9	163.5
LAV				
Development:				
$ Millions	17.9	10.0	11.2	9.8
Procurement:				
Quantity	--	38	392	590
$ Millions	--	36.2	209.8	309.3
TOW Missiles				
Procurement:				
Quantity	12,000	14,666	13,000	20,371
$ Millions	100.9	141.9	174.1	277.5

(b) Helicopters

Helicopters enhance the firepower and tactical mobility of our land forces. The primary objective of our modernization program is to improve the survivability and enhance the effectiveness of our attack and utility helicopters.

Attack Helicopters--The AH-1 COBRA, equipped with the TOW anti-armor missile, is our primary attack helicopter. The Army will continue developments to enhance the survivability of the 700 AH-1S COBRA/TOW aircraft presently in its inventory. Concurrently, it will field the AH-64 APACHE advanced attack helicopter. The AH-64 will be able to operate at high altitudes and in adverse weather conditions and will possess significantly improved firepower by virtue of its 30mm gun, 2.75-inch rockets, and new HELLFIRE anti-armor missile system.

Utility Helicopters--The UH-1 (Huey) has been the mainstay of our utility helicopter force for more than a decade. Since 1979, we have been pursuing a modernization program to replace the UH-1 with the more capable and survivable UH-60A BLACKHAWK in selected Army units. The current program will provide 16 percent more BLACKHAWKS to the force during FY 1982-84 than previously planned.

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
HELICOPTER PROGRAMS				
AH-1S Modification				
Development:				
$ Millions	2.5	19.6	12.3	4.5
Procurement:				
$ Millions	167.9	77.3	37.4	49.7
AH-64				
Development:				
$ Millions	172.9	91.9	33.7	39.4
Procurement:				
Quantity	--	11	48	96
$ Millions	58.8	544.0	965.0	1,440.6
HELLFIRE				
Development:				
$ Millions	51.5	24.2	19.3	0.3
Procurement:				
Quantity	--	680	3,971	6,218
$ Millions	25.7	114.1	249.2	255.1
UH-60				
Procurement:				
Quantity	80	96	96	84
$ Millions	486.5	613.0	733.0	545.8

(c) Air Defense

Since technology has not yet provided a weapon system that can counter all types of air threats (aircraft, helicopters, and missiles), we must develop a balanced and integrated family of ground-based and airborne air defense systems. To be effective, these systems must be supported by radars, command and control systems, and electronic warfare equipment, and augmented by passive techniques such as camouflage, decoys, and dispersion. Our ground-based air defense systems are designed to provide a balanced mix of weapons with complementary capabilities.

The STINGER is a man-portable, shoulder-fired, infrared guided missile system designed to defend against low-altitude attacks at short ranges. The system is being procured by the Army and Marine Corps to replace existing REDEYE weapons.

The DIVAD Gun is a self-propelled 40mm air defense weapon that employs radar acquisition and tracking for all-weather and day/night engagements. In addition, it possesses a complementary computer-aided optical system with a laser range finder. The DIVAD Gun will replace the 20mm VULCAN in air defense artillery battalions of Army mechanized and armored divisions. The acquisition objective of 618 systems will be achieved during the FY 1987 Funded Delivery Period.

PATRIOT, the Army's advanced radar-guided air defense missile system, is designed to conduct multiple simultaneous engagements against high-performance aircraft. The PATRIOT's trainable, multi-function, electronically scanned, phased-array radar gives it a significant electronic counter-countermeasure (ECCM) capability.

CHAPARRAL, the short-range air defense missile organic to most active Army divisions, will remain in service through the 1990s. We will replace the propellant in aging rocket motors reaching the end of their shelf-life, modify the system with forward-looking infrared (FLIR) for engaging targets at night and in poor weather, and develop a guidance system with high resistance to infrared countermeasures.

Improved HAWK--Development efforts are being continued to improve the capability of Army and Marine Corps HAWK systems to operate effectively in an electronic countermeasures (ECM) environment. Funds are also provided for replacement missile motors and modifications to improve system reliability, availability, and maintainability.

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
AIR DEFENSE PROGRAMS				
STINGER				
Development:				
$ Millions	5.7	16.1	--	--
Procurement:				
Quantity	1,415	3,032	3,816	4,733
$ Millions	101.0	232.8	330.3	374.0
DIVAD				
Development:				
$ Millions	65.2	30.0	10.9	--
Procurement:				
Quantity	--	50	96	130
$ Millions	138.0	376.2	673.9	747.8
PATRIOT				
Development:				
$ Millions	75.4	57.8	47.1	86.1
Procurement:				
Quantity	130	176	376	664
$ Millions	462.2	755.1	881.0	1,127.4
CHAPARRAL				
Development:				
$ Millions	22.9	19.6	26.4	24.5
Procurement:				
Quantity	--	--	--	--
$ Millions	82.6	89.1	32.5	13.1
Improved HAWK				
Development:				
$ Millions	9.5	39.4	38.0	27.1
Procurement:				
Quantity	--	388	--	138
$ Millions	51.5	187.2	108.1	152.2

(d) Artillery Fire Support

Our land forces are numerically outgunned by Soviet artillery. To redress this imbalance, we are undertaking programs to improve target acquisition, fire control, and laser designation for modern munitions, and to provide improved weapons to our force and additional munitions to our stockpile.

Target Acquisition--The Army has initiated the Battlefield Data System (BDS) development program to satisfy its requirements for surveillance and target acquisition. The Remotely Piloted Vehicle (RPV) now in development will provide a capability to locate targets, adjust artillery fire, and designate targets for laser-guided weapons.

Fire Control--The TACFIRE fire control system will be improved to maintain its effectiveness into the 1990s by enhancing communications management and reducing the size and weight of the Fire Direction Center. Another improvement in the fire support area is the Battery Computer System now in procurement. This small computer provides firing data for individual guns in a battery, thus enhancing battery survivability by enabling optimal use of protective terrain tactics.

The Artillery Computer System (ACS), currently under development by the Marine Corps, is a lightweight computer that operates on internal batteries. It will be employed by firing batteries.

Laser Designators/Munitions--Laser designators will be used to illuminate and designate targets for COPPERHEAD, HELLFIRE, laser-guided bombs, and projectiles. The Ground Laser Locator Designator (GLLD) and the Modular Universal Laser Equipment (MULE) are currently in procurement.

The COPPERHEAD, a 155mm laser-guided projectile, will improve the capability of artillery against armored targets. Our program will provide 46 percent more COPPERHEAD projectiles than previously planned during FY 1982-84. An IOC of FY 1982 is scheduled.

Weapons--The Multiple-Launch Rocket System (MLRS) is a high-rate-of-fire general support artillery rocket system designed to counter enemy artillery, to suppress enemy air defenses, and to supplement cannon artillery fires. An IOC of FY 1983 is scheduled.

Procurement of the M198 155mm towed howitzer will be completed in FY 1982. The M198 will replace the 105mm and 155mm (M114A1) towed howitzers in selected Army light infantry and Marine divisions. The M198 has 50 percent greater range and better reliability than the existing M114A1.

Ammunition--In FY 1983, we will continue to build our inventories of improved conventional munitions (ICMs), rocket-assisted projectiles (RAPs), propelling charges for new long-range weapons, and scatterable mines. We are requesting $661.6 million in FY 1983 to procure these items for 155mm and 8-inch artillery.

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
ARTILLERY FIRE SUPPORT PROGRAMS				
BDS				
Development: $ Millions	--	--	27.9	43.1
RPV				
Development: $ Millions	63.1	77.6	83.7	117.2
TACFIRE				
Development: $ Millions	2.1	5.9	7.3	28.4
Procurement: $ Millions	86.9	--	--	--
Battery Computer System				
Procurement: Quantity	168	217	147	146
$ Millions	34.9	45.4	28.2	29.9
ACS				
Development: $ Millions	--	--	1.9	.7
Procurement: Quantity	--	--	--	161
$ Millions	--	--	--	11.8
GLLD				
Procurement: Quantity	90	240	250	209
$ Millions	21.3	58.7	45.4	45.6
MULE				
Procurement: Quantity	--	40	120	120
$ Millions	--	21.2	47.8	16.8
COPPERHEAD				
Development: $ Millions	6.0	3.3	2.1	--
Procurement: Quantity	3,125	4,550	8,420	8,320
$ Millions	117.6	141.1	204.5	187.4

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
MLRS				
Development:				
$ Millions	69.9	38.2	23.2	--
Procurement:				
Quantity (Rockets)	2,340	2,496	23,640	36,000
$ Millions	115.6	205.6	444.4	584.8
M198				
Procurement:				
Quantity	228	359	--	--
$ Millions	71.8	131.3	--	--

Artillery Ammunition

	FY 1983			
	USMC		ARMY	
Type Round	$ Millions	Quantity	$ Millions	Quantity
155mm ICM	131.7	237,000	237.3	428,000
155mm RAP	--	--	17.7	24,000
155mm Scatter-able Mines	95.3	32,000	156.5	72,000
155mm Propelling Charges	50.9	474,000	45.3	699,000
8-Inch RAP	.5	1,000	44.9	28,000
8-Inch ICM	53.4	43,000	104.2	88,000

(e) Tactical and Support Vehicles

The Army and Marine Corps will continue to upgrade their tactical wheeled vehicle fleets as well as to remedy the severe problems caused by shortages and over-age, over-mileage vehicles. Efforts are under way to implement the findings of the 1980 Army Tactical Wheeled Vehicle Requirements Study. Concurrently, the Army is embarking on a major program to replace commercial vehicles that are used for a variety of tasks. These vehicles are a critical adjunct to the tactical fleet, because their use reduces mileage and wear on expensive and scarce tactical vehicles, resulting in higher operational ready rates.

High Mobility Multi-Purpose Wheeled Vehicle (HMMWV)--The Army and Marine Corps will begin selective replacement of tactical vehicles in the 1/4-ton to 1-1/4-ton range with the 5/4-ton HMMWV. This highly mobile vehicle, currently under development contract, will have a common chassis with three variants--weapons carrier, utility, and ambulance--that can be configured for specific mission needs by the application of modification kits.

Commercial Utility and Cargo Vehicle (CUCV)--The CUCV family of vehicles will complement the HMMWV by replacing vehicles operating in less-demanding tactical environments. The CUCV is a 5/4-ton, commercial off-the-shelf vehicle that will be procured in cargo, ambulance, and utility versions.

5-Ton Truck--The M939-series 5-ton truck is a product-improved version of the M813 series being procured by the Army and Marine Corps.

10-Ton Heavy Expanded Mobility Tactical Truck (HEMTT)--The Army will continue to procure a new series of 10-ton trucks. The HEMTT is a high-mobility vehicle assembled from commercially proven components and produced in five body styles for use in a variety of combat and combat support units. In FY 1982, the Marine Corps initiated procurement of the Logistics Vehicle System, a HEMTT variant with four interchangeable rear body units, in lieu of several trucks and trailers previously planned. This program will accelerate by about 18 months the start of the Marine Corps' replacement of its heavy vehicle fleet.

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
TACTICAL AND SUPPORT VEHICLE PROGRAMS				
HMMWV				
Development:				
$ Millions	4.7	--	2.7	--
Procurement:				
Quantity	--	--	2,550	9,648
$ Millions	--	--	79.0	274.7
CUCV				
Procurement:				
Quantity	--	3,522	13,950	24,633
$ Millions	--	43.1	190.1	328.9

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
5-Ton Truck				
Procurement:				
Quantity	190	3,710	5,139	3,615
$ Millions	82.7	305.6	408.5	281.7
10-Ton Truck				
Procurement:				
Quantity	635	1,274	2,370	1,335
$ Millions	90.3	194.5	374.1	219.5

(f) Tactical Communications, Signal, and Electronic Intelligence

Command, control, communications, and intelligence (C^3I) programs for our land forces are designed to improve our force management capabilities; to enhance interoperability, survivability, and restorability of essential C^3I functions; and to exploit the enemy's use of electronic emitters. Three programs--Joint Tactical Communications (TRITAC), Joint Tactical Fusion Program (JTFP), and Joint Interoperability of Tactical Command and Control Systems (JINTACCS)--are discussed in Part III.F. Other key C^3I programs are:

Ground Mobile Forces (GMF) Satellite Communications--The GMF program is designed to provide reliable, jam-resistant communications support to deployed commanders independent of terrestrial extension. The Army, Air Force, and Marine Corps will procure several hundred of the various types of transportable terminals, as well as supporting equipment.

Single-Channel Ground and Airborne System VHF (SINCGARS-V)--The SINCGARS-V program will provide secure, ECCM-capable VHF radios to replace current vehicular, manpack, and aircraft tactical VHF radios. Some 240,000 radios will eventually be procured for all four Services.

Position Location Reporting System (PLRS) and PLRS/Joint Tactical Information Distribution System (JTIDS) Hybrid--The PLRS, currently under development by the Army and Marine Corps, will provide combat commanders with automatic, near real-time, precise location of their forces on the battlefield, regardless of terrain, weather, or geographical location. The PLRS/JTIDS hybrid is intended to satisfy the Army's requirements for secure, jam-resistant battlefield data distribution among command and control, intelligence, surveillance, target acquisition, and weapons systems.

Electronic Combat Jamming System--To increase its ability to jam enemy communications, the Army is continuing production of additional MLQ-34s (TACJAM) with FY 1982 funds, procuring VLQ-4 applique jeep-mounted PIRAHNA jammers, and initiating a contract for EH-60 electronic warfare helicopters to be delivered in FY 1984. It will protect its helicopters and special-mission fixed-wing aircraft against radar, infrared, and other electronically guided missiles and guns by procuring additional aircraft survivability equipment, including radar/laser/missile warning receivers, infrared and radar jammers, and dispensers for chaff and flare decoys.

Tactical Intelligence--Principal tactical intelligence modernization programs include continued procurement of the Improved GUARDRAIL V, improvements to the TRAILBLAZER (TSQ-114A), and a tactical fusion system.

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
TACTICAL COMMUNICATIONS, SIGNAL, AND ELECTRONIC PROGRAMS				
GMF Sat Comm				
Development: $ Millions	10.2	16.5	17.5	24.0
Procurement: $ Millions	70.6	98.8	112.7	71.9
SINCGARS-V				
Development: $ Millions	25.1	13.7	17.9	16.7
Procurement: Quantity	--	--	600	1,970
$ Millions	--	--	19.8	21.8
PLRS and PLRS/JTIDS				
Development: $ Millions	27.6	28.3	42.3	26.0
Procurement: $ Millions	--	2.4	3.2	4.3

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
Electronic Jamming				
Development: $ Millions	18.8	35.6	30.1	69.8
Procurement: $ Millions	61.0	111.2	45.1	98.3
Tactical Intelligence				
Development: $ Millions	26.7	14.1	25.2	32.4
Procurement: $ Millions	135.2	127.4	186.0	189.3

B. NAVAL FORCES

1. Introduction

The logical implications of a global strategy, combined with the need to defend our interests and support our forces in distant parts of the world, lead to a clear need for increased U.S. naval power. Our FY 1983-87 program, therefore, contains a significant increase in the number of new ships, aircraft, and weapons procured for the Navy. At the same time, we are emphasizing initiatives that will enhance the near-term readiness of our forces and improve their sustainability. I believe our program strikes a reasonable balance between near-term needs and long-term goals, while seeking to maintain a favorable trend in the naval balance.

a. Program Goals

Our primary goal is to establish and maintain maritime superiority over any likely enemy taking due account of both his allies and ours. This goal dictates an increase in U.S. naval power. We intend to expand our forces while simultaneously pursuing a balanced program that will improve their readiness in both the near and the long terms.

Our program meets four key objectives:

- increasing the offensive striking power of the fleet;
- improving day-to-day fleet readiness and sustainability;
- strengthening our anti-submarine and anti-air defenses; and
- modernizing our existing forces while making major increases in the number of fleet ships and aircraft.

b. Changes in Fleet Size and Force Structure

We now aggregate our most capable and ready naval forces for sea control and power projection into a new "deployable battle force" category, shown in Table III.B.1. The Navy's current force level goals are addressed in the context of this new counting method, which focuses on those ships that are manned, trained, and materially ready for wartime deployment.

TABLE III.B.1

Deployable Battle Forces 1/
(End FY 1982)

Aircraft Carriers	13
Battleships	0
Cruisers/Destroyers	112
Nuclear Attack Submarines	91
Diesel Attack Submarines	5
Amphibious Ships	65
Frigates	86
Patrol Combatants	6
Mine Warfare Ships	3
Mobile Logistic Ships	71
Combat Support Ships	23
Strategic Ships	39
Total	514

1/ Includes appropriate Naval Reserve Force (NRF) and Navy Fleet Auxiliary Force (NFAF) ships.

When this Administration took office, our deployable battle force numbered 479 ships. By the end of FY 1982, this number will increase to 514 ships. This includes the first 4 of an eventual 24-ship Naval Reserve Force composed of FF-1052s and FFG-7s. Counting our sealift, auxiliary, and reserve mobilization ships brings the total force to 569 ships. Current projections show the deployable battle force will grow to about 610 ships and the total operating inventory to about 640 ships by the early 1990s. By that time, nearly all the ships in our five-year shipbuilding plan (FY 1983-87) will have joined the fleet.

The threat is dynamic, and the many possible conflict scenarios require different naval strategies. In view of these variables, it is neither possible--nor appropriate--to state with precision that a certain number of ships is adequate for all purposes--or for all circumstances. We will continue to take into account other important factors that, in the aggregate, have a greater impact on overall capability than numbers of ships alone. These include current force readiness and sustainability, personnel training and morale, the types and capabilities of aircraft and ships, and allied naval force contributions.

2. FY 1983-87 Navy Programs

a. Anti-Air Warfare Programs

Soviet anti-ship cruise missiles (ASCM) pose a serious threat to our naval forces and sea lines of communication (SLOC). Soviet capabilities are improving across the entire spectrum of launch platforms. Soviet Naval Aviation (SNA) can threaten our naval forces over a large part of the world's ocean area.

Our forces employ a defense-in-depth approach that consists of an outer defense zone, a surface-to-air missile (SAM) area defense zone, and a point defense zone. Our proposed program will upgrade our capability in each of these zones.

Our preferred approach is to destroy enemy bombers before they can reach ASCM launch range by striking their bases or by destroying them in transit. Where geographically feasible, barriers composed of land-based interceptors and surveillance systems will allow attrition of Soviet bombers before they penetrate the outer defense zone of our surface forces.

Carrier-based F-14 and F-4 fighters, EA-6B electronic warfare aircraft, and E-2C airborne early warning aircraft provide the outer defense zone capability to intercept bombers before missile launch. SAM area defense capability is provided by our anti-air warfare (AAW) ships; point defense is provided by point defense SAMs, guns, and electronic warfare (EW) systems.

(1) Long-Range Surveillance Against Bombers

To destroy a significant percentage of SNA bombers before they launch air-to-surface missiles (ASMs), we must get a large portion of the fighters in our Aircraft Carrier Battle Groups (CVBGs) into position to engage the bombers. This requires improved long-range surveillance. Our Integrated Tactical Surveillance System (ITSS) program is examining options to improve our tactical warning capabilities. The system eventually developed will integrate the data obtained by individual sensors with appropriate processing, correlation, and user elements to deliver a complete surveillance product to the battle group in time to allow effective reaction to a bomber raid before missile launch.

(2) Land-Based Forces for Sea-Lane Defense

We plan to make more use of land-based fighter aircraft to strengthen our defenses against the SNA threat in the North Atlantic. With support from AWACs and British air defense forces, these aircraft will significantly improve our ability to intercept SNA bombers attempting to attack naval forces and military shipping in the North Atlantic sea lanes. We are also studying the use of long-range strategic bombers to attack Soviet surface ships and naval targets ashore.

(3) AEGIS Program

Our five-year shipbuilding program includes procurement of 17 guided missile cruisers (CG-47 class ships) and one nuclear-powered guided missile cruiser (CGN-42) with the AEGIS weapon system. This will give us a total of 25 AEGIS ships by the early 1990s. These ships will substantially increase the air defense firepower of our carrier battle groups against coordinated BACKFIRE raids and anti-ship cruise missile saturation attacks.

(4) Cruiser and Destroyer Programs

To replace the large numbers of CGs and guided missile destroyers (DDGs) that will be retired in the 1990s, we have initiated development of a new, less costly class of major surface combatant, the DDG-51. The DDG-51 class ships will be battle-group-capable escorts with anti-air, surface, and anti-submarine warfare capabilities. Their modified AEGIS system and vertical launchers will also permit them to operate independently, in protection of all types of Naval forces.

We are also modernizing our existing cruisers and destroyers to increase fleet air defense capability against the projected anti-ship cruise missile threat. Programs include conversion of TERRIER cruisers to carry the advanced STANDARD missile (SM-2) and the follow-on New Threat Upgrade Program for TERRIER and TARTAR cruisers and DDG-993 class destroyers.

(5) Close-In Defense Systems

Modernization of surface ship self-defense will continue in FY 1983 with procurement and installation of the PHALANX Close-In Weapon System (CIWS); installation of the NATO SEA SPARROW Missile (NSSM) system on carriers, destroyers (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 retrofit in NSSMs installations.

AN/SLQ-32 electronic countermeasures equipment is now being installed on combatant ships. We are requesting funds to continue development of modifications that will increase its electronic warfare capabilities. We have also requested funds to develop countermeasures to help defeat anti-ship missiles.

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
Procurement of AEGIS-Armed Cruisers				
$ Millions	1,940.5	3,016.2	3,159.8	3,366.3

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
Development and Procurement of DDG-51 Class Ships and Combat Systems				
Development: $ Millions	35.3	70.9	138.6	117.6
Procurement: $ Millions	--	--	12.4	128.1
Procurement of STANDARD Missiles				
$ Millions	305.7	456.3	695.8	831.3
Procurement of PHALANX Close-in Weapons System (CIWS)				
$ Millions	150.5	162.9	127.8	156.4
Procurement of SEA SPARROW Missiles (RIM-7M)				
$ Millions	13.9	64.4	72.9	124.8

b. Anti-Submarine Warfare (ASW)

We are proceeding with programs that will strengthen our ASW forces. The recent introduction of new types of Soviet submarines--such as the Oscar SSGN, the Alpha SSN, and the Typhoon SSBN--together with the continued production of highly capable Victor-class SSNs and Delta-class SSBNS, leaves us little margin for complacency. Accordingly, we are pursuing several programs that will strengthen our capability to defeat the undersea threat.

(1) ASW Surveillance Systems

Fixed undersea surveillance systems are a key component of our anti-submarine defenses. We are continuing a long-term program to upgrade our shore facilities to take advantage of advancements in technology.

Mobile surveillance systems complement our fixed systems by providing the necessary flexibility to respond to changes in Soviet submarine deployment patterns and by extending coverage in remote ocean areas not presently monitored by fixed systems. They would also serve as an emergency backup in the event some of our fixed systems were incapacitated. The Congress has appropriated funds in FY 1984 for the first 12 TAGOS SURTASS ships. We are requesting funds in FY 1984 to construct an additional ship, an AGOS, incorporating advanced design features.

(2) Attack Submarine Programs

I am pleased to report that many of the problems that delayed the construction of our SSN-688 class submarines now appear to be behind us. During the past calendar year, seven new attack submarines joined the fleet. The prospects for continued improvement are good.

The Congress has already authorized construction of 39 SSN-688 class submarines. We seek authorization for two more in FY 1983 and for an additional 15 through FY 1987--more than double the number requested in last January's five-year plan.

We are also proceeding with a program to modify new construction SSN-688s to carry additional cruise missiles in vertical launch tubes. Because of the significant improvement this modification adds to the offensive capabilities of our submarines, we are requesting funds to begin retrofit of earlier 688-class submarines with this important change.

We are simultaneously pursuing related sensor and weapon programs that will improve our capability to detect and defeat enemy submarines. The Submarine Advanced Combat System (SUBACS) now in development will incorporate new sensor and weapon control systems that will maintain our superiority in this area over the next decade.

(3) Maritime Patrol Aircraft

Navy studies continue to show that maritime patrol aircraft will make an important contribution to our overall ASW efforts. While we have sufficient airframes to support the present force level until the early 1990s, the force contains a large number of older-model aircraft that are much less effective than the P-3Cs. However, to free resources for other, higher-priority needs and still modernize the P-3 force, we are proposing to reduce the U.S. production rate to six aircraft in FY 1983 and five per year during FY 1984-87. To achieve an economic production rate, we are encouraging our allies to provide firm purchase plans until our own needs support procurement at higher rates.

(4) Light Airborne Multi-Purpose System (LAMPS)

A recent program review approved initial limited production (Lot I) of the SH-60B (LAMPS MK III). After completion of an operational evaluation next spring, we will review the program again, to assess the system's readiness for full-scale production. We have funded procurement of the total LAMPS program of 204 helicopters in FY 1982-85.

The local ASW helicopter for the CV battle group is the SH-3H. A LAMPS MK III derivative is programmed to replace the SH-3H. Development has started, and procurement is planned for FY 1986.

(5) Surface Combatant Tactical Towed-Array Sonar

The long-range detection capability of the new tactical towed-array sonars (TACTAS) has substantially enhanced the ASW capability of our surface escorts. We are continuing to develop the SQR-19, an advanced design TACTAS, which, when compared with earlier models, will add significantly to our capability.

(6) Torpedo Programs

(a) Lightweight Torpedoes

The MK-46 is a conventional lightweight ASW torpedo designed for launch from surface ships and aircraft. To enhance its effectiveness against modern nuclear submarines, we are buying an improved version, the Near-Term Improvement Program (NEARTIP), which includes both new torpedoes and conversion kits to upgrade our older MK-46s. The FY 1983 budget also funds continued development of a new advanced lightweight torpedo (ALWT) to replace the MK-46 and to counter the projected threat beyond the 1980s.

(b) MK-48

We are continuing production of MK-48 torpedoes for our submarines. These highly capable weapons can be used against both submarines and surface ships and provide our forces with a significant qualitative advantage. Development is also continuing on the Advanced Capability (ADCAP) modification, which will ensure MK-48 effectiveness through the remainder of this century.

(c) ASW Standoff Weapon

The Common ASW Standoff Weapon (CASW/SOW) will complement the MK-48 torpedo and allow our submarines and surface combatants to attack enemy submarines outside effective torpedo range. We plan to deploy this weapon on surface ships to replace the aging, shorter-range anti-submarine rocket (ASROC) system.

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
Procurement of TAGOS SURTASS Ships				
$ Millions	185.0	156.2	6.0	5.4
Procurement of SSN-688 Class Nuclear Attack Submarines				
$ Millions	1,121.9	1,592.6	1,732.4	2,056.9
Procurement of P-3 Patrol Aircraft (including HARPOON backfits)				
$ Millions	308.5	441.0	341.8	300.0
Procurement of SH-60B Light Multi-Purpose Systems				
$ Millions	105.0	806.7	212.0	1,408.9
Procurement of Surface Ship Towed-Array Sonar				
$ Millions	--	7.6	77.3	153.9
Acquisition and Conversion of MK-46 ASW Torpedoes				
$ Millions	63.4	151.0	169.6	262.9
Development of Advanced Lightweight Torpedo (ALWT)				
$ Millions	98.9	105.4	115.1	145.4

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
Procurement of MK-48 ASW Torpedoes and ADCAP Modification Kits				
$ Millions	98.0	121.2	125.5	136.4
Development of Common ASW Standoff Weapon (CASW/SOW)				
$ Millions	19.0	39.6	42.0	58.2

c. Crisis Management and Strike Forces

Our FY 1983-87 program funds several initiatives to improve the offensive capabilities of our naval forces. We are taking steps both to improve the firepower of our ships and to distribute our offensive striking power to a larger number of ships--thus reducing our dependence on any individual unit and complicating the problems faced by a potential enemy. Major initiatives include the construction of two new large-deck nuclear aircraft carriers, a major construction program to replace our aging amphibious ships, the reactivation of four IOWA class battleships, and accelerated procurement of TOMAHAWK and HARPOON missiles.

(1) Carrier Forces

Our five-year shipbuilding program continues construction of large-deck nuclear-powered aircraft carriers (CVN) of the highly successful Nimitz class. We have decided to request authorization of two CVNs in FY 1983--CVN-72 and CVN-73--in order to accelerate deliveries. This strategy will permit purchase of two ship sets of equipment and serial fabrication of major subassemblies. The Navy believes this approach will strengthen our vendor/contractor industrial base and accelerate the delivery of each CVN by as much as 21 months.

(2) Amphibious Forces

We are undertaking a major amphibious construction program--including procurement of three new classes of ships--to replace aging units scheduled to retire in the 1990s. New ships are also required to maintain our amphibious lift capability as the introduction of new equipment into the Marine Corps inventory raises Marine force embarkation requirements, particularly for helicopter spots and cargo space. At the same time, we are assessing our amphibious lift objectives in light of increased demands for rapidly deployable forces.

(a) Amphibious Ships

The Landing Ship Dock (LSD-41) is the only amphibious ship currently in production. It will be able to carry at least four of our new high-speed Landing Craft Air Cushion (LCAC), which will provide an improved ship-to-shore capability, or a mix of conventional landing craft. The initial LSD-41s will replace the eight LSD-28 ships scheduled for retirement in the mid-1980s. Eight ships are programmed in our five-year shipbuilding plan.

The General Purpose Amphibious Assault Ship (LHD-1), scheduled for procurement in FY 1984, represents a major new amphibious lift initiative. The two LHD-1 class ships requested in our five year plan will provide a net increase in amphibious lift capabilities. The seven helicopter landing platform ships (LPHs) now scheduled for retirement in the mid-1990s will eventually be replaced by LHDs. The LHD-1 will be based on the design of the existing LHA Amphibious Assault Ship, giving it a displacement of about 40,000 tons. Design changes from the LHA baseline will emphasize increased capability to carry LCACs and to support vertical/short take-off and landing (V/STOL) aircraft. Improved V/STOL support features are being examined to diversify and broaden the offensive aviation capabilities of the fleet.

The Landing Platform Dock (LPDX) is a notional ship, envisioned as a replacement for existing LPD-class ships. Similar in size to the LSD-41, the LPDX will carry a mixed load of troops, vehicles, cargo, LCACs, and embarked helicopters. Current programming assumes long-lead funding in FY 1987 to support authorization of the lead ship in FY 1988.

(b) Landing Craft

The LCAC program will replace existing conventional landing craft with air-cushioned craft capable of transporting troops and vehicles, including tanks, at speeds in excess of 40 knots. Authorization for three LCACs is requested in FY 1983. Progress in this program will allow us to proceed to full-rate production a year earlier than previously planned, resulting in the procurement of 12 more craft over the program period than were requested in last January's five-year plan.

(3) Battleships

Reactivation of four IOWA class battleships will allow a rapid expansion of surface combatant battle groups. Armed with TOMAHAWK and HARPOON missiles as well as 16-inch guns, these ships will make a formidable addition to our active forces.

(4) TOMAHAWK Cruise Missiles

We are significantly increasing procurement of TOMAHAWK missiles. Our program, compared with last January's plan, funds over 800 more missiles through FY

1986. This weapon, to be procured in both land-attack and anti-ship versions, will greatly enhance the long-range striking power of our submarines and surface ships.

The missiles themselves would be of little value without launch platforms. We have already touched upon the increase in submarine procurement and the start of a program to retrofit the vertical launch system (VLS) bow capability on earlier SSN-688 class ships. In addition, vertical launch systems will be installed on all but the first five new construction CG-47 class AEGIS cruisers, and we have initiated a program to retrofit vertical launch systems on DD-963 class ships, giving us the capability to put large numbers of cruise and anti-air warfare missiles at sea. Our reactivated battleships will also be equipped with TOMAHAWKs in Armored Box Launchers (ABL). The net result will be a tremendous increase in the striking power of our forces.

(5) HARPOON

In keeping with our policy of improving the offensive capabilities of our forces, we have decided to continue HARPOON production beyond 1984. Our program will procure about 1,000 more missiles in FY 1982-86 than were requested in last January's five-year plan.

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
Procurement of Aircraft Carriers (CVN)				
$ Millions	149.1	564.2	6,840.8	30.2
Procurement of LSD-41				
$ Millions	387.7	307.2	421.0	484.7
Procurement of LHD-1				
$ Millions	-0-	45.0	55.0	1,328.1
Development and Procurement of Landing Craft Air Cushion (LCAC)				
Procurement: $ Millions	42.0	98.4	66.2	144.6
Development: $ Millions	5.9	5.0	--	--

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
Reactivation of Battleships				
Procurement: $ Millions	89.0	325.0	445.4	503.0
Development: $ Millions	3.0	4.0	--	--
Procurement of TOMAHAWK Missiles				
$ Millions	190.0	236.3	308.4	620.0
DD-963 VLS Backfit				
$ Millions	-0-	65.8	40.8	112.8
Procurement of HARPOON Anti-Ship Missiles				
$ Millions	219.2	234.1	266.7	354.2

d. Escort and Support Forces

Projected retirements of surface combatants and mine warfare ships require an aggressive shipbuilding program to prevent a serious reduction in our force levels in the early 1990s. Our shipbuilding program contains a number of initiatives to start us on the path to recovery, including reactiviation of four battleships and construction of DDG-51 and DD-963 class destroyers, CG-47 class cruisers, FFG-7 guided missile frigates, and new ships for our mine warfare forces.

Our aging underway replenishment force must also be modernized and expanded. Our five-year shipbuilding program adds 18 more underway replenishment ships than were funded in last January's plan. We will pursue a balanced program that not only increases our combatant force but ensures that it is adequately supported.

(1) Guided Missile Frigates

We have programmed funds in FY 1983 to procure two FFG-7s. We plan to continue construction of this useful and relatively inexpensive ship to meet our escort needs for other than carrier battle groups. Earlier ships of this class in a LAMPS I/TACTAS configuration will be transferred to the Reserve force. This will provide a significant increase in ASW forces for wartime mobilization.

(2) Destroyers

Three additional DD-963 class ships are included in the five-year shipbuilding plan in anticipation of increased carrier force levels and attendant greater ASW force requirements. We believe additional construction of these highly efficient ships is a reasonable and cost-effective way to provide ASW capability for battle group and other surface combatant ASW duties such as convoy escort.

(3) Multi-Product Ships

Multi-product ships (AOE/AOR) carry POL, ammunition, and stores for carrier battle groups. Our goal is to have one multi-product ship operate as a station ship for each carrier. Beginning in FY 1985, we will procure four additional multi-product ships.

(4) Fleet Oilers

After reviewing our needs, we have decided to increase construction of fleet oilers (T-AOs). We now plan to buy 19 of these ships. These ships will do much toward meeting the future needs of our forces. Their addition, together with the retirement of older ships, some of which are approaching 40 years of service life, will reduce the average age of our oilers from about 29 years at the end of FY 1982 to about 9 years at the end of FY 1990. They will be manned with Military Sealift Command (MSC) personnel to improve their utilization rate while minimizing demands on active-duty personnel.

(5) Salvage Ships

We are requesting funds in FY 1983 for the fourth of five salvage ships (ARS). These ships, incorporating improved towing and salvage capabilities, will enable us to provide continued support to forward-deployed forces.

(6) Fleet Tenders

To alleviate the projected shortfall in surface fleet tenders in the late 1980s, we have added two destroyer tenders (AD) to our shipbuilding program--one in FY 1986 and the other in FY 1987.

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
Procurement of Guided Missile Frigates (FFG-7)				
$ Millions	1,602.0	1,001.6	761.6	846.1

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
Procurement of Fleet Oilers				
$ Millions	--	257.1	321.8	531.1
Procurement of Fleet Support Ships				
$ Millions	93.0	134.2	88.6	74.8
Conversion of Ships for Fleet Support				
$ Millions	45.3	411.1	327.3	57.4

(7) Mine Warfare Forces

The Soviet Union maintains a large inventory of mines, including a significant number of advanced types. Our fleet of 25 aging oceangoing minesweepers (MSOs), all but three of which are assigned to the Naval Reserve Forces, is only marginally effective against this threat. We also have fewer airborne mine countermeasures helicopters than our objectives require. We are programming to make needed improvements in these forces, as are our allies.

We are also taking steps to improve our offensive mining capability by developing and procuring several new types of mines. These relatively low-cost weapons will provide an effective means of denying the use of key areas to hostile forces.

(a) Mine Countermeasure (MCM) Ships

New MCM ships, incorporating improved minesweeping, hunting, and neutralization systems, will provide a much-needed capability to deal more effectively with the Soviet deep-water threat. We have accelerated the procurement schedule and plan to buy 13 MCM ships through FY 1985, 4 of which are funded in FY 1983. A new class of smaller mine hunters, the MSH-1 class, will augment the MCM ships during initial clearance and harbor breakout operations. Authorization of the lead ship is scheduled for FY 1984. Our five-year program contains 11 MSHs, with a total of 17 ships planned.

(b) Mine Countermeasure (MCM) Helicopters

We are developing a mine countermeasures conversion kit for the cargo-configured CH-53E. This effort will lead to authorization of new mine countermeasures helicopters in about two years. In addition, we are developing several new Airborne Mine Countermeasure (AMCM) systems that will provide enhanced capabilities for hunting and sweeping mines.

(c) Mines

We are continuing development of three types of mines that we believe will contribute significantly to our capabilities in this much-neglected area. The CAPTOR ASW mine was procured in small quantities in the past while development and testing proceeded. Recent modifications have corrected past performance deficiencies. Accordingly, we are requesting funds in FY 1983 to increase CAPTOR production. Two more modest efforts, the QUICKSTRIKE and the Submarine-Launched Mobile Mine (SLMM), will also be continued.

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
Procurement of Mine countermeasure Ships				
$ Millions	--	117.9	373.1	345.7
Development and Procurement of QUICKSTRIKE Mines				
Procurement: $ Millions	9.6	21.1	30.9	45.3
Development: $ Millions	7.4	6.9	9.7	7.5
Procurement of Submarine-Launched Mobile Mines (SLMM)				
$ Millions	--	11.5	24.2	28.5

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
Development and Procurement of CAPTOR Mines				
Procurement: $ Millions	85.8	123.4	160.2	194.9
Development: $ Millions	6.4	2.9	1.5	1.1

e. Command, Control, Communications and Intelligence (C^3I)

We are proceeding with incremental changes to the Navy Command and Control System to ensure that it is sufficiently capable and responsive to the needs of our operational commanders. We are requesting funds to continue development of a system that is as survivable as the Naval forces it supports and balanced in a manner to maximize warfighting capabilities for all Naval missions. Installation of the Tactical Flag Command Center will continue, as will testing of enhancements to existing capabilities.

f. Force Readiness

Readiness and sustainability of Naval forces has been given priority consideration in the preparation of this year's budget request. The Navy routinely keeps about 25 to 30 percent of its ships forward deployed at a high state of readiness. The increased tempo of operations in the Indian Ocean and elsewhere has stretched our Naval forces thinner than at any time since the late 1940s. There is no margin to take on additional peacetime commitments without extending already hard-pressed fleet personnel and affecting essential maintenance.

(1) Materiel Readiness

Our new ships are more capable, but also more complex. We have requested adequate funding for each maintenance level to sustain current fleet materiel readiness. A prudent backlog of ship overhauls remains--primarily because of increased operational commitments. We are continuing programs to improve organizational maintenance at the shipboard and intermediate maintenance levels.

We plan to continue investing in shipyard modernization and other Naval shipyard productivity improvements over the next five years. These two initiatives will contribute to increased readiness and ship availability in the long term.

(2) Personnel Readiness

The Navy's most serious readiness problems are personnel related. Additional resources have been programmed to improve recruiting of high school graduates, provide career reenlistment incentives, and increase the career petty officer content of the force. Compensation remains the primary factor affecting retention, although family separation is also a key consideration. The increases in pay and allowances in FY 1981 and FY 1982 demonstrated a recognition of the need to pay our sailors fair and competitive wages. This year we will request funds to maintain pay and allowances at that competitive level.

TABLE III.B.2

FY 1983-87 Shipbuilding Program
(Fiscal Year)

TYPE OF SHIP	82 1/	83	84	85	86	87	FY 83-87 Five Year Total
TRIDENT (Ballistic Missile Submarine)	-	2	1	1	1	1	6
SSN-688 (Attack Submarine)	2	2	3	4	4	4	17
CVN (Aircraft Carrier-Nuclear)	-	2	-	-	-	-	2
CV (Aircraft Carrier) SLEP 2/	-	1	-	1	-	1	3
CG-47 (Guided Missile Cruiser)	3	3	3	3	4	4	17
CG-42 (Nuclear Guided Missile Cruiser)	-	-	-	-	-	1	1
DDG-51 (Guided Missile Destroyer)	-	-	-	1	-	3	4
DD (Destroyer)	-	-	-	-	2	1	3
BB (Battleship) Reactivation	1	1	1	1	-	-	3
FFG-7 (Guided Missile Frigate)	3	2	2	2	3	3	12
MCM (Mine Countermeasure Ship)	1	4	4	5	-	-	13
MSH (Mine Countermeasure Ship)	-	-	1	-	5	5	11
LSD-41 (Landing Ship Dock)	1	1	1	2	2	2	8
LHD-1 (Amphibious Ship)	-	-	1	-	-	1	2
AOE (Multi-Purpose Stores Ship)	-	-	-	1	1	2	4
AE (Ammunition Ship)	-	-	-	1	2	1	4
ARS (Salvage Ship)	2	1	1	-	-	-	2
AD (Destroyer Tender)	-	-	-	-	1	1	2
T-AO (Oiler)	1	1	3	4	4	6	18
T-AGS (FBM Support Ship) Conversion	-	-	-	2	-	-	2
T-AK (Cargo Ship) Conversion	-	-	-	1	-	-	1
T-ARC (Cable Ship)	-	-	-	-	1	-	1
T-AGM (Range Instrumentation Ship) Conversion	-	-	-	-	1	-	1
T-AGOS/AGOS (SURTASS)	4	-	1	-	2	3	6
T-AKRX (SL-7) Conversion 3/	4	4	-	-	-	-	4
T-AFS (Stores Ship) Conversion	2	-	-	-	-	-	-
T-AH (Conversion)	-	1	1	-	-	-	2
New Construction Ships	17	18	21	24	32	38	133
Conversions/SLEPs/ Reactivations	7	7	2	5	1	1	16

1/ Shown for information to reflect changed baseline from Carter program.
2/ SLEP - Service Life Extension Program.
3/ Acquisition of eight T-AKRXs will be completed in FY 1982.

C. TACTICAL AIR FORCES

1. Introduction

The tactical air forces of the United States, consisting of Air Force, Navy, and Marine Corps units, are part of a combined-arms warfighting capability that we maintain in support of our national security objectives. These forces--equipped with fighter, attack, and combat support aircraft--perform close air support, counter-air, nuclear strike, and interdiction missions. In addition, they perform various combat support roles, including airborne warning and control; tactical reconnaissance; electronic warfare (EW); command, control, and communications countermeasures (C^3CM); defense suppression; and special operations.

a. Force Structure

The current deployment of U.S. tactical air forces is shown in Chart III.C.1.

(1) U.S. Air Force Tactical Air Forces

The Air Force fighter force structure consists of 24 active wing equivalents and the equivalent of nearly 12 Air National Guard (ANG) and Air Force Reserve (AF Res) wings. Each wing typically contains three squadrons of 24 aircraft each. Combat support units are generally grouped into squadrons of 18 to 24 aircraft. We expect to have the equivalent of 26 fully equipped active wings and 14 Air National Guard and reserve wings by FY 1986.

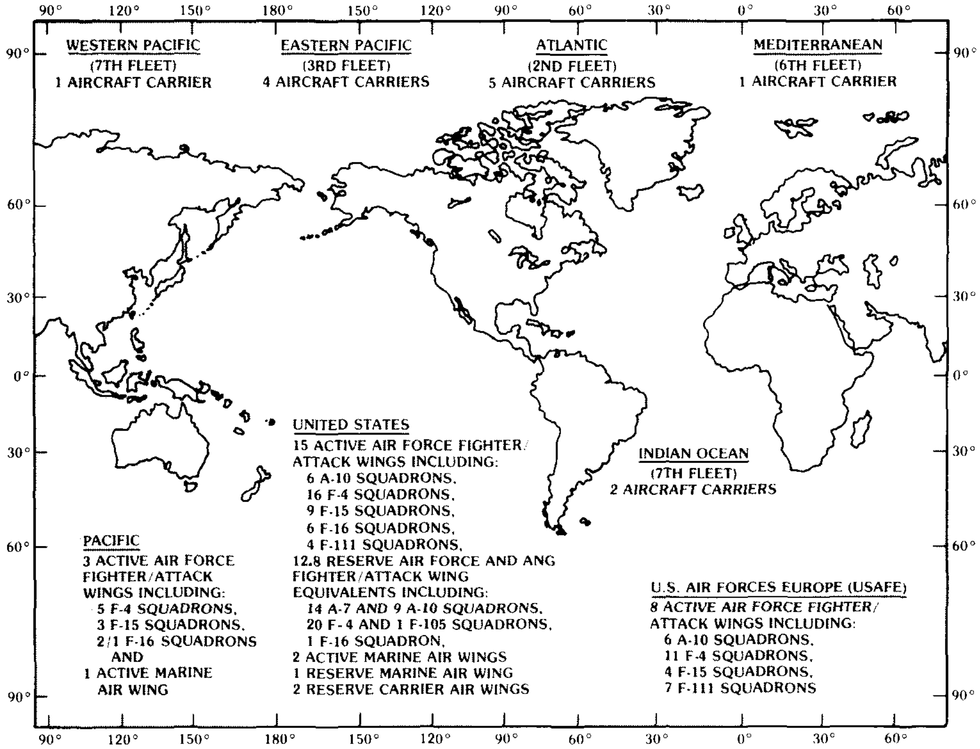
In addition to fighter forces, the active and reserve components of the Air Force operate the following types and numbers of special purpose tactical squadrons: EW (2), Defense Suppression (5), Reconnaissance (8), Tactical Command and Control (11), and Special Operations (9).

(2) U.S. Navy and Marine Corps Tactical Air Forces

Unlike Air Force wings, which generally consist of only one type of aircraft, Navy and Marine Corps air wings are task oriented and include a mix of aircraft types.

CHART III.C.1

DEPLOYMENT OF U.S. TACTICAL AIR FORCES



A typical active Navy 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, F/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

An active Marine Corps air wing typically consists of the following elements:

Aircraft Type	Function	Squadrons	Aircraft
F-4, F/A-18	Fighter/Attack	4	48
A-4, AV-8A/B/C	Light Attack	2-3	38-57
A-6	Medium Attack	1-2	10-20
KC-130	Tanker/Transport	1	12
EA-6B	Electronic Warfare	1	4
RF-4	Reconnaissance	1	7
OV-10	Observation	1	12
AH-1	Attack Helicopter	1	24
CH-53, CH-46, UH-1	Transport/Utility Helicopters	6-7	131
TOTAL		18-21	286-315

Our five-year program funds two additional active Navy carrier air wings--one in FY 1983 and the other in FY 1987--bringing the total to 14 active wings by the end of the program period. We will also maintain three active Marine Corps air wings, two Navy reserve wings, and one Marine reserve wing throughout the program period.

2. FY 1983-87 Tactical Air Programs

Our five-year program places major emphasis on the following areas: increasing the combat readiness and sustainability of our tactical air forces; modernizing their active and reserve components; enhancing electronic combat and C^3 capabilities; and improving target acquisition, surveillance, warning, and reconnaissance capabilities.

a. Increasing Combat Readiness

The combat readiness of our tactical air forces has fallen below desired levels, as measured by the low number of aircraft units defined as fully combat ready. Combat-ready definitions include equipment readiness, equipment and supplies on hand, personnel, training, and unit commander judgment, and reflect the basic complexity of our modern tactical aircraft. Our first priority in the FY 1983-87 program is to improve both near-term and long-term combat readiness and sustainability. We will continue to fund initiatives, begun in the FY 1981 Budget Supplemental and FY 1982 Budget Amendment, to eliminate peacetime operating spares deficits, reduce service maintenance backlogs, and increase war reserve stocks (spare parts, ammunition, and support equipment).

Total flying hours are an important aggregate measure of force training and readiness levels. An increase in tactical flying hours translates directly into increased aircrew combat capability. In addition to funding increases in flying hours, we are continuing to emphasize realism in training. Instrumented Air Combat Maneuvering Ranges, now coming into fairly widespread use, offer U.S. and Allied aircrews a unique training aid. Air Force, Navy, and Marine Corps active and reserve units regularly participate in the large-scale "Red Flag" exercises held at Nellis Air Force Base, Nevada; the "Cope Thunder" exercises conducted at Clark Air Force Base, Philippines; and the combined-arms, live-fire exercises at the Marine Corps Air Station, Yuma, Arizona.

U.S. tactical aircrews continue to be rated as superior to Warsaw Pact aviators, in part because of their significant advantage in average flying time per crew member. Further increases in flight time for our aircrews will be necessary, however, if they are to achieve their full combat potential.

To improve combat readiness over the longer term, we must direct our technology toward obtaining weapon systems that can be procured 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. <u>Improving the Active, Air National Guard, and Reserve Tactical Air Components of the Air Force</u>

We have intensified our efforts to improve the capabilities of our tactical air forces. Although readiness continues to be our highest priority, we will actively pursue initiatives to improve force deployability and sustainability. The resources we have applied to these areas, together with a continuing modernization program and a modest growth in force size, will significantly increase our readiness and force projection capabilities by FY 1987. Changes in the active tactical air force structure are shown in Chart III.C.2.

To reduce the depot maintenance backlog, we have provided additional funds for Depot Purchased Equipment Maintenance (DPEM). We have also increased the manning level for the Air Force Logistics Command (AFLC). These actions will improve our replacement item processing and repair capabilities and enhance AFLC's capability to respond to a wartime surge. In addition, we have funded maintenance manpower authorization increases for the tactical fighter units. These additional billets will support wartime sortie rate requirements during the initial days of conflict as well as tactical force modernization requirements.

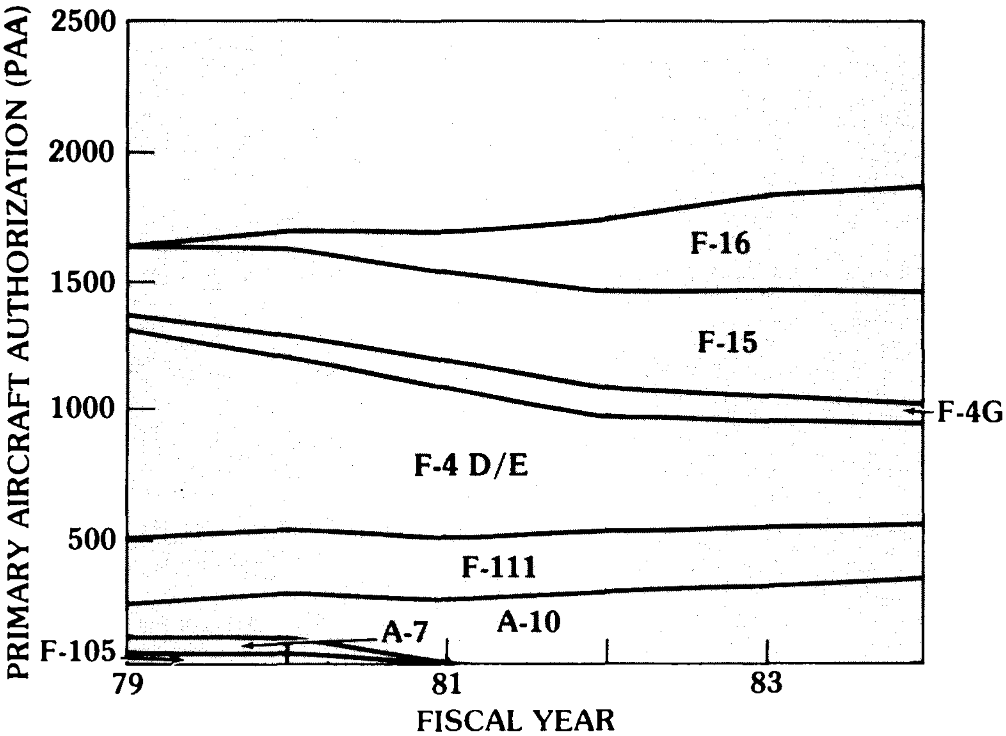
Our five-year program gives deployability as high a priority as readiness. In this regard, we have programmed additional funds to begin construction of facilities to preposition aircraft support equipment, including materiel handling equipment and flight-line support vehicles, in Europe and Southwest Asia and to increase munitions and POL storage capabilities in NATO.

Sustainability, which has been the prime target for funding reductions in recent years, has been given a high priority in our five-year program. Our shift in policy to plan for the possibility of a global, extended war with the Soviets requires accelerated improvement in this area. Therefore, we have funded War Readiness Supply Kits (WRSK), Base Level Supply Sufficiency (BLSS), War Reserve Materiel (WRM) munitions, and Other War Reserve Materiel (OWRM) requirements to sustain our tactical air forces in the European and Korean theaters and our rapid deployment forces (excluding POL) during initial periods of conflict.

The planned fighter force modernization program encompasses both the active and reserve tactical fighter and air defense forces. We have programmed funds in FY 1983 to procure 20 A-10s, 42 F-15s, and 120 F-16s. The F-15 procurement will allow retirement of additional aircraft from the active CONUS air defense forces; the F-16 procurement will permit continued modernization and growth of the active and reserve forces. The F-16s are slated primarily to replace F-4s in the active force; the F-4s, in turn, will be used to replace older aircraft, such as early model F-4s, in the Air National Guard and Air Force Reserve. One Air National Guard unit in FY 1983 and one Air Force

CHART III.C.2

U.S. AIR FORCE
ACTIVE TACTICAL AIRCRAFT



Reserve unit in FY 1984 will receive F-16s. By FY 1984, 22 percent of the fighter aircraft in our reserve forces will consist of A-10s and F-16s. Changes in the Air Force Reserve and Air National Guard force structure are shown in Chart III.C.3.

We have programmed funds to procure fighter aircraft at more efficient and economical rates. By FY 1985, F-15 procurement is projected to reach 96 aircraft per year; by FY 1986, F-16 procurement will rise to 180 aircraft per year. We also intend to continue procurement of both of these aircraft beyond FY 1987. The F-15 and F-16 will provide satisfactory air-to-air performance in meeting the Soviet aircraft threat of the 1980s. In evaluating our longer-term fighter force needs, we will consider modification of current aircraft along with new aircraft designs.

By FY 1986, we will fully equip 40 tactical fighter wings (26 active and 14 ANG and AF Res wings). We tentatively plan to add four more tactical fighter wings in the out years, while continuing to modernize the current force.

Major elements of the Air Force's modernization program are discussed below:

(1) F-15 (EAGLE)--The F-15 is the Air Force's all-weather, air superiority fighter. The original procurement program of 729 aircraft has been increased to 1,107 aircraft by FY 1987, and we tentatively project continued acquisition of the aircraft into the early 1990s. Development funds are programmed for an air-to-surface derivative of the F-15 that will enhance its range, payload, and delivery capabilities.

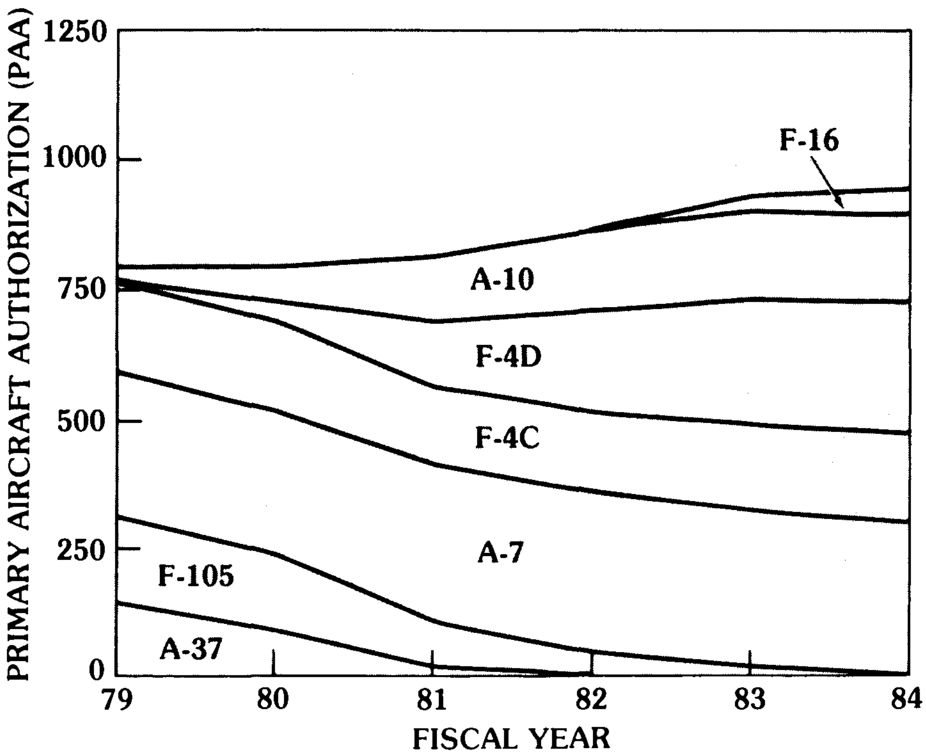
(2) F-16 (FIGHTING FALCON)--The F-16 is a multi-role fighter. We plan to procure 120 F-16s in FY 1983 as part of a 480-aircraft multi-year procurement program (FY 1982-85), and to increase production to 180 aircraft per year in 1986 and beyond. Development funds are provided in FY 1983 for a cranked arrow wing version that will expand the F-16's range and stores capability. We plan to conduct a competition between the F-15 and F-16 air-to-surface derivatives, and may choose to pursue only one of them.

(3) LANTIRN--The LANTIRN system will provide the F-16 and A-10 with night/under-the-weather navigation capability and will increase their conventional, laser-guided bomb (LGB), and MAVERICK weapons delivery capability.

(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, expanding its capability in the night attack role.

CHART III.C.3

U.S. AIR FORCE RESERVE AND AIR NATIONAL GUARD AIRCRAFT



(5) Advanced Medium-Range Air-to-Air Missile (AMRAAM)--This new, all-weather, "fire-and-forget" air-to-air missile can use its own radar to home autonomously on a target. It is being developed for use by both the Air Force and the Navy.

(6) AIM-7M (SPARROW)--An all-weather, semi-active, radar-guided, air-to-air missile, the AIM-7M has greater electronic countermeasures resistance and look-down/shoot-down capabilities than the "F" model. Procurement of the missile began in FY 1980.

(7) AIM-9M (SIDEWINDER)--An infrared-guided air-to-air missile, the AIM-9M incorporates improved background discrimination and countermeasure capabilities.

(8) 30mm Anti-Armor Aircraft Guns--A program to procure 299 30mm gun pods was initiated in FY 1980. These pods will provide additional anti-armor capability for the F-4 and A-7, plus growth potential for other aircraft.

(9) Wide Area Anti-Armor Munition (WAAM)--Development funds are programmed for a new family of advanced anti-armor munitions, ranging in type from unguided cluster weapons to terminally guided dispensed submunitions.

(10) Conventional Standoff Weapon--Funding is provided in FY 1983 for full-scale development of a new standoff tactical guided weapon that will exploit Precision Location Strike System (PLSS) information.

(11) Tactical Aircraft Modifications--This account funds aircraft modifications to correct problems identified during development and operational use, including changes to enhance the capability of existing aircraft, improve their reliability and maintainability, incorporate operational and safety modifications, and extend their service life. Significant items in the current program include the Inertial Navigation System for the A-10, a low smoke and radar warning receiver for the F-4, and the final procurement of kits for the EF-111 conversion.

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
F-15 (EAGLE)				
Procurement:				
Quantity	42	36	42	60
$ Millions	1,103.3	1,175.0	1,682.3	2,156.7
Development:				
$ Millions	11.0	32.3	125.3	127.3

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
F-16 (FIGHTING FALCON)				
Procurement:				
Quantity	180	120	120	120
$ Millions	1,941.9	2,273.0	2,225.9	2,108.7
Development:				
$ Millions	41.9	57.3	86.1	220.2
LANTIRN				
Procurement:				
$ Millions	1.0	5.0	15.7	25.4
Development:				
$ Millions	57.2	90.4	108.2	97.7
IIR MAVERICK Anti-Armor Air-to-Ground Missile				
Procurement:				
Quantity	--	490	2,560	4,600
$ Millions	--	235.2	353.1	468.7
Development:				
$ Millions	46.8	24.9	5.4	.1
Advanced Medium Range Air-to-Air Missile				
Development:				
$ Millions	45.4	144.4	212.3	199.6
AIM-7M (SPARROW)				
Procurement:				
Quantity	1,050	1,025	1,300	2,075
$ Millions	185.2	222.2	208.3	305.3
AIM-9M (SIDEWINDER)				
Procurement:				
Quantity	1,280	1,800	1,920	1,700
$ Millions	105.9	138.0	115.7	102.1

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
30mm Anti-Armor Aircraft Guns				
Procurement:				
Quantity	40	104	75	80
$ Millions	32.3	41.7	29.5	29.4
Development:				
$ Millions	13.6	11.8	1.0	--
Wide Area Anti-Armor Munition				
Development:				
$ Millions	52.8	75.9	26.5	45.7
Conventional Standoff Weapon				
Development:				
$ Millions	--	--	38.9	65.7
Tactical Aircraft Modifications				
Modifications:				
$ Millions	578.5	621.4	650.5	760.3

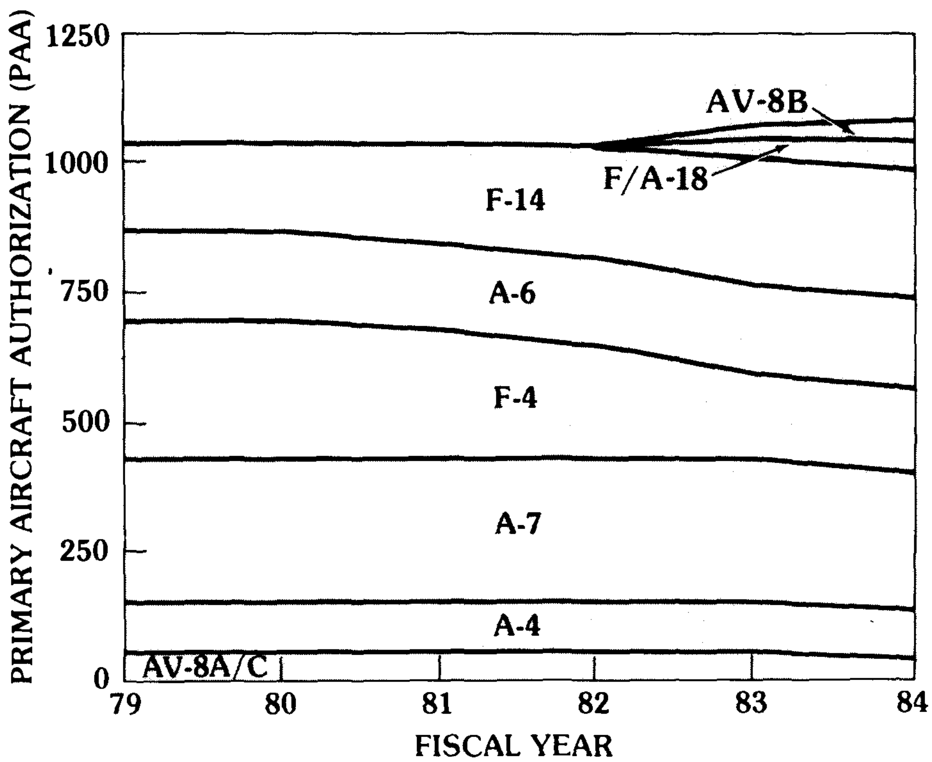
c. Improving the Active and Reserve Tactical Air Components of the Navy

Our FY 1983-87 defense program marks significant improvements in both our Navy and Marine Corps warfighting capabilities. Committed to achieving and sustaining U.S. maritime superiority, our aircraft procurement plan carefully balances near- and long-term requirements. Charts III.C.4 and III.C.5 show the increases in our active and reserve fighter/attack force structure resulting from our program. Over the next five years, we plan to buy 964 Navy and Marine Corps tactical fighter and attack aircraft. This translates into an average of 193 aircraft per year--an 88 percent increase over the average annual procurement rate during the past decade. This procurement schedule will allow us to reach our goal of 14 active carrier air wings by the end of the program period. We plan to commission the 13th wing in FY 1983 and the 14th in FY 1987.

The 552 F/A-18s that are programmed during the FY 1983-87 planning period represent over 50 percent

CHART III.C.4

DEPARTMENT OF THE NAVY
ACTIVE FIGHTER/ATTACK AIRCRAFT



of the Navy tactical aircraft funded. To ensure economical production rates, we have programmed funds to reach an annual procurement rate of 132 aircraft by FY 1986. The F/A-18 will be introduced into Marine fighter/attack and Navy light attack squadrons in FY 1983. When this program is completed in the 1990s, all 28 Navy light attack squadrons and all 12 Marine Corps fighter/attack squadrons, as well as four Navy fighter squadrons, will be equipped with the F/A-18. Our large deck carriers will be equipped with an all F-14 fighter force.

Our procurement program will allow the Navy to arrest the aging of its active fighter and light attack forces. By the early 1990s, Navy and Marine Corps reserve fighter and light attack aircraft will also need replacement. The earlier versions of the F/A-18 could then be transferred to these reserve units, where they would replace older F-4 and A-7 aircraft. The AV-8B Vertical/ Short Take-Off and Landing (V/STOL) aircraft will be procured as a replacement for Marine Corps AV-8A/Cs and A-4Ms.

Aircraft depot level maintenance has been funded to reach acceptable readiness levels for certain deficient areas. We have provided additional funding and have increased manning levels for the Naval Air Rework Facilities (NARFs) to support these objectives. To improve near-term readiness, we have provided additional funds for aviation component repair.

Major elements of the Navy's modernization program are discussed below:

(1) F-14 (TOMCAT)--The F-14 is an all-weather fighter that can be armed with six PHOENIX missiles to protect carrier battle groups. Continued funding will support procurement of two F-14 squadrons for each large-deck carrier.

(2) F/A-18 (HORNET)--The F/A-18 is a multi-purpose aircraft that will replace F-4s in fighter squadrons and A-7s in light attack squadrons. It may also serve as a new tactical reconnaissance aircraft and will ultimately be used to modernize reserve fighter and attack squadrons.

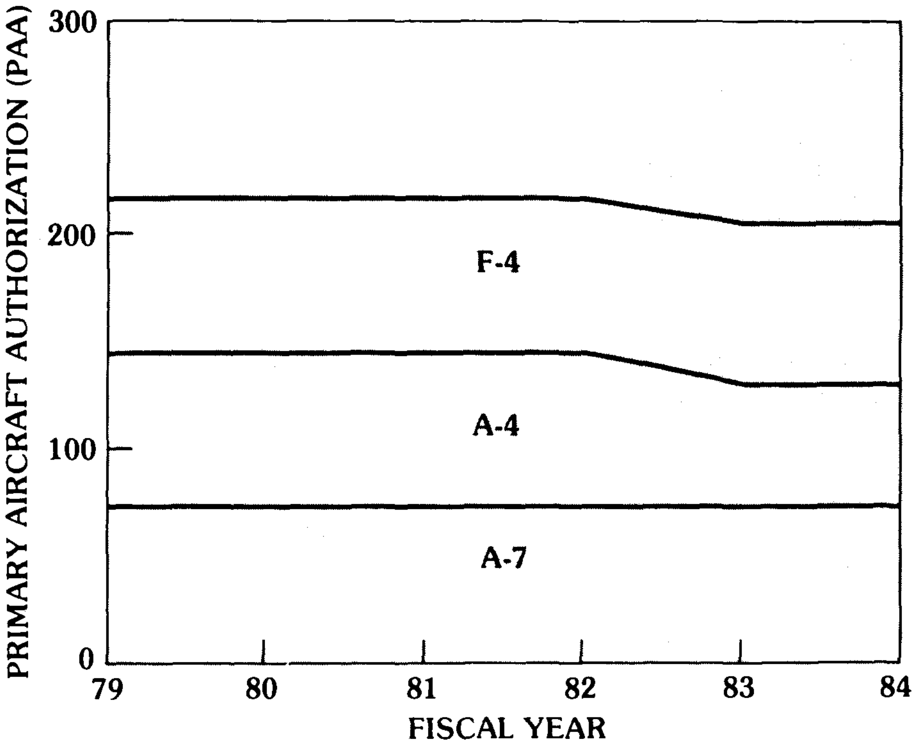
(3) A-6E (INTRUDER)--Continued procurement of this all-weather/night attack aircraft will permit us to achieve and maintain programmed force levels, while continuing to convert older A-6s to KA-6 tankers.

(4) AV-8B (HARRIER)--A light-attack V/STOL aircraft, the AV-8B incorporates improvements over the AV-8A in gross take-off weight and performance. The AV-8B will replace Marine AV-8A/Cs and A-4Ms.

(5) AIM-7M (SPARROW)--An all-weather, semi-active, radar-guided air-to-air missile, the AIM-7M has greater electronic countermeasures resistance and look-down/ shoot-down capabilities than the "F" model. Procurement of the missile began in FY 1980.

CHART III.C.5

DEPARTMENT OF THE NAVY
RESERVE FIGHTER/ATTACK AIRCRAFT



(6) AIM-9M (SIDEWINDER)--An infrared-guided air-to-air missile, the AIM-9M incorporates improved background discrimination and countermeasure capabilities.

(7) AIM-54A/C (PHOENIX)--The "C" model of this long-range, all-weather, air-to-air missile entered production in FY 1980 and has improved electronic counter countermeasure features. It is intended primarily for long-range attack of bombers before they can launch cruise missiles against ship targets.

(8) Tactical Aircraft Modifications--This account funds aircraft modifications to correct problems identified during development and initial operational use, or to enhance the capability of existing aircraft. Significant items in the current program include: A-6 inertial navigation, re-wing, and Target Recognition Attack Multi-Sensor (TRAM); A-7 Forward-Looking Infrared (FLIR) sensor and TF-41 engine; F-14 TF-30 engine improvement program, AWG-9 programmable signal processor, and installation of Television Control Set (TCS); EA-6B (ICAP II) EW capability improvements; and E-2C improved antenna (TRAC-A).

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
F-14 (TOMCAT)				
Procurement:				
Quantity	30	30	24	30
$ Millions	927.4	1,184.9	1,178.6	1,402.5
Development:				
$ Millions	11.7	17.0	14.7	17.5
F/A-18 (HORNET)				
Procurement:				
Quantity	60	63	84	96
$ Millions	2,012.3	2,420.8	2,847.4	2,858.5
Development:				
$ Millions	170.9	190.0	109.2	19.4
A-6E INTRUDER				
Procurement:				
Quantity	12	12	8	8
$ Millions	270.7	295.0	276.6	311.2
Development:				
$ Millions	--	--	4.7	3.0

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
AV-8B (HARRIER)				
Procurement:				
Quantity	--	12	18	30
$ Millions	88.7	669.6	942.9	979.8
Development:				
$ Millions	236.4	226.4	114.1	67.1
AIM-7M (SPARROW)				
Procurement:				
Quantity	625	585	670	1,220
$ Millions	146.3	135.9	138.5	199.1
AIM-9M (SIDE-WINDER)				
Procurement:				
Quantity	220	700	500	450
$ Millions	44.2	52.1	43.1	34.7
AIM-54 A/C (PHOENIX)				
Modification:				
$ Millions	4.1	7.8	6.6	54.6
Procurement:				
Quantity	210	72	108	360
$ Millions	161.0	163.0	270.8	385.0
Development:				
$ Millions	35.4	30.4	23.8	--
Tactical Aircraft Modifications				
Modification:				
$ Millions	691.6	926.7	1,311.1	1,502.8

d. Enhancing Electronic Combat (EW, C^3CM, and Defense Suppression) and C^3 Capabilities

Funding has been requested for a balanced mix of lethal and nonlethal Electronic Combat (EC) assets designed to neutralize, disrupt, and destroy critical elements of the enemy's integrated air defense system. Our ability to protect our own command, control, and communications systems and to disrupt enemy systems is vital to success in any air campaign.

Major elements of our programs in this area are discussed below:

(1) High Speed Anti-Radiation Missile (HARM)--The HARM air-to-surface missile is designed to suppress or destroy the land- and sea-based radars of enemy air defense systems. The missile is scheduled to become operational in FY 1983 under a joint Navy and Air Force program.

(2) Precision Location Strike System (PLSS)--PLSS is designed to locate, identify, and guide applicable munitions or weapon systems strikes on enemy air defense emitters in all-weather conditions from standoff ranges. Currently under development by the Air Force, PLSS is scheduled to become operational in the mid-1980s.

(3) EA-6B (PROWLER)--This sophisticated electronic naval support aircraft degrades enemy defenses by jamming their radars and communications systems. Significant improvements to its EW systems are programmed.

(4) Airborne Self-Protection Jammer (ASPJ)--This joint Navy and Air Force program will provide many of our tactical aircraft with an onboard electronic countermeasures system.

(5) ALQ-131 Electronic Countermeasures Pods--This Air Force program provides self-protection jammer pods for aircraft not scheduled to receive the ASPJ.

(6) Jam-Resistant Secure Voice and Data Link Communications--The Joint Tactical Information Distribution System (JTIDS) is being developed to provide a secure, jam-resistant, digital information system for tactical use by all the Services. The United Kingdom also plans to deploy JTIDS on selected platforms (e.g., NIMROD and TORNADO aircraft). Initial operating capability (IOC) is scheduled for the late 1980s. The Air Force is also proceeding with development of the SEEK TALK system and other jam-resistant secure voice communications systems to provide a secure voice system for the tactical air forces by the mid-1980s. These programs are discussed in more detail in Part III.F.

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
HARM				
Procurement:				
Quantity	80	154	414	618
$ Millions	126.9	204.8	354.6	413.1
Development:				
$ Millions	79.7	25.2	6.9	5.8

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
PLSS				
Procurement:				
$ Millions	--	1.7	1.8	6.4
Development:				
$ Millions	62.8	108.5	110.2	53.1
EA-6B				
Procurement:				
Quantity	6	6	6	6
$ Millions	223.7	277.1	347.1	391.9
Development:				
$ Millions	9.1	10.6	12.7	15.9
ASPJ				
Procurement:				
Quantity	140	120	120	52
$ Millions	106.2	118.2	107.4	56.4
Development:				
$ Millions	40.4	77.8	76.1	50.3
ALQ-131 PODs				
Development:				
$ Millions	5.5	9.6	5.3	7.0
JTIDS				
Procurement:				
$ Millions	--	26.3	25.6	21.9
Development:				
$ Millions	88.3	132.4	167.8	138.5

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 operation.

(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.

(3) TR-1--This aircraft, a derivative of the U-2, is designed to provide the Air Force with continuous, all-weather surveillance of the battle area. Its airframe is also common to the PLSS mission. Funding includes PLSS aircraft and associated TR-1 ground processing facilities.

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
E-3A (AWACS)				
Procurement:				
Quantity	2	2	2	1
$ Millions	270.0	257.9	176.7	220.2
Development:				
$ Millions	62.1	52.4	78.9	62.2
E-2C (HAWKEYE)				
Procurement:				
Quantity	6	6	6	6
$ Millions	240.9	206.2	352.7	315.9
Development:				
$ Millions	18.8	18.8	52.3	48.2
TR-1				
Procurement:				
Quantity	4.0	5.0	4.0	5.0
$ Millions	122.9	138.6	117.6	302.6
Development:				
$ Millions	5.5	15.0	20.1	19.7

D. STRATEGIC NUCLEAR FORCES

1. Introduction

The Administration's comprehensive five-year program for revitalizing our strategic deterrent will provide both near-term improvements and the foundation for our force capabilities into the next century. Our modernization, investment, and research and development decisions will strengthen all elements of our strategic nuclear forces--intercontinental ballistic missiles (ICBMs); sea-based missiles; bombers; command, control, and communications systems; and strategic defense--in an effort that will arrest the decline of U.S. strategic capabilities and create a more stable and secure deterrent.

2. Strategic Offensive Forces

The highlights of our program for the strategic offensive forces are threefold:

-- First, we will undertake a step-by-step plan to improve the strength and accuracy of our land-based missiles and to reduce their vulnerability by completing MX missile development and initially deploying 40 missiles in MINUTEMAN silos. Research and development on follow-on basing modes is under way. We will strive to make a basing decision in 1983, as directed by the Congress.

-- Second, to strengthen our sea-based forces, we will deploy new submarine-launched missiles. For the long term, the TRIDENT II (D-5) submarine-launched ballistic missile (SLBM) will be deployed in TRIDENT submarines; in the near term, nuclear-armed sea-launched cruise missiles (SLCM) will be added on attack submarines.

-- Third, to modernize our strategic bomber force, we will expand the air-launched cruise missile (ALCM) program, deploy the B-1B bomber beginning in FY 1986, develop an Advanced Technology Bomber for the 1990s, and re-engine many of our aerial tankers.

We have structured these initiatives to be mutually supportive, with additional capability becoming operational in each Triad element in a timely manner.

a. The ICBM Force

After a thorough review of MX basing options, the multiple protective shelter (MPS) basing scheme was cancelled by the President last October. We concluded that an MPS system would not be adequately survivable over the long term, since the Soviets could deploy additional warheads as fast as we could build shelters.

We are proposing a two-phase ICBM modernization program that, taken together, will reduce the vulnerability of our land-based missiles and will provide the earliest possible increase in ICBM force capability.

We are assessing three promising concepts for a long-term MX basing mode: deep basing (DB), ballistic missile defense (BMD), and continuous patrol aircraft (CPA). DB involves placing MX missiles in chambers below the ground to make them invulnerable to direct hits by nuclear weapons on the surface. BMD is designed to defend the MX in fixed, possibly superhardened silos or in some new, not yet defined, deceptive basing system. CPA would be designed to fly for dozens of hours without refueling. A large portion of the CPA force would be kept continuously airborne, patrolling over an area of millions of square miles. The technology used in CPA is likely to be applicable to other military and civil aircraft as well.

Simultaneously, we are proceeding with engineering development of the MX missile, and flight tests that will begin in 1983. We plan to build 100 operational missiles and, beginning in late 1986, to deploy 40 of them in MINUTEMAN silos.

As part of our strategic modernization program, we will retire our TITAN II force. These large, liquid-fueled ICBMs have been operational since 1963 and are quite expensive to maintain, especially considering their relatively small contribution to our overall strategic posture.

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
MX Missile and Interim Basing				
Development: $ Millions	1,491.6	1,943.2	2,759.3	2,651.5
Procurement:				
Quantity	--	--	9	53
$ Millions	--	--	1,497.1	3,192.0
MX Long-Term Basing				
Development: $ Millions	--	20.0	**	**

** To be determined.

b. The SLBM Force

Our program for the SLBM force will provide a cost-effective transition from a submarine force designed in the 1950s to one that will continue to ensure a high-confidence, sea-based deterrent well into the 21st century.

The 31 POSEIDON ballistic missile submarines (SSBNs) currently in the force were constructed between 1961 and 1967. In the 1970s, these SSBNs were converted to carry 16 POSEIDON (C-3) missiles with multiple independently targetable reentry vehicles (MIRVs). Twelve of these POSEIDON submarines are being further modified to carry the TRIDENT I (C-4) missile. This missile offers significant improvements in yield, accuracy, and range relative to the POSEIDON (C-3) missile. The first POSEIDON SSBN equipped with TRIDENT I missiles was deployed in October 1979; the twelfth will be deployed in early FY 1983. Weapon system reliability (WSR) in both the C-3 and C-4 missile has improved significantly in the past year. POSEIDON submarine retirements are programmed over the 1990s, after about 30 years of service.

The lead TRIDENT-class submarine, USS OHIO, was delivered to the Navy in October 1981. Deployment of the submarine with C-4 missiles is scheduled for September 1982. The TRIDENT has more (24 instead of 16) and larger missile tubes than the POSEIDON; is significantly quieter, thus making acoustic detection more difficult; and will have an increased at-sea, on-patrol time. Nine TRIDENT submarines have been authorized. Funding for the tenth (for which long-lead items and other funds have already been authorized) and for the eleventh is requested in FY 1983. A procurement rate of one SSBN per year is programmed in FY 1984-87.

To provide a follow-on missile for the entire TRIDENT submarine force, we will develop and procure the TRIDENT II (D-5) missile. We expect to begin full-scale engineering development in FY 1984; initial operating capability (IOC) is scheduled for December 1989. Relative to the C-4, the D-5 will have improved accuracy and payload; its larger size will enable it to take full advantage of the TRIDENT SSBN launch tube volume. TRIDENT submarines armed with TRIDENT II missiles will provide a capability to attack the full spectrum of targets from a reliable and enduring platform.

Nuclear-armed sea-launched cruise missiles will be deployed on attack submarines beginning in FY 1984. These weapons will provide some near-term hard target kill capability, while contributing to a strategic reserve.

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
TRIDENT Submarine				
Procurement: $ Millions	1,119.7	436.2	2,765.7	1,738.6
TRIDENT II Missile				
Development: $ Millions	96.7	239.2	366.7	1,413.6

c. The Strategic Bomber Force

The strategic bomber force will be increasingly critical to our national security posture through the remainder of the decade. Of the Administration's new strategic initiatives, the bomber programs will add the most operational capability prior to 1990.

At the present time, we are confident that a large portion of our bomber force could survive a surprise Soviet attack and penetrate Soviet airspace to accomplish its mission. We expect, however, that the Soviet air defense threat will increase substantially, and will pose critical survivability problems to our manned bomber force later in the decade. Our aging B-52s, which incorporate 1950s technology, are increasingly less able to adapt to new operational environments and are increasingly more difficult and expensive to maintain.

To counter these problems and to strengthen our strategic force posture, we are proposing a comprehensive modernization program for the bomber force. In the near term, we are deploying air-launched cruise missiles. In the middle of this decade, consistent with the Congressional mandate for a new bomber, we will introduce the B-1B. Finally, for the 1990s, we will develop and deploy an Advanced Technology, or "Stealth," bomber. In addition to these new aircraft, we are proposing a modification program for some later-model B-52s that will keep them effective during the remainder of their operational service.

(1) Bomber Force Modernization

Our major near-term bomber modernization program is the ALCM. We propose to expand ALCM procurement, and will deploy over 3,000 ALCMs on B-52G/H and B-1B aircraft. Conversion of the first B-52G squadron to external ALCM carriage is now under way. By 1990, we plan to equip our later-model B-52s for ALCM carriage.

Our vigorous ALCM program will do much to redress the strategic imbalance relatively quickly. These small, low-flying, highly accurate missiles are effective against a wide range of targets and pose difficult problems for air defenses. The presence of a large number of cruise missiles would saturate enemy air defenses, increasing the survivability of our penetrating bombers.

For the long term, we plan to deploy a significant number of penetrating bombers and cruise missiles. Our studies show that the most effective bomber force should contain substantial numbers of both. Accordingly, we are providing for the development of an Advanced Technology Bomber (ATB), incorporating "Stealth" characteristics, with an IOC in the 1990s. We expect that the ATB will be capable of penetrating all existing and projected Soviet air defenses until well past the turn of the century.

Unfortunately, we do not expect our current aircraft to remain effective penetrators until the ATB can be deployed. The lack of a highly capable penetrating bomber in the late 1980s would constitute an unacceptable deficiency in our strategic forces. Therefore, we will also introduce a new bomber, the B-1B, in 1986. The B-1B is a highly effective multi-role bomber that offers substantial improvements over the previously cancelled B-1. It is intended to serve primarily as a strategic penetrator well into the 1990s, and will offer major improvements in base escape and penetration ability relative to the B-52. As the ATB is deployed in substantial numbers, the B-1B will carry an increasingly higher proportion of ALCMs in its weapons mix. We are acquiring 100 B-1Bs to provide urgently needed strategic capability in this decade. These aircraft will continue to fulfill important missions throughout their operational life.

(2) <u>The Current Bomber Force</u>

The current bomber force consists of 75 operational B-52Ds, 151 B-52Gs, 90 B-52Hs, and 60 FB-111As. These aircraft suffer from varying degrees of aging and obsolescence. Our bomber modernization program will enable us to plan for the retirement of a large part of the current force. We propose to phase out some B-52Ds in the near term, some B-52Gs in the late 1980s, and FB-111As in the early 1990s. We expect to retain our later-model B-52s as standoff cruise missile carriers (CMCs) into the 1990s.

We also propose to modify and improve our current bombers. All B-52G/Hs will be outfitted with a new Offensive Avionics System (OAS). The OAS is necessary for cruise missile conversion and will improve aircraft reliability, maintainability, and weapons delivery effectiveness. We propose to harden selected B-52s against the effects of electromagnetic pulse (EMP) and to outfit these aircraft with improved electronic countermeasures (ECM) equipment.

(3) Aerial Tankers

Our aerial tanker force is essential to all phases of our military strategy. Aerial tankers are needed to support strategic forces in carrying out the Single-Integrated Operational Plan (SIOP); they also support general purpose force operations worldwide. Planned deployment of ALCMs on existing strategic bombers, together with the introduction of new air-refuelable aircraft, will make tanker support even more vital in the future. Unfortunately, we do not have sufficient tanker capability today to support our stated national objectives. We will resolve some of our tanker deficiencies by replacing a substantial portion of the current bomber force with more fuel-efficient aircraft; however, substantial increases in overall tanker capability are still needed.

We will improve tanker capability by acquiring additional KC-10 tanker/cargo aircraft and by re-engining our existing KC-135As. The KC-10 is a proven tanker system that has unique capabilities in support of general purpose deployments. It is also a highly capable airlift aircraft. KC-135A re-engining replaces aging and environmentally objectionable J57s with more efficient engines, thus improving total fuel offload capability.

We consider both KC-10 procurement and KC-135A re-engining to be very attractive programs, and will pursue both vigorously. In the near term, we will re-engine some of our KC-135s with refurbished JT3D turbofans obtained from commercial sources. We also plan to re-engine 300 KC-135s with a current-technology turbofan (the CFM56) through FY 1987. The CFM56 program also includes a substantial aircraft modernization package that will keep the KC-135 fleet operational well into the 21st century. Finally, we also propose to purchase 44 additional KC-10s, primarily to alleviate our deficiencies in mobility forces.

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
Air-Launched Cruise Missile Program				
Development: $ Millions	108.9	103.7	186.8	63.0
Procurement:				
Quantity	480	440	440	440
$ Millions	569.9	597.1	676.7	858.7

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
Modification of B-52 Strategic Bomber				
Development: $ Millions	121.7	95.6	121.8	82.1
Procurement: $ Millions	507.3	497.3	572.9	985.6
B-1B				
Development: $ Millions	260.1	471.0	753.5	717.9
Procurement:				
Quantity		1	7	10
$ Millions		1,621.9	4,033.5	6,142.1
Bomber Research and Development				
Development: $ Millions	--	--	60.0	300.0
KC-135A Re-engining (JT-90/CFM-56)				
Development: $ Millions	20.1	31.8	29.0	11.8
Procurement:				
Quantity	19	37	25	58
$ Millions	144.5	301.3	584.0	1,341.4

3. Strategic Defensive Forces

a. Program Basis

We have virtually ignored our strategic defensive systems for more than a decade. As a result, we have large gaps in the North American air defense warning network; our strategic air defense interceptors are obsolete; and our anti-satellite and ballistic missile defense programs have lagged behind the Soviets'. Our program ends these years of neglect. Together with Canada, we have taken the first steps toward restoring credible strategic air defenses. We also plan to conduct a vigorous R&D program for ballistic missile defense and to pursue an operational anti-satellite system. In coordination with the Federal Emergency Management Agency, we will strive to improve our civil defenses. In the years ahead, we will continue to review our strategic defense needs to determine what additional steps may be required.

b. Program Status and Description

Our FY 1983-87 program addresses each element of our strategic defense system: air defense, ballistic missile defense, and space defense.

(1) Air Defense

Soviet bombers flying at low altitudes could penetrate undetected through gaps in radar coverage. We are taking a number of steps to correct this deficiency. We plan to deploy new ground-based atmospheric surveillance radars and modern interceptors to detect and identify unknown traffic, to control access to our sovereign airspace, and to provide an active defense capability. We also plan to buy additional Airborne Warning and Control System (AWACS) aircraft for North American air defense.

(a) Surveillance Systems

To improve atmospheric surveillance, we will procure and deploy over-the-horizon backscatter (OTH-B) radars for all-altitude coverage of the eastern, western, and southern approaches to CONUS. For northern atmospheric surveillance, we plan to upgrade the Distant Early Warning (DEW) Line across Alaska, northern Canada, and Greenland.

(b) Interceptor Forces

To improve the interceptor force, we plan to replace five active squadrons of aging F-106 interceptors with F-15s. The first squadron of 18 aircraft will be assigned to air defense in FY 1982. In addition, the three CONUS-based F-15 tactical fighter wings will provide air defense support as a secondary mission. The F-15s will provide our air defense forces with a long-needed look-down/shoot-down capability to deal with low-altitude penetrators, and will have sufficient flight range to use information provided by new long-range surveillance radars. Canada is scheduled to phase in new CF-18 fighter aircraft starting in FY 1983. U.S. and Canadian active squadrons and U.S. Air National Guard (ANG) squadrons will continue to provide about 312 interceptors (F-106s, F-15s, F-4s, CF-101s, and CF-18s) for North American air defense. Interceptor forces assigned to the North American Aerospace Defense Command (NORAD), along with Tactical Air Command (TAC) F-15 and F-4 augmentation forces, now maintain ground alert at 26 sites around the periphery of the 48 contiguous states. The Air Force, Navy, and Marine Corps are tasked to provide additional interceptors for air defense in a crisis.

(c) Airborne Surveillance and Control Systems

We plan to buy additional AWACS aircraft for North American air defense. In the near term, before ground-based surveillance improvements are completed, we plan to fly random AWACS surveillance and warning patrols over the coastal and northern approaches to CONUS. After the ground-based radars are deployed, AWACS would be used to augment and support them. In wartime, the AWACS aircraft would provide survivable surveillance and control of interceptors defending against bomber attacks.

(2) Ballistic Missile Defense (BMD) Research and Development (R&D)

Although ground-based deployment of MX ultimately may require a BMD for survivability, today's BMD technology is not adequate to defend against Soviet missiles. For the future, we are not yet sure how well ballistic missile defenses will work; what they will cost; whether they would require changes to the ABM Treaty; and how additional Soviet ballistic missile defenses--which would almost certainly be deployed in response to any U.S. BMD system--would affect U.S. and allied offensive capabilities. We plan to pursue a vigorous R&D program to provide an active defense of land-based missiles. The Low Altitude Defense (LoAD) program will be restructured to accelerate development of an advanced terminal defense for ICBMs. Work will continue on the exoatmospheric overlay program to provide a 1990s response to unconstrained growth in Soviet reentry vehicles.

(3) Space Defense

We are funding several programs in FY 1983-87 to enhance our space defense capabilities. First, we are improving our ability to monitor space activities. We will continue to deploy a network of five worldwide ground-based electro-optical deep-space surveillance sensors to improve our ability to detect, track, and identify space objects. Several existing radars will be modified to provide additional high- and low-altitude surveillance coverage. We are working on information processing improvements to provide better orbital predictions and to support anti-satellite targeting and strike assessment. We also are continuing R&D on long wavelength infrared (IR) space-based surveillance technologies, and are assessing the technical feasibility of space-based laser weapons.

The Air Force is continuing development of the Prototype Miniature Air-Launched System (PMALS), which will provide an anti-satellite capability.

c. Program Costs

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

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
Air Defense				
Development:				
$ Millions	18.0	5.6	2.3	1.1
Procurement:				
Quantity	18	18	18	36
$ Millions	399.3	575.1	688.5	1,198.5
Ballistic Missile Defense				
Development:				
$ Millions	266.6	462.1	870.6	810.9
Procurement:				
$ Millions	--	57.3	59.5	244.0
Space Defense				
Development:				
$ Millions	148.3	202.0	218.3	181.9
Procurement:				
$ Millions	--	--	--	32.8

4. Strategic Command, Control, and Communications

Strategic command, control, and communications (C^3) systems are needed to ensure that we could employ our nuclear forces effectively, which is essential to credible deterrence. Strategic C^3 systems must be capable of supporting an initial retaliatory response by our forces during or after an enemy attack. They must also be able to operate reliably over an extended period after an attack, should that prove necessary. Our five-year plan funds several programs to improve the survivability of our strategic C^3 systems. We will aso undertake a vigorous and comprehensive R&D program to improve system endurance during a nuclear war.

a. Missile Warning and Attack Assessment

Survival of the bomber force and important elements of our C^3 system depends on high-confidence tactical warning. We also need attack assessment information that is accurate and timely enough to assist the National Commmand Authority (NCA) in selecting the appropriate response. To meet these objectives, we are funding programs to improve the survivability, performance, and coverage of the satellites and radars used to warn us of a Soviet missile attack and to assess its size and scope.

(1) Satellite Early Warning System

Infrared (IR) sensors installed on missile warning satellites would provide initial detection of Soviet ICBM and SLBM launches. Currently, these satellites transmit data to fixed ground-based processing stations. To reduce our dependence on these vulnerable facilities, we will deploy mobile ground terminals (MGTs) to receive, process, and disseminate missile warning data from satellites. New warning satellites, scheduled to replace those now on orbit, will be more survivable and will improve our attack assessment capability.

(2) Ground-Based Radar Surveillance

We maintain ground-based radars to provide redundant coverage (satellite IR detection and radar surveillance) of Soviet missile launch areas. Ballistic Missile Early Warning System (BMEWS) radars at sites in Greenland, Alaska, and England would confirm satellite warning of an ICBM attack. Phased-array radars (PAVE PAWS) deployed along our east and west coasts would confirm satellite warning of an SLBM attack launched from normal Soviet SSBN operating areas. The Perimeter Acquisition Radar Attack Characterization System (PARCS), a converted BMD radar located in North Dakota, augments BMEWS coverage of ICBM attacks against central CONUS targets and provides SLBM surveillance of Arctic Ocean areas. Upgrades to the Greenland and England BMEWS radars will produce better estimates of attack size and objectives. Together with programmed improvements in satellite early warning system performance, these modifications should be sufficient to determine and verify an attack on our ICBM force. We will replace our older FPS-85 and FSS-7 SLBM surveillance radars in Florida with a new PAVE PAWS radar to provide improved surveillance of possible SLBM launch areas southeast of the United States. To complete redundant coverage of potential SLBM launch areas, we plan to install a second new PAVE PAWS radar for SLBM surveillance to the Southwest.

(3) Advanced Missile Warning System

Because we are concerned with the potential vulnerabilities of missile warning systems in a nuclear war, we are funding R&D for an advanced missile warning system designed to operate reliably after an initial Soviet attack. This program will build on technologies now under development. Advanced missile warning research is structured to support an FY 1987 decision on whether to proceed to full-scale development of a system that would replace or augment the satellite early warning system in the 1990s.

(4) Integrated Operational Nuclear Detonation Detection System (IONDS)

IONDS consists of improved nuclear detonation (NUDET) detection sensors that will be installed on the satellites of the NAVSTAR Global Positioning System

(GPS). IONDS will greatly increase our capability for rapid detection, location, and reporting of nuclear detonations worldwide. It will contribute to nuclear test ban monitoring and intelligence collection in peacetime. In a nuclear war, it would provide damage and strike assessment information.

b. Command Centers

We need command centers that will survive a nuclear attack and be able to support decisionmaking and the direction of our strategic forces. To meet this objective we will continue to upgrade the communications equipment on our airborne command posts. Since these aircraft are maintained on airborne and ground alert, we expect that a number of them would survive an initial Soviet attack. Our five-year program will also increase the endurance of our command centers.

(1) Airborne Command Centers

To satisfy the requirements of the NCA/JCS National Emergency Airborne Command Post mission, we will deploy a total of four E-4B airborne command posts by FY 1985. (The first of these aircraft is already operational.) The E-4B is a modified Boeing 747 aircraft that has been hardened against the effects of nuclear detonations, including electromagnetic pulse (EMP). It is outfitted with high-powered, anti-jam, very low frequency (VLF) and low frequency (LF) communications equipment, and with super high frequency (SHF) satellite communications equipment, to provide reliable and survivable communications to our forces.

We are funding upgrades to the EC-135 airborne command posts (modified Boeing 707 aircraft) serving the Commander-in-Chief, Strategic Air Command (CINCSAC) and other nuclear force commanders. We are hardening the aircraft against EMP effects and are providing their VLF/LF communications systems with anti-jamming protection and increased transmitter power. We are also developing improved satellite communications terminals for installation on the aircraft. These communications upgrades should give EC-135 airborne command posts a capability comparable to that of the E-4B for sending emergency action messages to the forces.

(2) Mobile Command Centers

We believe that the E-4B and the upgraded EC-135 airborne command posts will greatly improve our capability to retaliate effectively during the early phase of a nuclear conflict. We remain concerned, however, about the ability of airborne command posts to operate beyond the first few days of a nuclear war. We will therefore develop and deploy terrestrial mobile command centers (MCCs) that could supplement or take over the key functions of airborne command posts if they could no longer operate effectively.

c. Communications

Survivable communications links are needed to ensure reliable dissemination of emergency action messages to our ICBMs, bombers, and submarines in a nuclear war. Our FY 1983-87 program will reduce the vulnerability of our strategic communications to physical attack, jamming, and nuclear effects.

(1) Satellite Communications Systems

We will achieve FOC for the Air Force Satellite Communications (AFSATCOM) system in 1983 by completing installation of satellite communications terminals at ICBM launch control centers and on airborne command posts, SAC bombers, and TACAMO aircraft. The AFSATCOM space segment includes UHF communications channels on the Fleet Satellite Communications System (FLTSATCOM) satellites in geostationary orbits and on other host satellites. To increase AFSATCOM jamming protection, we plan to deploy SHF single-channel transponders (SCTs) on geostationary Defense Satellite Communications System (DSCS) Phase III satellites. By 1986, we expect E-4B airborne command post aircraft to be able to communicate through the SHF SCTs. We will procure three additional FLTSATCOM satellites to maintain AFSATCOM service throughout the 1980s and to serve the needs of Navy general purpose forces.

To control our forces effectively during a nuclear war, we would need two-way communications with jamming protection between commanders and forces. Therefore, we are funding the development of a new satellite communications system (MILSTAR) providing extremely high frequency (EHF) communication channels that would be able to operate against severe enemy jamming.

(2) Mobile Communications Systems

We depend on Navy TACAMO EC-130 aircraft for survivable communications to our ballistic missile submarines. Currently, one of these aircraft is continuously airborne over the Atlantic to ensure that NCA orders could be relayed to SSBNs in that area, even if fixed, ground-based transmitters were destroyed. To satisfy a requirement for airborne TACAMO in the Pacific, we will deploy a fleet of 18 TACAMO EC-130 aircraft by mid-FY 1983. In the longer term, we are planning to replace the TACAMO EC-130s with a new aircraft, designated EC-X. The EC-X will initially be equipped with the same communications gear as the EC-130, but its additional capacity will allow us to add more C^3 equipment in the future. We plan to deploy a Pacific EC-X squadron and an Atlantic squadron by the late 1980s.

(3) Ground-Based Communications Systems

We will plan to develop and deploy a network of proliferated communications relay nodes within the United States to assure dissemination of warning information, launch-for-survival orders, and emergency action messages to CONUS-based forces in the early phase of a nuclear attack. To upgrade our peacetime communications to deployed submarines and to support the transition to wartime operations, we have decided to deploy the extremely low frequency (ELF) communications system at two sites in CONUS and to equip all nuclear submarines with ELF receivers.

d. Program Costs

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

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
Strategic Surveillance and Warning (Satellite Early Warning System, BMEWS, PAVE PAWS, Advanced Warning System, IONDS)				
Development: $ Millions	89.0	183.9	243.0	216.8
Procurement: $ Millions	159.9	383.5	588.1	517.0
Strategic Command Centers (E-4B ABNCP, EC-135 Upgrades, MCC)				
Development: $ Millions	9.8	19.4	29.0	83.6
Procurement: $ Millions	146.5	148.1	33.3	38.1
Strategic Communications (AFSATCOM, MILSTAR, TACAMO, Bomber VLF/LF Receivers, CONUS Radio Network, ELF)				
Development: $ Millions	83.8	139.2	249.8	440.7
Procurement: $ Millions	48.5	76.6	65.4	190.5

E. NON-STRATEGIC NUCLEAR FORCES

1. Introduction

In addition to strategic nuclear forces, the United States has a number of systems of less than intercontinental range that are capable of delivering nuclear weapons. These systems are deployed with land, naval, and air forces to enhance deterrence by providing nuclear capabilities at the lower end of the nuclear spectrum, firmly linking strategic forces to our conventional capabilities.

The United States has a variety of nuclear weapons designated for non-strategic use. Most of these weapons are deployed outside the United States; the majority support NATO forces in Europe. These include intermediate-range nuclear forces (INF), such as air-delivered bombs and intermediate-range missiles; short-range nuclear forces (SNF), such as artillery projectiles and surface-to-surface missiles; land-based defensive systems, such as surface-to-air missiles and atomic demolition munitions; and maritime systems. Although they are strategic systems, some POSEIDON submarine-launched ballistic missiles are committed NATO for non-strategic targeting. Defensive nuclear weapons, such as anti-air warfare (AAW) and anti-submarine warfare systems, are deployed aboard some of our ships and submarines.

The most important objective of our non-strategic nuclear force modernization program is the deployment of 464 ground-launched cruise missiles (GLCMs) and 108 PERSHING II launchers in Europe. We are also modernizing our stockpiles of nuclear artillery, short-range missiles, bombs, and maritime weapons. We continue to seek improvements in the safety, security, and survivability of our nuclear warheads and systems.

2. Program Description and Status

a. Longer-Range INF Missiles

NATO does not have any land-based longer-range INF missiles at the present time. This will be changed by the introduction of two new land-based missile systems, PERSHING II and GLCM, in late 1983. The PERSHING II ballistic missile, a follow-on to the shorter-range PERSHING IA now deployed in Europe, is now in engineering development. GLCM, which is also in engineering development, has an operational design range of 2,500 km. The high accuracy and yields of PERSHING II and GLCM will provide a capability to attack hard targets while limiting collateral damage. Table III.E.1 shows current and projected funding for these systems.

TABLE III.E.1

PERSHING II and GLCM Costs

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
PERSHING II 1/				
Procurement:				
Quantity	--	21	91	95
$ Millions	2.3	221.6	508.6	431.1
RDT&E:				
$ Millions	149.4	150.6	111.3	23.6
GLCM 1/				
Procurement:				
Quantity	11	54	120	120
$ Millions	164.1	350.5	530.7	474.0
RDT&E:				
$ Millions	107.6	80.1	28.6	24.0

1/ DoE funds are not included.

The deployment of a mixed ballistic missile/cruise missile force hedges against the unexpected neutralization of either system, provides the flexibility to select the best weapon for a given mission, and greatly complicates enemy planning. PERSHING II offers a high assurance of penetrating future Soviet defenses, provides the capability to strike time-urgent targets, and takes advantage of the existing PERSHING IA infrastructure. GLCM's longer range allows it to attack deeper targets and to be based farther rearward, thereby increasing its pre-launch survivability and offering an opportunity for broader participation among the allies through deployments on their soil.

The deployment of PERSHING II and GLCM will permit greater flexibility in the employment of dual-capable aircraft (DCA), thus improving NATO's conventional war-fighting capabilities. PERSHING II and GLCM deployments will also significantly enhance deterrence by increasing NATO's current capability to destroy fixed targets.

b. Shorter-Range INF Missiles

NATO's current shorter-range INF missiles are limited to PERSHING IA ballistic missiles. U.S. PERSHING IAs will be replaced with PERSHING II missiles on a one-for-one basis. The Federal Republic of Germany will retain their current PERSHING IAs.

c. INF Aircraft

NATO's current INF aircraft include dual-capable VULCAN, F-111, F-4, F-104, and JAGUAR aircraft. (The VULCAN and F-111 have the capability to attack targets in the western Soviet Union in addition to Eastern Europe.) We are undertaking several programs to modernize our INF aircraft. NATO will replace, by the mid-1980s, most of its current DCA with dual-capable F-16 and TORNADO fighter-bombers. We are modernizing our tactical bomb stockpile with the deployment of new models that have improved military characteristics and enhanced safety and security features.

d. Short-Range Nuclear Forces

Short-range nuclear weapons include 8-inch and 155mm howitzers and associated artillery-fired atomic projectiles (AFAPs), and LANCE and HONEST JOHN surface-to-surface missiles. These forces directly support ground forces in combat with the enemy and would be used for shallow interdiction. (HONEST JOHN has been replaced by LANCE in U.S. delivery units but continues to be deployed in some non-U.S. NATO units.)

We are undertaking several programs to upgrade our short-range nuclear capability. Included among these are production of new 8-inch artillery rounds and additional LANCE warheads, both incorporating an enhanced radiation (ER) feature. The new artillery round, a rocket-assisted projectile (RAP), has a greater range than the current round and corrects other performance deficiencies. Table III.E.2 shows current and projected funding for this program.

TABLE III.E.2

8-Inch AFAP Costs

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
8-Inch AFAP 1/				
Procurement: $ Millions	24.6	16.1	14.4	11.7
RDT&E: $ Millions	1.8	0.0	0.0	0.0

1/ DoE funds are not included.

These new ER warheads will be stockpiled solely on U.S. territory. Any decision to deploy ER warheads would be taken only after close consultation with any country on whose territory they would be based, and then only with the explicit approval of the President.

e. Land-Based Defensive Systems

Land-based defensive forces include the NIKE-HERCULES air defense system and atomic demolition munitions (ADMs). We plan to retire our NIKE-HERCULES nuclear warheads as improved conventional air defense systems are deployed. We do not intend to replace ADMs with new nuclear weapons when they reach the end of their stockpile lifetime.

f. Maritime Systems

NATO's current longer-range maritime systems include U.K. POLARIS and U.S. POSEIDON submarine-launched ballistic missiles (SLBMs) and U.S. carrier-based aircraft. (France also maintains ballistic missile submarines (SSBNs), but they are not formally committed to NATO.) The United Kingdom plans to modernize its SLBM force in the 1990s by replacing its four POLARIS-carrying SSBNs with either four or five new British SSBNs carrying TRIDENT missiles. Like the VULCANs and F-111s, these maritime forces are able to attack targets in the western Soviet Union.

Our other maritime systems include anti-air, anti-submarine, and anti-surface ship warfare systems, such as the TERRIER, ASROC, SUBROC, air-delivered nuclear depth bombs, and carrier-based tactical bombs. To modernize the nuclear capability of our submarines and surface ships, we are developing weapons that will enable us to counter the enemy air threat more effectively and to attack enemy submarines from longer ranges. While all of these weapons would help defend our naval forces in a nuclear war, they would also strengthen deterrence. These weapons, and our sea-based nuclear forces for land attack, in conjunction with our land-based nuclear forces, support our policy that we will not permit the Soviets to limit a nuclear war to the sea.

g. C^3I Systems

We continue to seek improvements in the security, reliability, and capability of the command, control, communications, and intelligence (C^3I) systems that support our non-strategic nuclear forces.

In 1981 we completed a number of urgent upgrades in our communications links to U.S. custodial units in Europe. We extended the European Command and Control Console System (ECCCS) and installed new high frequency (HF) radios at four existing broadcast control stations. In addition, we have begun a program to provide a modern, survivable, jam-resistant and EMP-hardened HF radio system in Europe. We are continuing to deploy satellite communications terminals for our non-strategic nuclear forces, to provide redundant means of transmitting emergency action messages. We are also addressing total long-range C^3I requirements for nuclear weapons custody, targeting, and control. We expect to include key initiatives identified in these studies in future defense budgets.

h. Safety, Security, and Survivability

The safety, security, and survivability of our nuclear forces are key elements of our modernization program. We are continuing to make our nuclear forces more survivable in combat. We are taking steps to protect our nuclear weapons from seizure by enemy forces, terrorists, or other subversive organizations. Additionally, we are working closely with the Department of Energy to make our nuclear systems safer and more secure.

F. COMMAND, CONTROL, COMMUNICATIONS AND INTELLIGENCE (C^3I)

1. Program Basis

a. Missions and Functions

Our C^3I system provides the capability required to transform individual weapons systems into an integrated, effective force. This system must satisfy the needs of all echelons of our forces to observe, provide warning and attack assessment, process information, support decisionmaking, communicate, navigate, and degrade an enemy's ability to perform those functions. The difficulty of this mission is underscored by the need for worldwide execution under conditions that range from day-to-day peacetime operations through all feasible levels of conflict.

The components of the C^3I system dedicated to specific warfare missions are discussed elsewhere in this report. This chapter focuses on the status of C^3I assets that support cross-mission and cross-Service needs.

b. Major Initiatives

We are pursuing four major initiatives to improve our ability to manage, procure, and operate our C^3I system.

-- We are giving our C^3I system equal priority with the weapon systems they support, stressing survivability and endurance, and treating the overall C^3I-weapon system mix as a totality. This perspective will ensure the needs of the weapon systems are satisfied over a broad range of possible conflict environments.

-- We are pursuing a planning process which views the evolving C^3I-weapon system over a 15 year horizon to guide the direction and pace of that evolution. In this context, the Joint Chiefs of Staff and the Defense Intelligence Agency, in response to guidance and direction from the OSD staff, are focusing on cross-Service, cross-command, cross-program, and international command planning and requirements. By adopting this perspective, we hope to improve program stability and create an integrated system that is affordable, effective, survivable, and enduring.

-- We are designing and deploying an enhanced C^3I system which, through emphasis on survivability and endurance, can resist the current and projected Soviet threat.

-- We are stressing system interoperability, both among our own Services and with our allies, to preserve the order and cohesiveness of our forces and to use our total assets most effectively.

2. Program Description

Consistent with our total systems view of the C^3I-weapon system mix, we manage our C^3I program in the context of major mission areas as depicted in Chart III.F.1:

-- nuclear forces C^3;

-- theater and tactical C^3;

-- defense-wide C^3;

-- electronic warfare (EW) and C^3 countermeasures (C^3CM); and

-- defense-wide intelligence.

(U) Chart III.F.2 summarizes the funding requested for C^3I programs by major mission area for FY 1983.

a. Nuclear Forces C^3

The President recently approved a plan that seeks to redress the relative imbalance between U.S. and USSR strategic forces by ensuring the total U.S. strategic C^3I-weapon system mix is effective, survivable, and enduring. To realize that goal we are developing a balanced strategic modernization package that includes improvements to our strategic surveillance and warning systems, command centers, and communications. Major elements include: continuing efforts to enhance the survivability and endurance of our missile attack warning system and to acquire an improved nuclear detonation detection and position fixing capability; upgrading existing airborne command centers and reinforcing C^2 for enduring force management; and developing improved satellite communications relay links for essential force management functions. Additional details of the strategic modernization program are presented in Part III.D.

In the area of non-strategic nuclear forces C^3, a comprehensive system improvement plan has been prepared and is undergoing final approval. The overall objective of the plan is to ensure the effectiveness of non-strategic nuclear forces, under a strategy of flexible response, by improving C^3 security and survivability. Details of the improvement program in Europe are given in Part III.E.

b. Theater and Tactical C^3

Our theater and tactical C^3 program emphasizes initiatives in four areas:

CHART III.F.1

C^3I MISSION AREA STRUCTURE

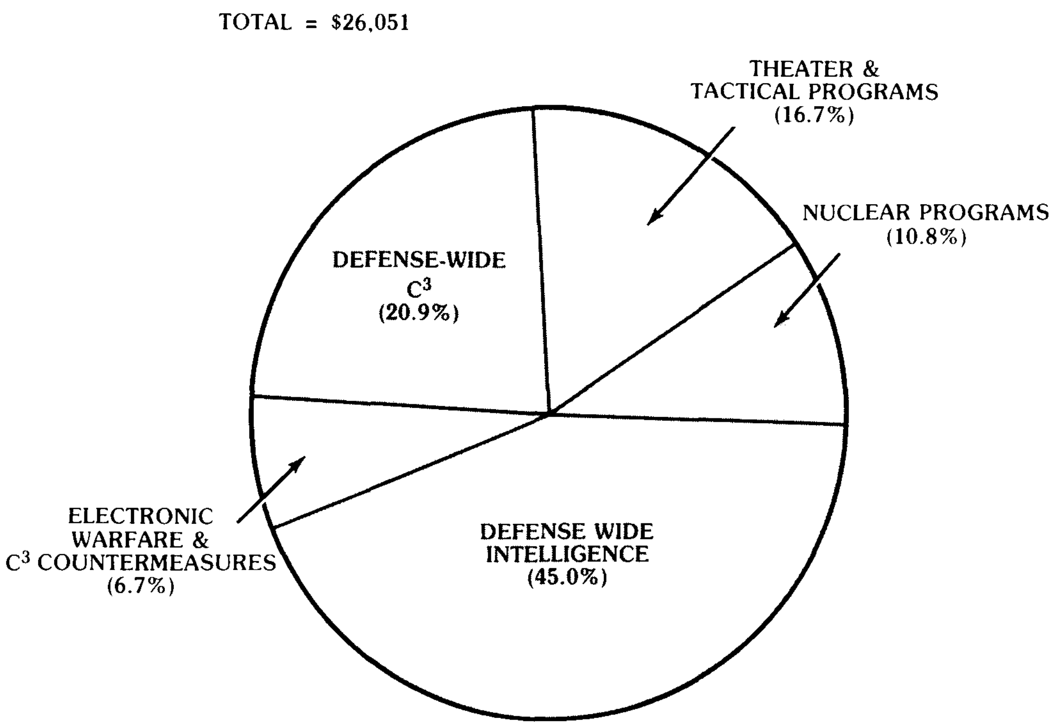
NUCLEAR PROGRAMS	THEATER & TACTICAL PROGRAMS
• STRATEGIC SURVEILLANCE & WARNING SYSTEMS • STRATEGIC COMMAND & CONTROL SYSTEMS • STRATEGIC COMMUNICATIONS • NON-STRATEGIC NUCLEAR FORCES C^3	• THEATER & TACTICAL SURVEILLANCE, RECONNAISSANCE & TARGET ACQUISITION • THEATER & TACTICAL COMMAND & CONTROL SYSTEMS • THEATER & TACTICAL COMMUNICATIONS

DEFENSE-WIDE PROGRAMS

DEFENSE-WIDE C3	ELECTRONIC WARFARE & C^3 COUNTERMEASURES	DEFENSE-WIDE INTELLIGENCE
• NAVIGATION & POSITION FIXING • BASE & SUPPORT COMMUNICATIONS • COMMON-USER COMMUNICATIONS • COMMUNICATIONS SECURITY • INFORMATION SYSTEMS	• DEFENSIVE ELECTRONIC COUNTERMEASURES • RADAR WARNING RECEIVERS • MUTUAL SUPPORT ELECTRONIC WARFARE • C3 COUNTERMEASURES	• NATIONAL FOREIGN INTELLIGENCE PROGRAM • TACTICAL INTELLIGENCE AND RELATED ACTIVITIES

CHART III.F.2

(U) C³I PROGRAM (FY 1983 BUDGET REQUEST)



*INCLUDES WARFARE COMMAND AND CONTROL
NOTE: SUM DOES NOT TOTAL 100% BECAUSE OF ROUNDING ERRORS

-- We are improving our ability to participate in joint and combined operations worldwide. One activity pivotal to these operations is the Combat Identification System (CIS) program.

-- We are seeking to improve our force management capabilities emphasizing C^3 means deployable to areas where we have no permanent facilities. Key programs in this area include the E-3A Airborne Warning and Control System (AWACS), Joint Crisis Management Capability (JCMC), and Joint Tactical Fusion Program.

-- We are improving information distribution capabilities for tactical forces. This initiative encompasses joint efforts in the areas of digital data exchange and jam resistant, secure voice systems.

-- We are pursuing programs that enhance interoperability, survivability, and restorability of essential C^3 functions. Key activities in this area include the Joint Interoperability of Tactical Command and Control Systems (JINTACCS) program and the Joint Tactical Communications Program (TRI-TAC).

These specific joint Service programs are discussed below. Highlights of theater and tactical C^3I programs which relate to single mission areas are presented in Part III.A, B, C, E, H, and K, and NATO-related C^3I initiatives are described in Part III.I

(1) Combat Identification System

We have established a joint Service CIS Program Office to develop a total identification system that is interoperable with our NATO allies. The system will draw upon identification information from direct sources (e.g., Mark XV, an improved question and answer system) and indirect sources (e.g., C^2 and external sensor support). An important milestone in the program was achieved in June when we confirmed draft Standard NATO Agreement (STANAG) 4162. However, we have reserved the right to explore promising options which are non-compliant with the draft STANAG. We expect to complete a cost-effectiveness analysis of alternative candidates for the new CIS in early 1982.

(2) C^2 Facilities

(a) E-3A (AWACS)

The Air Force has continued to accept delivery of E-3A (AWACS) aircraft and to support and participate in the NATO AWACS program (see Part III.I).

In October 1981, 20 of the 34 programmed E-3As were operationally available to perform surveillance and warning activities in support of worldwide tactical and North American air defense missions. The most notable uses of the system during the past year have been in West German airspace in response to the crisis in Poland and over the Persian Gulf to aid Saudi Arabia. The remaining E-3As will be enhanced by upgrading their radar and computer systems and installing Joint Tactical Information Distribution System (JTIDS) communications terminals.

(b) Joint Crisis Management Capability

This program will provide theater Commanders-in-Chief with ground and air transportable C^3 facilities capable of rapid deployment for use in crisis management situations and military contingency operations. The program will ultimately provide four levels of support ranging in capability from a manpack Ultra-High Frequency Satellite Communications (UHF SATCOM) terminal for minor crisis situations (Level 1) through CONUS-based C^3 augmentation assets capable of supporting large-scale joint task force operation (Level 4). Level 1 equipment will be deployed by December 1982 and funds to procure Levels 2 and 3 are requested in the FY 1983 budget, leading to an initial operational capability in FY 1986.

(c) Joint Tactical Fusion Program

The Joint Tactical Fusion Program will develop automation support to correlate inputs from multiple sources and synthesize all available sensor information to provide the tactical commander an accurate and timely display of the battlefield situation. The program builds on the results derived from earlier developmental systems such as Battlefield Exploitation and Target Acquisition (BETA). The program will develop and procure an Army All Source Analysis System (ASAS) and an Air Force Enemy Situation Correlation Element (ENSCE). Development is being managed as a joint program to ensure the two systems are interoperable and that they employ the greatest commonality of hardware and software, consistent with Service-unique requirements and priorities.

(3) Information Distribution for Tactical Forces

We are developing tactical data and voice distribution systems that improve through-put capacity, security, jam-resistance and interoperability. These efforts are complementary because tactical data links permit the timely exchange of large amounts of well structured information (e.g., surveillance information among C^2 nodes) while voice links are required for critical information which is highly perishable and unpredictable. There are six major programs in the area of secure, jam-resistant, line of sight comunications that address either one or both of these needs: the joint Army, Air Force, and Navy JTIDS program (see Part III.C), joint Army-Marine Corps PLRS program (see Part III.A), Army Single Channel Ground-Airborne Radio System-VHF (SINCGARS-V) (see Part III.A), Air Force HAVE QUICK and SEEK TALK UHF voice radio programs (see Part III.C) and Navy ARC-182 radio. These programs differ in their projected fielding dates, operating frequencies, capability, and cost. Lethal methods are also being evaluated to complement these non-lethal jam-resistant systems. We are carefully scrutinizing all activities to ensure the composite architecture allows for required levels of inter-Service interoperability and provides the necessary technical attributes to defeat the enemy threat at acceptable levels of risk and cost.

(4) Interoperability

Significant milestones in interoperability have been achieved during the last year in the JINTACCS and TRI-TAC programs.

(a) Joint Interoperability of Tactical Command and Control Systems (JINTACCS)

JINTACCS is developing standards and performing tests to ensure selected joint Service tactical data systems are interoperable and compatible. We conducted the first operational effectiveness demonstration (OED) of joint Service intelligence systems last May in conjunction with the joint readiness exercise SOLID SHIELD 81.

(b) Joint Tactical Communications Program (TRI-TAC)

TRI-TAC made a noteworthy shift in orientation from development to production. This system promotes interoperability by permitting the Services to transition jointly from their current tactical analog equipment to a modern digital communication system that provides voice, data, and facsimile service.

c. Defense-Wide C^3

The area of Defense-Wide C^3 includes five major classes of systems which provide the infrastructure for navigation and position-fixing; base and support communications; common-user communications; communications security; and information systems.

(1) Navigation and Position-Fixing/ Nuclear Burst Detection and Position Fixing

The NAVSTAR Global Positioning System (GPS)/Integrated Operational NUDETS Detection System (IONDS) is expected to become fully operational by 1988. The system will provide: (1) position, velocity, and time information, and (2) geopositioning of nuclear detonations information, with unprecedented accuracy, throughout the world under all weather conditions. The user equipment is being designed to withstand feasible enemy countermeasures and the satellites will be in dispersed, high-altitude orbits with a degree of hardening that provides for graceful degradation of coverage under presently projected threats. The IONDS component of the total system will permit rapid and accurate detection, estimates of yield and height of burst, and worldwide geopositioning of nuclear detonations (see Part III.D).

Tests have demonstrated that the NAVSTAR GPS concept is operationally feasible and that 16-meter global accuracies are achievable. The request for FY 1983 includes funding to continue full-scale engineering development of the satellites, the ground control station and user equipment, and procurement of production satellites.

(2) Base and Support Communications

We are requesting $1.09 billion for worldwide base and support communications in FY 1983. One of the major efforts in this area is the replacement of existing obsolete telephone systems in all Services. Studies reveal that savings from the application of electronic switching in leased systems are large enough in many cases to pay for the one-time installation costs in the first year. For owned systems, the savings often pay for total equipment costs in five to ten years. In addition to the cost savings, electronic switching equipment provides features which permit better system management, reliability, and utilization.

(3) Common-User Communications

(a) Architectural Initiatives for Satellite Communications (SATCOM)

In April 1981, a new architecture for SATCOM systems was approved to provide a consistent plan for the development and deployment of space segments and associated terminal equipment. The architecture encompasses four systems which provide ultra, super, and extremely high frequency (UHF, SHF, and EHF) communications relay service to strategic, tactical, and agency users. This program includes the following systems and enhancements:

-- The Military Strategic, Tactical, and Relay (MILSTAR) SATCOM program will provide EHF service to strategic and tactical users and additional UHF service for strategic users.

-- The Defense Satellite Communications System (DSCS), will augment its existing SHF service with improved jam-resistance.

- -- The Leased Satellite (LEASAT) system will provide UHF service to tactical users, planning to begin in 1984.

- -- The Fleet Satellite Communications (FLTSATCOM) system will procure three additional satellites for provision of service to strategic and tactical users until MILSTAR satellites are deployed.

(b) Defense Communications System (DCS)

The DCS provides our military forces with worldwide, long-haul, common-user voice, data, and teletype services through composite networks of U.S. owned and commercially leased facilities. To support C^3 needs in combat, we are pursuing options to enhance the system's interoperability with those of NATO, modernize it, and improve its survivability. Specific programs to meet these needs are discussed below.

Communications Survivability in Europe--The Digital European Backbone (DEB) is an ongoing four phase program that will upgrade the DCS backbone in Europe to a more reliable, totally secure system. A related improvement to our European communications is the installation of the European Telephone System (ETS) serving U.S. forces in Central Europe. We have also directed DCA to plan to harden key European nodes. These systems will be interconnected with those of NATO and national networks to enhance the order and cohesiveness of allied forces and to use our total assets more effectively.

Automatic Digital Network II (AUTODIN II)--The AUTODIN II program is intended to provide a general purpose data communications packet-switched network for integrating the teleprocessing and record communications needs of DoD into a single digital backbone transmission system. As a consequence of our increased emphasis on system survivability and endurance, we are evaluating whether AUTODIN II remains the most attractive option for common-user data communications. Alternative options under consideration include a larger number of smaller communications nodes employed in networks such as the World Wide Military Command and Control System (WWMCCS) Intercomputer Network (WIN) and the ARPANET. Our evaluation will be completed prior to the transfer of the first operational user to AUTODIN II, now scheduled for March 1982.

Survivability of Telecommunications Networks--Presidential Directive 53 requires us to include survivability improvements for telecommunications networks under the control of the National Communications System (NCS). In FY 1983, we have funded to begin the portion of this effort under the control of DoD.

Commercial Satellite Communications--A commercial satellite project is being initiated to take advantage of newly emerging competitiveness in the U.S. telecommunications industry to provide an alternative lower cost system for long-haul communications. The Defense Communications Agency is establishing commercial satellite service to four communities of interest (COIs) in 1982, adding nine additional COIs in 1983, and achieving the interconnection of the full complement of 36 COIs in 1986. Initial savings of $2.0 million are estimated for FY 1983 and $83.6 million for FY 1984-87.

(4) Communications Security (COMSEC)

The objective of our COMSEC program is to deny an adversary opportunities to gain valuable intelligence by exploiting our communications systems. To achieve this objective we are procuring cryptographic equipment and implementing COMSEC measures to counter hostile intelligence efforts.

(5) Information Systems

Defense information systems consist of data processing, data communications, reporting systems, and the people who operate and manage them. A major objective of our effort in this area is to achieve interoperability among our Defense information systems, so information can be shared effectively. To achieve this end we are modernizing existing systems and developing common standards and procedures. Our major initiatives in this area include improvements to the WWMCCS Information Systems (WIS), Automated Message Handling Systems (AMHS), and computer security.

(a) WWMCCS Information Systems

The WWMCCS standard automated data processing (ADP) program provides standard computer hardware and software to support common C^2 needs at locations worldwide. Deficiencies in these systems include: approaching hardware obsolescence, high maintenance costs, and limited system surge capabilities required to support crisis management operations. Recent improvements in computer technology make it both feasible and economical to correct these deficiencies. We reported to the Congress in January, 1981 on our plans to modernize the WWMCCS ADP and that effort is proceeding as planned. A Joint Program Management office has been established within the Air Force to provide a single point of contact and management for the WIS modernization program. A detailed status report on the program will be transmitted to the Congress under separate cover on 1 July 1982.

The WWMCCS Intercomputer Network (WIN) interconnects 20 of the WWMCCS ADP locations. The initiatives we are pursuing with WIN include: continuation of efforts to improve reliability and operational capability; replacement of obsolete hardware and software in the communications sub-network; and installation of a Network Front End processor at each WIN site.

(b) Automated Message Handling Systems (AMHS)

AMHS provides a means to organize and quickly retrieve items from the mass of messages which flow into intelligence and command centers. An interim standard system, the National Military Intelligence Center Support Sub-System, has been in use in support of intelligence analysis since November 1979. A follow-on system to meet the needs of the C^2 community is being developed as part of the WIS modernization program.

(c) Computer Security

A major step in achieving multi-level secure computer systems was taken this year by establishing the Computer Security Evaluation Center (CSEC) at the National Security Agency (NSA). The CSEC will be a center of excellence in computer security techniques to develop DoD trusted computer systems and to evaluate the integrity of vendor products.

d. Electronic Warfare (EW) and C^3 Countermeasures (C^3CM)

EW and C^3CM are employed to disrupt the performance of enemy weapons and C^3 systems, and to protect friendly systems from enemy attack and disruption. These systems are subdivided into four major complementary classes: defensive electronic countermeasures (DECM); radar warning receivers (RWR); mutual support electronic warfare; and C^3CM. They must be able to cope with the Warsaw Pact's proliferation and continued improvement of sophisticated counter-air weapon systems and networks. Our broad objectives are to develop and procure economically sufficient quantities of equipment to equip the tactical forces, to deploy new/improved systems to keep pace with the evolving threat, and to obtain a balanced mix of lethal and non-lethal countermeasure capabilities.

(1) Defensive Electronic Countermeasures (DECM)

In the area of DECM, emphasis is being placed on developing and procuring self-protection jammers. The major new system acquisition is the joint Navy and Air Force Airborne Self-Protection Jammer (ASPJ), ALQ-165. Fabrication of the prototype system began in the fourth quarter of FY 1981 and developmental test and evaluation is scheduled to begin in FY 1983. Aircraft scheduled for ASPJ include the F-14, F-16, F-18, A-6E, EA-6B, and perhaps the F-111.

(2) Radar Warning Receivers (RWR)

The primary purpose of RWR systems is to warn a pilot of the types of threats that are illuminating him, their status, and their bearing so that he can perform evasive tactics. The Air Force ALR-69 will be updated using major portions of the Navy ALR-67, our newest

RWR. Future updates to both systems will be common, resulting in cost savings through larger procurements.

(3) Mutual Support EW

Our primary mutual support EW systems are the Navy's EA-6B aircraft and the Air Force's EF-111A. The Navy is planning to procure six EA-6Bs per year for the FYDP years beginning in FY 1983. The Air Force is planning to modify nine F-111 aircraft to the EF-111A configuration in FY 1983.

(4) Command, Control, and Communications Countermeasures (C^3CM)

Efforts are underway to develop and procure systems that can degrade enemy operations by attacking, electromagnetically and physically, key hostile C^3 nodes. As an example, FY 1983 procurement funds have been requested by the Air Force for a dedicated stand-off jamming system.

e. Intelligence Program

Intelligence activities in which the Department is involved are divided into two broad categories: the National Foreign Intelligence Program and Defense Tactical Intelligence and Related Activities (TIARA). Since specific information on these activities is sensitive, it is possible to provide only the following broad description of their dimensions.

(1) National Foreign Intelligence Program

National intelligence is vital to support force planners and developers of weapons systems. Within the Defense portion of the National Foreign Intelligence Program (NFIP), there are five programs: the Consolidated Cryptologic Program (CCP), the General Defense Intelligence Program (GDIP), the Defense Foreign Counter Intelligence Programs, and the Air Force and Navy Special Activities Programs. The Special Activities Programs provide essential information to national policymakers and to force commanders.

(2) Tactical Intelligence and Related Activities

The Tactical Intelligence and Related Activities (TIARA) aggregation consists of those DoD activities outside the NFIP that provide timely intelligence support to operational commanders. These activities are accounted for in three major categories: Tactical Intelligence, Reconnaissance, Surveillance, and Target Acquisition; the Defense Reconnaissance Support Program (DRSP); and the Tactical Cryptologic Program (TCP).

(3) Intelligence Oversight

Responsibility for independent oversight of all DoD intelligence and counterintelligence activities is assigned to the Inspector General for Intelligence who reports on such matters to the Deputy Secretary of Defense and the White House Intelligence Oversight Board. To ensure the legality and propriety of our activities, he inspects DoD intelligence elements worldwide and monitors the inspections of intelligence elements conducted by military service and defense agency inspectors general. He also conducts, directs, or monitors investigations of alleged questionable activities within the DoD intelligence community.

3. Conclusions

We have launched several initiatives that should alter significantly the evolution of our C^3I system. First, we are viewing and managing the C^3I-weapon system mix as a totality. The emphasis is on developing a highly survivable system which satisfies the requirements of the weapon systems they support over a broad range of feasible conflict environments. Second, we are placing greater emphasis on longer-range planning. In this planning process we are defining the mission capabilities and characteristics that are required to support national security objectives and formulating fiscally constrained system architectures to identify time-phased mixes of systems that satisfy mission needs consistent with technological capabilities. These architectures provide the mechanism required to ensure joint and combined interoperability and to ensure that our C^3I systems are as survivable and enduring as the weapon systems they support. To select preferred, realistic architectural options, we are pursuing mission-oriented evaluations of the total system. Finally, we are encouraging management initiatives to improve the acquisition process. We anticipate increased use of pre-planned product improvements; common programs, to provide cost-savings through larger procurements; and procurement of sufficient quantities of critical equipment at economical rates to equip the forces.

G. MOBILITY FORCES

1. Introduction

a. Program Basis

Mobility forces are structured to meet wartime requirements for deployment, employment, and resupply of forces. This demands programs that are designed to deliver the appropriate mix of people, equipment, and supplies between and within theaters of operation. Our FY 1983-87 program funds new initiatives and enhances existing programs that will increase our capability to project and sustain our forces. These include acquisition of additional cargo aircraft, prepositioning of additional supplies and equipment, and enhancements to our sealift capability.

Our mobility programs consist of a mix of military and civilian aircraft and ships, augmented by prepositioned unit equipment and supplies. During wartime, the combat forces to be moved and the delivery schedule determine the overall mobility requirement. Both the distance to be traveled and the availability of acceptable routes have a significant effect on the mix of mobility programs that can provide for the timely deployment of forces.

Each mobility program has a distinct role in meeting the overall requirement. Airlift is fast, flexible, and sometimes the only option available in the early stages of a contingency, but it is also expensive and has a limited capacity. Sealift can move large amounts of equipment and supplies, but lacks the speed and, therefore, some of the flexibility of airlift. Prepositioning complements both airlift and sealift but is politically sensitive and less flexible. Maritime prepositioning provides an alternative to land-based programs when political considerations or the need for flexibility constrain land-based prepositioning.

(1) Objectives

Our long-term goal is to be able to meet the demands of a worldwide war, including concurrent reinforcement of Europe, deployment to Southwest Asia (SWA), and support in other potential areas of conflict. In building toward this goal, mobility forces will be acquired first to meet the intertheater and intratheater demands of each theater independently and then to meet the demands of concurrent deployment.

For the rapid reinforcement of NATO, we want the capability to deploy 6 Army divisions, a Marine Amphibious Brigade (MAB), and 60 tactical fighter squadrons --all with initial support--within 10 days. While currently available sealift resources could deliver follow-on forces and resupply, they could not meet the immediate deployment requirements for the initial combat forces and their support. Airlift could move troops and equipment within the required time, but fiscal constraints will not permit an airlift force large enough to meet our immediate reinforcement objectives. Therefore, we rely on prepositioned unit equipment and supplies, in conjunction with airlift, to deploy the initial combat forces and some of the required support. Airlift and sealift will deliver the follow-on forces and perform the resupply operation.

Our deployment objectives for a Southwest Asian contingency are based on deterring the Soviet threat. To do this, we believe that we must be able to deploy initial light ground combat units and tactical air forces very quickly--in about a week--to occupy key positions and provide air defense. We must then be able to reinforce this initial deployment at a steady rate, completing the movement of a Rapid Deployment Joint Task Force (RDJTF) in four to six weeks. Such a deployment schedule places heavy demands on airlift and prepositioning and on early available sealift. The requirement for flexibility, together with political considerations, causes us to rely more heavily on maritime prepositioning as a complement to airlift and sealift for an RDJTF deployment than for a NATO reinforcement.

(2) Meeting the Objectives

Our FY 1983-87 mobility programs will enhance our capability to meet these deployment objectives. The additional airlift procurement we have proposed, together with improvements in sealift and prepositioning, will move us close to our goal of meeting the mobility demands for a NATO reinforcement or a Southwest Asian RDJTF deployment. Meeting our long-term goal of concurrent deployments will require further increases in airlift and fast sealift, as well as additional prepositioning.

2. FY 1983-87 Mobility Programs

a. Force Structure

Table III.G.1 summarizes our major organic mobility assets for intertheater and intratheater deployments. Not shown are the commercial aircraft and ships committed to DoD for use in time of war or national emergency. The Long-Range International portion of the Civil Reserve Air Fleet (CRAF) consists of 215 passenger aircraft and 109 cargo aircraft. Our Merchant Fleet contains 270 dry cargo ships. Of those vessels, 186 are available by charter or government contract under the Sealift Readiness Program, which operates at no direct cost to DoD. Our medium-lift helicopter programs, essential for intratheater mobility, are discussed in Part III.A.

Table III.G.1

U.S. Mobility Assets

Aircraft

Active Forces Aircraft	Inventory 1/
C-5	70
C-141	234
C-130	218
CH-47/CH-54	316
CH-53	200
Reserve Forces Aircraft	**Inventory 1/**
C-130	294
C-7/C-123	19
CH-47/CH-54	182
CH-53	200

Dry Cargo Vessels

Fleet	Inventory
Military Sealift Command	24
Ready Reserve Force	27
Other NDRF Ships 2/	167

1/ Aircraft numbers are primary aircraft authorized (PAA) in operational squadrons.
2/ NDRF -- National Defense Reserve Fleet.

b. Assistance from Allies

Over the past several years, we have reached agreements with our NATO allies to provide about 600 NATO-registered ships and 49 long range cargo aircraft for use in a European reinforcement. Negotiations are currently under way to add passenger aircraft to the cargo aircraft already committed. Use of allied ships and aircraft would enhance our mobility capabilities in a NATO contingency and free U.S. ships and aircraft for deployment to other potential conflict areas.

c. Airlift Improvements

(1) C-5 Wing Modification

Structural deficiencies in the wings of the C-5A limit their use to 7,100 hours, which most aircraft will have accumulated within the next few years. To correct this problem, we are funding a modification program to extend the C-5's service life to at least the year 2000. The production line began in FY 1981, and all 77 aircraft in the inventory will be modified by FY 1987.

(2) Expanding Airlift Capability

The Congressionally-Mandated Mobility Study (CMMS) has documented the need for additional airlift to meet our near-term and future mobility requirements. Our FY 1983-87 program will provide much of the added airlift requirements identified by the CMMS, and it will do so as quickly as possible. The program procures additional C-5 and KC-10 aircraft and enhances the capabilities of the Civil Reserve Air Fleet (CRAF). Procuring additional C-5s and KC-10s will avoid the time and expense of developing and testing a new aircraft design and will permit us to add airlift capability with minimum risk in cost, scheduling, and performance.

To provide additional capacity for moving our large weapons systems and vehicles, we plan to accept a firm, fixed-price offer to produce 50 additional C-5N aircraft. The C-5 is our most flexible mobility resource; it is aerially refuelable and can carry a wide mix of unit equipment to any theater. By procuring additional C-5s, we will deliver 17 more aircraft during the program period than would be possible with a new design.

The KC-10 adds both cargo and tanker capability to the force. As a tanker, it can give the C-5 and C-141 worldwide capability without intermediate basing. As a cargo aircraft, it can provide needed airlift capability. Our program funds procurement of 44 additional KC-10s.

The CRAF Enhancement program compensates U.S. commercial airlines for the additional procurement and operating expenses of wide-bodied passenger aircraft that can be converted quickly to carry military cargo. With this program, we can add cargo capability at lower cost than procuring additional military aircraft. Last year, we requested proposals from the airlines for the modification of existing aircraft to a cargo-convertible configuration. The responses were nearly twice as expensive as we had expected, and we chose not to accept them. We believe that new contracting provisions in the FY 1982 Defense Authorization Act will make CRAF Enhancement less risky for the airlines and, therefore, less costly to DoD. We intend to design a new CRAF Enhancement program based on the revised authority Congress has given us, and anticipate proposing this new program in the FY 1984 budget. Among other options, the new program will consider modifying aircraft during production (once the airlines resume purchases), which should also lower program costs.

While our FY 1983-87 program adds airlift capability at an accelerated rate, it does not satisfy entirely our future airlift requirements. As we refine our long-term requirements and design future mobility programs, we will continue to evaluate new designs, including the C-17, that enable us to increase the capability, responsiveness, operational flexibility, and reliability of our airlift forces.

(3) Additional Improvements

In FY 1982, we will complete a program to stretch the C-141 and add aerial refueling capability. These modifications will increase the C-141's lift capacity by about 30 percent and provide additional flexibility for long-distance deployments.

Our five-year plan continues several other programs to improve our airlift capability. We have programmed funds to procure additional spare parts for our C-5s and C-141s to increase their wartime utilization rates. We are also modifying the Army's fleet of CH-47 helicopters to increase their operational capability, reliability, and maintainability. This will enable us to support the Army's medium-lift helicopter requirements until the year 2000. Continued procurement of CH-53E heavy-lift helicopters will enhance Marine Assault Force ship-to-shore movements and subsequent operations ashore.

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
C-5 Wing Modification				
Development: $ Millions	11.0	15.6	6.9	1.6
Procurement and Installation:				
Quantity	12	18	18	24
$ Millions	165.3	239.6	287.0	240.2
C-5 Procurement				
Quantity	--	--	2	10
$ Millions	--	270.0	860.0	2,171.5
KC-10 Procurement				
Quantity	6	6	8	8
$ Millions	327.0	357.4	829.1	579.6
Civil Reserve Air Fleet (CRAF) Enhancement 1/				
Quantity	--	--	--	4
$ Millions	--	--	--	184.7

1/ Assumes FY 1981 and 1982 appropriations are redirected.

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
C-141 Modifications				
Procurement:				
Quantity	33	--	--	--
$ Millions	119.1	47.0	--	--
Increased C-5 and C-141 Utilization				
Parts Procurement:				
$ Millions	160.2	580.8	93.1	305.2
CH-47 Modernization				
Procurement:				
$ Millions	212.6	310.2	288.4	400.5
CH-53 Procurement				
Quantity	14	14	11	11
$ Millions	235.3	260.8	311.0	367.2

d. Prepositioning

To meet our mobility objectives in the early days of a deployment, we have undertaken programs to preposition unit equipment, supplies, and ammunition in Europe and Southwest Asia for U.S.-based forces. Funding has been provided for both land-based and maritime prepositioning programs. With most major items of equipment prepositioned on land or on ships near the region, combat units and their residual equipment can be airlifted to the conflict area with a substantial reduction in delivery time. We are also improving intratheater transportation assets to ensure timely forward movement of prepositioned equipment.

(1) Prepositioned Materiel Configured to Unit Sets (POMCUS)

Under the POMCUS program, we have prepositioned equipment in Europe for four Army divisions and numerous non-divisional supporting units. To meet our program objectives, two additional sets will be prepositioned. Construction of the fifth POMCUS site began in October 1981, and work on the sixth started in January 1982. Storage construction for both sets will be completed by the end of FY 1983.

Completion of the POMCUS program will enable us to keep our commitment to provide NATO with 10 U.S. divisions by D-Day. Several of our NATO allies have agreed to provide extensive amounts of transportation and logistics support for both forward-deployed and reinforcing Army and Air Force units. These agreements are contingent upon our 10-division force commitment. This host nation support greatly reduces U.S. mobility requirements for a NATO reinforcement and makes U.S. support units available for an RDJTF deployment to Southwest Asia.

Successful completion of the POMCUS program will depend on continued host nation support, NATO Infrastructure funding, and the procurement of required equipment. Although there has been some concern in the past about possible equipment shortages, sufficient funds have been added to the Army's five-year plan to ensure that the storage sites will be filled without withdrawing equipment from active or reserve units.

(2) Air Force Prepositioning

The Air Force will begin programs in FY 1983 to preposition equipment in Europe for a NATO reinforcement and in Southwest Asia to support an RDJTF deployment to the region. The European program will preposition equipment for tactical fighter forces. Contingent upon obtaining suitable bilateral agreements, the Southwest Asian prepositioning program will provide funds for procurement, transportation, storage, and maintenance of mobile bare-base kits, resupply, and ammunition.

(3) Marine Corps Prepositioning

We have a Memorandum of Understanding with the Norwegian government to preposition Marine equipment in Norway to assist in the defense of NATO's Northern Flank. Funds are included for procurement of initial increments of unit equipment, supplies, and ammunition for a Marine Amphibious Brigade.

Funds are also provided for the procurement of unit equipment and supplies, and for operations and maintenance expenses, to support the three Marine brigades that will be prepositioned aboard maritime prepositioning ships in the Indian Ocean.

(4) Maritime Prepositioning

Two maritime prepositioning programs have been established to store equipment and supplies aboard ships in the Indian Ocean. Under the Near-Term Prepositioning Ship (NTPS) and Enhanced NTPS (ENTPS) programs, unit equipment and supplies for a brigade-sized Marine Air Ground Task Force (MAGTF) have been prepositioned aboard dry cargo and tanker ships chartered and controlled by the Military Sealift Command. The ships also contain significant amounts of supplies, ammunition, POL, and water for early arriving Army and Air Force RDJTF units. Fundir is also provided for additional depot ships for st

Army ammunition. These programs reduce response time to the region and provide a test-bed for future development of larger long-term maritime prepositioning efforts. The Maritime Prepositioning Ship (MPS) program augments, and will ultimately replace, the NTPS/ENTPS program. It will preposition selected unit equipment and supplies for three brigade-sized MAGTFs.

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
Army Land-Based Prepositioning				
$ Millions	146.3	179.9	491.0	488.0
Air Force Pre-positioning				
$ Millions	--	--	195.0	174.0
USMC Land-Based Prepositioning				
$ Millions	5.0	27.8	35.7	11.3
Near-Term Pre-positioning Ships (NTPS/ENTPS) and Depot Ships 1/				
$ Millions	131.0	150.0	230.0	253.0
Maritime Pre-positioning Ships (MPS) 1/				
$ Millions	19.0	139.0	329.0	494.4

1/ Includes USMC equipment acquisition and operations and maintenance costs.

e. Sealift Programs

Sealift is vital for projecting and sustaining our forces. In a large deployment, it would deliver armored and mechanized forces as well as support forces, resupply, and ammunition. Our FY 1983-87 program funds initiatives that will increase the capability and reduce the response time of our sealift forces.

(1) Fast Sealift

The requirement to move forces rapidly and maintain flexibility has caused us to look for ways to decrease the response time of sealift. Meeting this objective requires ships that can travel at high speeds and be rapidly loaded and unloaded. The acquisition and conversion of high-speed (33 knots) SL-7 container ships will allow us to deploy Army units more rapidly. Funds were provided in FY 1982 to complete acquisition of eight of these ships and to convert four of them for military use. We are requesting funds in FY 1983 to convert the remaining four.

The Navy has also programmed funds to expand the size of the Ready Reserve Force (RRF). The RRF, which is part of the National Defense Reserve Fleet, contains 27 dry cargo ships that have been upgraded to make them available for loading within 5 to 10 days after notification. We plan to increase the size of the fleet to more than 40 ships (including some tankers) by FY 1986. This program contributes to the early availability of shipping and reduces the time required to begin sealift operations.

(2) Sealift Discharge

The shift to containerization by the maritime industry has significantly increased productivity but, at the same time, has increased dependence on modernized port facilities. Deployments to Southwest Asia may require the discharge of cargo and POL in non-modernized or damaged ports or in areas that lack port facilities. To provide offload capabilities in these areas, the Army and Navy have initiated programs to offload container ships and discharge cargo and POL over the beach. These programs will enhance the flexibility of our sealift resources and increase the military utility of modern container ships.

The Navy is undertaking several programs to improve the capability of container ships and to provide mobile port facilities. It is developing a Temporary Container Discharge Facility (TCDF) that would be used to offload non-self-sustaining container ships. It is also procuring mobile piers, called Elevated Causeways, that can be installed within 72 hours. In addition to these programs, funding has been provided to replace obsolete water craft in the Army's inventory and to procure facilities to offload tanker ships and store POL and water ashore.

	FY 1981 Actual Funding	FY 1982 Planned Funding	FY 1983 Prop'd Funding	FY 1984 Prop'd for Authorization
SL-7				
Procurement:				
Quantity	6	2	--	--
$ Millions	210.0	68.4	--	--
Conversion:				
$ Millions	--	341.6	325.6	21.4
Sealift Discharge				
$ Millions	--	--	64.0	187.0

H. RAPID DEPLOYMENT FORCES FOR SOUTHWEST ASIA

1. Introduction

Our FY 1983-87 programs place increased emphasis on our ability to project forces into Southwest Asia (SWA). It is our policy to support the independence of the countries in this politically unstable region, and to prevent a further spread of Soviet domination. One-third of the free world's supply of oil is produced in Southwest Asia, making it extremely important to the interests of the United States and its allies.

The continuing Soviet occupation of Afghanistan, the Iran-Iraq War, Arab-Israeli disputes in southern Lebanon, the conflict between North and South Yemen, and the Iranian attacks on Kuwaiti oil facilities exemplify the range of regional instabilities that complicate our policy and strategy. Furthermore, political conditions and agreements with our friends and allies near the region, in Europe, and elsewhere influence the availability of critical resources and transit facilities necessary to support our rapid deployment strategy. To meet the challenges of this dynamic environment, we must develop robust and flexible programs to support U.S. policy objectives.

a. Regional Geography

Chart III.H.1 depicts the SWA region. Although SWA is the focus of our rapid deployment planning, we presently maintain only a minimal sea-based presence in the area. Therefore, many of our programs necessarily include countries en route to and near that distant region.

b. Potential Regional Conflicts

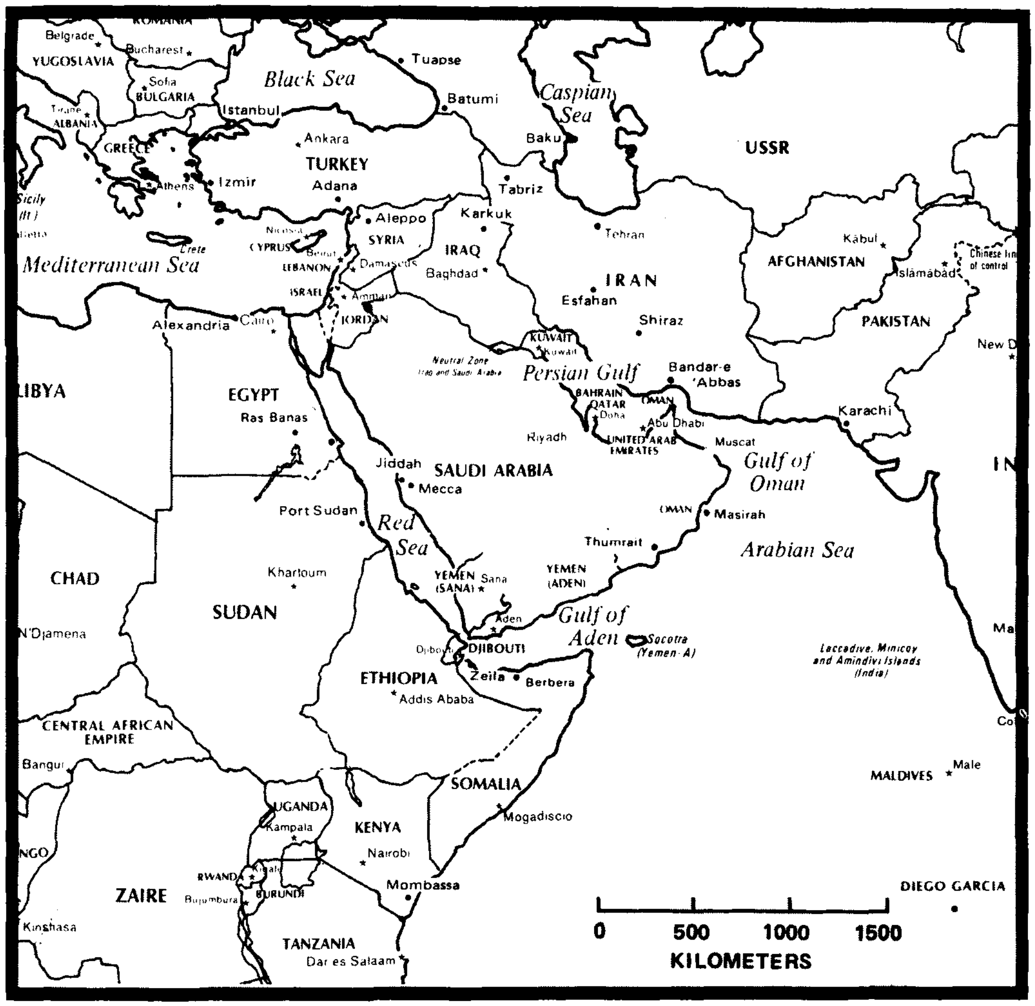
Our defense programs for Southwest Asia must offer capabilities across a spectrum of potential conflicts, including intraregional clashes and invasion by the Soviet Union.

Regional internal instabilities and intraregional conflicts provide frequent opportunities for Soviet intervention through proxy states or Soviet-backed sympathizers. In most cases, U.S. support would include economic, technical, political, and security assistance programs. U.S. military participation would necessarily be affected by the political sensitivities involved and could range from the provision of training, materiel, and security assistance to the employment of third-party assistance or the tailored use of military force.

An overt Soviet invasion would, of course, represent a far more demanding requirement for military force. We must be prepared to respond rapidly, and with sufficient strength, if we are to deter Soviet aggression and prevent the uncontrolled spread of hostilities.

Chart III.H.1

SOUTHWEST ASIA



c. Rapid Deployment Joint Task Force (RDJTF)

On October 1, 1981, we chartered the RDJTF to be a separate joint task force reporting directly to the National Command Authority (NCA) through the Joint Chiefs of Staff (JCS). Furthermore, the Commander, RDJTF is now assigned operational planning responsibility for SWA only. This narrowed scope reflects our recognition of the need for a full-time major commander to develop detailed plans for the wide range of possible contingencies in the region. The current structure allows the Commander, RDJTF to plan his operations more effectively, exercise his forces, and maximize their combat readiness.

Although no new combat forces were created for the RDJTF, its commander has been given operational control over several Army units and Air Force tactical fighter squadrons. In addition, he has access to a reservoir of forces from which he could draw additional units in time of crisis, depending upon the size and nature of the contingency. While, in principle, most of our general purpose forces are in some sense available for RDJTF missions, the actual composition of the reservoir will change over time, as our ability to deploy forces rapidly and support them adequately in the region improves. Table III.H.1 depicts, in generic terms, the major types of combat forces available to the RDJTF.

TABLE III.H.1

Army
1 Airborne Division
1 Airmobile/Air Assault Division
1 Cavalry Brigade Air Combat (CBAC)
1 Mechanized Infantry Division
Rangers and Unconventional Warfare Units

Marines
1-2 Marine Amphibious Forces (MAF)1/

Air Force
4-11 Air Force Tactical Fighter Wings (with support air forces)
2 Squadrons of Strategic Bombers (the Strategic Projection Force)

Navy
3 Carrier Battle Groups (CVBGs)
1 Surface Action Group
5 Air-ASW Patrol Squadrons (VP)

Headquarters
1 Army Corps Headquarters
1 Naval Forces Headquarters
1 Air Force Forces Headquarters

1/ A MAF typically consists of a reinforced Marine division and a Marine aircraft wing (roughly twice the size of an Air Force tactical fighter wing).

d. Southwest Asia Issues

The primary mission of the RDJTF is to deter Soviet aggression and to protect U.S. interests in SWA. For deterrence to be credible, we must be prepared to fight, thereby raising the cost of Soviet aggression to an unacceptable level. To do this, we are examining ways to increase our SWA combat and mobility capabilities by the end of FY 1987. This will require a commensurate increase in funding for readiness and sustainability, as well as improved planning, advantageous use of strategic warning, and prepositioning of supplies and equipment in the region.

Building capabilities for a SWA conflict is still a relatively new undertaking for the United States. It differs significantly from the more familiar planning and programming for a NATO/Warsaw Pact contingency. Our SWA rapid deployment strategy must consider the following unique requirements:

-- sustaining a continuous combat presence in a distant region halfway around the world;

-- training our combat units for operations in unfamiliar and widely varying climates and terrain;

-- tailoring support for unique and austere combat operations in a region lacking support facilities (e.g., water, medical, communications, and transportation) and a highly developed infrastructure to provide them;

-- developing mobility assets to deploy the RDJTF rapidly to and within SWA over extended air and sea lines of communication (ALOCs/SLOCs) and to sustain its operations in combat;

-- obtaining from several other countries overflight rights and en route access; and

-- securing lengthy SLOCs/ALOCs during the conflict to sustain combat operations.

Our FY 1983-87 program is designed to meet each of these requirements. Our principal program goals can be summarized quite simply:

-- to improve our mobility forces and preposition adequate equipment and supplies to deploy and support an RDJTF of sufficient size to deter Soviet aggression; and

-- to provide long-term support and resupply to sustain these forces.

2. FY 1983-87 Programs

Planning and programming for the RDJTF have improved significantly over the last two years, as has our ability to project forces into SWA. Our FY 1983-87 program steps up this trend, enhancing the capability of the RDJTF and reinforcing the credibility of our intentions.

a. Unified Command for SWA

By January 1, 1983, the Commander, RDJTF will become Commander-in-Chief (CINC) of a Unified Command for SWA. Our decision to create a new command structure reflects the importance we have placed upon SWA and our ability to deter or oppose Soviet aggression in the region.

b. Combat Forces

The RDJTF will grow steadily over the next five years, adding Army, Air Force, and Marine Corps units to the reservoir of RDJTF planning forces. No new combat forces will be created specifically for the RDJTF, but RDJTF forces will need additional support and special training for their SWA mission.

c. Prepositioning

To enhance our ability to project forces into SWA, the Marine Corps plans to preposition equipment for Marine combat units aboard chartered Maritime Prepositioning Ships (MPS) beginning in FY 1984. This will augment, and eventually replace, materiel already prepositioned aboard the NTPS/ENTPS. 1/ When completed, the program will contain most of the equipment and supplies for three brigade-sized Marine Air-Ground Task Forces. In time of crisis, the troops and their remaining equipment would be airlifted into SWA marry-up sites to meet the MPS.

We are requesting funds in FY 1983 to preposition additional ammunition and supplies aboard other ships in or near the region. This is in addition to the MPS program and would enable the RDJTF to continue high-intensity combat operations until resupply pipelines are established.

Finally, the Air Force has initiated a program to acquire equipment that it plans to preposition in the region.

1/ The Near Term Propositioning Ships (NTPS) and Enhanced NTPS (ENTPS) programs consist of 13 ships which, like the MPS program, preposition equipment and supplies primarily for Marine Corps combat units.

d. Strategic Mobility

Strategic mobility is critical to our RDJTF planning. Over the course of a conflict, sealift would be the primary provider of strategic lift in terms of tonnages delivered. However, during the critical early period of conflict, before sea lines of communication are established, airlifts and prepositioning would be our primary means of rapidly deploying and sustaining combat forces. At present, our ability to project the RDJTF rapidly into SWA is constrained by inadequate airlift and sealift resources.

To meet our early force projection and resupply needs, we have placed high priority on improving our airlift capability. We are pursuing three courses of action: (1) procurement of additional C-5 cargo aircraft and KC-10 cargo/tanker aircraft early in the program; (2) continued improvement of current airlift aircraft (e.g., C-141 stretch/aerial refueling modification, C-5 wing modification, and procurement of additional spare parts); and (3) acquisition of additional capacity through a restructured Civil Reserve Air Fleet (CRAF) Enhancement program.

To improve our sealift capability, we have placed a high priority on converting the eight SL-7 fast sealift ships procured in FY 1981-82 to a roll-on/roll-off (RO/RO) configuration. These high-speed (33-knot peak) ships could be used to transport heavy forces to any theater, but we would expect them to be extremely useful should we have to transport equipment to SWA.

Due to the limited availability of ports and airfields in the region, the adverse geographic and climatic conditions, and the extremely limited surface transportation network, intratheater transportation will be critical to our success in SWA. Without adequate intratheater airlift, sealift, and ground transportation networks, we could be forced to concentrate in less defensible locations near major airfields and seaports, rather than in key defensive positions of our choosing. We must also develop an efficient and effective capability to interface our strategic and tactical lift systems. We have selected deployment units and mobility improvement programs with these considerations in mind.

Since our sealift and airlift forces enhance our mobility capabilities in general, rather than for one specific theater, they are discussed in detail in Part III.G.

e. C^3I Support

Effective command, control, and communications (C^3) systems are critical to each stage of the RDJTF's mission: predeployment, deployment, employment, and postdeployment. Furthermore, our ability to gather intelligence will remain essential for strategic warning.

Early in the period, we plan to procure advanced communications equipment to ensure that the RDJTF

Headquarters has the means to control its subordinate components. We expect to increase manning levels for the communications element supporting the RDJTF Headquarters and have funded critical enhancements to the Services' C^3I capabilities. These include a communications package for Air Force base operations, high frequency radios and tactical facsimile equipment for the Army, and shipboard communications upgrades for the Navy. Furthermore, the program continues procurement of tactical communications equipment. These and other ongoing programs in positioning and navigation, airborne warning and control, and tactical data distribution will significantly improve RDJTF C^3I capabilities.

Intelligence support for the RDJTF is a formidable problem given the extreme distances and likely dispersion of forces in SWA. Initiatives are being taken to provide funding for the near-term purchase of responsive, lightweight, and maintainable reconnaissance and communications equipment for RDJTF-designated units.

f. Facilities Access

We must rely heavily on airlift and sealift to deploy and sustain RDJTF forces in SWA. This creates a particular challenge to protect them en route, primarily against Soviet submarine, fighter, and long-range bomber/cruise missile threats. Our maritime forces are already spread thin and, for the most part, may be the only presence we have in the region during peacetime and at the outbreak of hostilities. To alleviate some of our current shortfalls, we are expanding our initiatives for joint-service actions in SWA (for example, examining the use of land-based tactical aircraft for regional air defense over the ocean areas and the Persian Gulf). We are also continuing to seek access to facilities along the ALOCs and SLOCs, to and within SWA, from which to support our forces more adequately.

En route access provides facilities and support for airlift and sealift, as well as locations for conducting air-based antisubmarine and maritime patrol aircraft operations. Furthermore, en route access includes overflight rights necessary to shorten flight times to the region.

Intratheater facilities access, such as airfields and debarkation ports, provides for the reception of incoming RDJTF units, allows early link-up with heavy equipment arriving by sealift, and provides sites to stockpile supplies for the sustainment of combat operations.

We have reached agreement with several nations, and are pursuing negotiations with others, for access to regional facilities during crises or for routine training exercises during peacetime. In some cases, it has been necessary to improve the existing facilities and infrastructure. Construction at these sites was initially funded in FY 1981-82; we plan to complete all currently programmed projects by the middle of the program period.

Our SWA-related military construction program for FY 1983-87 totals nearly $1.4 billion, a 30 percent increase over last year's funding levels.

It is important to note that we are not creating any new U.S. bases, per se, in SWA. Rather, we are improving existing facilities that we might use in crises or for peacetime exercises and are arranging for prompt access when needed.

Egypt has offered to allow U.S. forces access to its facilities at Ras Banas on the Red Sea, where we plan to upgrade the airfield and port facilities and contruct a cantonment. Apart from routine exercises with Egyptian forces, however, we will maintain no peacetime military presence in Egypt.

By agreement with the United Kingdom, we are upgrading facilities at Diego Garcia to increase the airfield capacity and to improve its port facilities.

We are also seeking agreement with Portugal to improve the capability and fuel storage capacity of Lajes Air Base in the Azores.

We have reached agreement with Oman permitting the improvement of selected facilities for our use, primarily during crises, but also in peacetime. These improvements include upgrading runways, taxiways, and aprons and constructing support facilities for personnel and maintenance. Because of Oman's critical strategic location, these facilities could be very important for sea control and support of naval forces.

The Government of Kenya has agreed to allow U.S. forces access to airfield and port facilities at Mombasa where our plans include upgrading the airfield and dredging the harbor. Mombasa is useful for maintenance and refueling of our ships as well as for crew rest and liberty.

We have concluded an agreement with Somalia that gives us access to Mogadiscio and Berbera, seaports and airfields near the strategically important outlet of the Red Sea at the Bab Al Mandeb. The agreement provides facilities for routine fleet support and maritime surveillance operations.

g. Readiness, Equipment, and Training

To increase the operational readiness of the RDJTF, we will continue to maintain a naval peacetime presence in the region, procure additional equipment for our forces, and conduct a wide range of joint-service exercises both in the region and in CONUS.

U.S. naval and marine forces--including carrier battle groups and marine amphibious units--are routinely on station in the Indian Ocean. We expect to maintain this presence, at least for the foreseeable future, until we can gain access to regional facilities that will help support our peacetime presence and permit the surge of RDJTF forces if necessary.

The RDJTF may have to operate in both mountain and desert terrain in SWA--two demanding yet different environments. Force requirements vary accordingly from mobile light infantry to mechanized units. Both the Army and Marine Corps are evaluating their lightweight equipment needs and are streamlining their force structure to increase the strategic mobility of our ground forces while maintaining their combat power.

The RDJTF's ability to conduct effective combat operations in SWA is enhanced through combat exercises in and out of theater, as well as through communications and logistics exercises and wargaming. We have planned for a wide range of RDJTF-oriented exercises--such as BRIGHT STAR, GALLANT KNIGHT, and GALLANT EAGLE--to be conducted both in and out of SWA. In the BRIGHT STAR 82 exercise (November and December 1981), our joint forces conducted varied operations in Egypt, Oman, Somalia, and Sudan. Expanding upon the previous year's brigade-sized exercise, BRIGHT STAR 82 included participation by Army units, a Marine amphibious unit, and supporting Air Force elements. These exercises successfully demonstrated our substantial capabilities, while identifying several shortcomings for future correction. In addition to these exercises, the Services are independently emphasizing RDJTF-related training. Table III.H.2 summarizes recent and projected RDJTF-related exercises.

TABLE III.H.2

Selected RDJTF-Related Exercises

Exercise	Frequency	Location	Description
GALLANT KNIGHT	Annual	Ft. Bragg, NC	CPX; RDJTF Specific
BRIGHT STAR	Annual	SWA Region	Joint Service; CPX/FTX; RDJTF Specific
GALLANT EAGLE	Annual	CONUS	FTX/CPX; RDJTF Specific
BOLD EAGLE	Biennial	Eglin AFB, FL	Joint Service; CPX/FTX
BOLD STAR	Biennial	Ft. Hood, TX	Joint Service; CPX/FTX
Rapid Deployment Readiness Exercises	3/Year	Varies (CONUS)	Alert Exercise Deploys HQ RDJTF

h. Support

The possibility of conflict in SWA dictates that we move rapidly to fill critical shortages in our support forces. Particularly important is meeting requirements for special equpment and for transporting supplies over lengthy land LOCs. Because RDJTF support requirements are so important and demanding, we are examining a wide range of near- and mid-term options to improve our capabilities, including asking our allies to assume a greater share of the support burden in NATO, upgrading our reserve units to permit their rapid deployment, and expanding regional prepositioning. Also, the Navy is evaluating proposals to satisfy hospital ship requirements for the RDJTF.

3. Summary

Our FY 1983-87 defense program clearly recognizes the importance and urgency of RDJTF programs to support our SWA strategy. Events of the past few years have underscored the need for the United States to play a major role in protecting our interests, as well as those of our allies and other friendly nations, throughout the region. Our program provides real capabilities to protect those vital interests--with force if necessary. By the end of the five-year period, we expect to have an independent unified U.S. command for SWA and a combat-ready force capable of rapidly deploying and sustaining several ground divisions with appropriate naval and air support.

We are continuing to evaluate and strengthen all aspects of our RDJTF program. In many cases, we have had to make some very difficult decisions, especially about command organization, force structure and size, and mobility. We will continue to exercise the RDJTF in the region to show our commitment and capability, while accumulating valuable experience for our forces. We will continue to work closely with the State Department to build closer and more cooperative relationships with SWA regional states and to integrate our programs as smoothly as possible with whatever host nation support may be available. We are confident that our defense program for SWA is well designed, and will give it the highest priority necessary to ensure its implementation.

I. NATO PROGRAMS

1. 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. The Reagan Administration has moved quickly to accelerate U.S. defense programs with the goal of slowing and ultimately reversing the adverse trends. We also have been working with our allies to help improve the Alliance's defensive capabilities across the board and to accelerate key programs.

The Administration has continued to urge the Allies to implement more fully the NATO force goals and to resolve key deficiencies in the overall defense posture of the alliance. Central to this effort is the Long-Term Defense Program (LTDP), an initiative for improving NATO defenses. We consider the LTDP an important element of NATO's efforts to improve and modernize its forces, and we will continue to press for its forward movement. As a basis for these necessary improvements, the Allies have reconfirmed their goal of a three percent annual real increase in defense spending and have agreed to give emphasis to more precise measures of performance.

But the threat to NATO is not manifest only within the traditional treaty area. Soviet pressures and activities in the Third World increasingly have come to threaten NATO's vital interests, particularly in Southwest Asia--the source of much of the West's oil. While the United States has a global military capability which is unique within NATO, other member nations also deploy rapid-reaction forces of very high quality. We encourage and welcome efforts by other allies to complement U.S. military, economic, and political activities and to facilitate our common defense efforts by providing en route facilities, overflight privileges or logistics support. We are also pursuing allied agreement on appropriate measures to compensate for the possible diversion of forces from European defense to the Rapid Deployment Joint Task Force (RDJTF), and to provide service support for U.S. forces deployed in Europe. The latter is particularly vital to our effort to strengthen the RDJTF without reducing deployed U.S. units in Europe <u>or</u> our capability to reinforce U.S. and allied forces.

2. Program Description

a. NATO Long-Term Defense Program (LTDP)

The Long-Term Defense Program--adopted by NATO in 1978 to correct certain major deficiencies in its defense posture--adds a needed dimension to NATO force planning. It provides a detailed program of improvements in ten high-priority functional areas and it is designed to project NATO defense planning into a long-term framework as well as to increase the cost-effectiveness of alliance programs through greater coordination and cooperation among national programs.

The 10 priority program areas of the LTDP would:

-- Enhance readiness through increased force responsiveness, modernized armor and anti-armor capabilities, better defense against chemical warfare, and cooperative development of common families of anti-armor and air-delivered weapons;

-- Improve rapid reinforcement by accelerated movement of significant combat power to the forward areas in the early phase of a crisis, by improved passenger and cargo airlift and sealift, and by better arrangements for the reception and forward movement of reinforcements;

-- Strengthen the reserve forces and mobilization programs. Certain European allies are being asked to create additional reserve combat brigades; others are required to bring their reserve forces up to NATO standards in personnel and training, and all need to upgrade the availability and responsiveness of their reserve forces;

-- Improve maritime posture by strengthening C^3, air defense, anti-submarine warfare (ASW), mine warfare, and surface warfare through the introduction of improved sensors and weapons systems;

-- Improve the integrated air defense of NATO by augmenting identification capabilities, the information distribution system, air command and control, interceptor capability, and surface-to-air missile (SAM) defenses;

-- Provide integrated or at least interoperable communications, command and control through completing the NATO Integrated Communications System (NICS), accelerating interoperability of tactical-area communications systems, improving communcations security and interconnection of national and NATO communications, sharing national and NATO satellites, and enhancing NATO command and control systems;

-- Provide improvements in NATO's Electronic Warfare (EW) capability and its capacity to counter the Warsaw Pact EW threat, particularly in the areas of land force EW units; EW protection for Army and Marine units and tactical aircraft and combat vehicles and troops; threat alert receivers, chaff, decoys, jammers, and expendable drones; and information and alert distribution systems;

-- Rationalize procedures for armaments cooperation through such systems as the NATO Armaments Planning Review (NAPR) and the NATO Periodic Armaments Planning System (PAPS);

-- Improve logistics coordination and readiness through such techniques as harmonizing of logistics arrangements, enhancing logistics coordinating capabilities and staff support in military and civil staffs, building war reserve stocks of fuel and ammunition, improving storage facilities, and increasing host nation support; and

-- Improve the tactical nuclear force primarily through modernizing long-range tactical nuclear forces.

b. Host Nation Support (HNS)

United States forces allocated to Europe lack some of the logistics support structure they would need to conduct sustained wartime operations. Moreover, NATO rapid reinforcement initiatives should, by the mid-to-late 1980s, almost double the number of U.S. Army divisions that could be present in the theater on D-Day. A major concurrent deployment of U.S. combat forces to Southwest Asia must now be a planning assumption; and logistic demands would be greater in that theater with reasonably assured levels of local support far less than in NATO. As a result there would be even fewer U.S. support forces available for Europe. If we are to maintain a viable conventional defense capability in Europe and SWA, we must therefore, obtain bilateral agreements for host nation wartime support of U.S. forces.

The United States has reached agreement with several allied countries on various types of HNS they will provide, and we are discussing our needs with other countries, as well. Negotiations have been progressing well and a number of additional arrangements are expected to be completed in 1982.

c. European Military Construction for the United States and the NATO Infrastructure Program

The NATO infrastructure program is intended to fund facilities for NATO joint or common use. However, projects for use by a single nation's forces are eligible when those forces are committed in support of NATO missions. For example, infrastructure funds can be used for U.S. airfields in Europe, where one or more squadrons of NATO support aircraft are stationed or have firm dates for deployment. Another example is the most recently approved Reinforcement Support Category (RSC) of Infrastructure, under which facilities are NATO funded for the prepositioned storage of equipment and materiel for external reinforcement forces. Included are storage of such items for their sustainability in combat.

There is a considerable backlog of unfunded military facilities required for U.S. forces in Europe calling for both U.S. national funding (e.g., barracks) and NATO infrastructure common funding for operational facilities in support of NATO missions. Both these backlogs have adverse implications for the readiness of U.S. forces.

The 14 existing categories approved for infrastructure funding include facilities for the operational requirements of airfields, naval bases, POL fuel pipelines and storage, automated C^3, the NATO Integrated Communications Systems (NICS), air defense systems, war headquarters, missile launch sites, secure nuclear warhead storage, forward tactical storage sites, navigation aids, warning installations, certain multi-national training facilities and the RCS category covering reinforcing forces.

Thirteen NATO nations currently contribute to cost-sharing NATO infrastructure projects, 14 when France participates. National commitments, based on long established cost-shares, are made in the progressive steps of a five-year fund ceiling; annual project priority lists, called slices, and in authorization of NATO funds to permit the individual nations acting for NATO to proceed with construction effort.

A key factor in all NATO infrastructure decisions is the involvement of direct or eventual financial commitments. All decisions on infrastructure, in the various NATO committees at all levels, must be unanimous. Therefore, each country has an equal voice in agreeing to an infrastructure program or to funding on a given project, with full awareness that others have the same prerogative about their own projects. The give-and-take factors normally result in timely resolution of most problems.

In recent years, NATO infrastructure planning and military prioritizations for programming have been closely tied to new and updated demands of the LTDP. One significant result is the establishment of the new RSC.

We have also taken steps to integrate planning and budgeting for infrastructure and related U.S. national construction programs. Our efforts have focused upon:

-- sorting U.S. and NATO priorities;

-- determining and justifying funding sources;

-- phasing coordination between infrastructure and U.S. funding for facilities not eligible for NATO;

-- giving advance notice of U.S. priorities to host countries having mixed U.S. and NATO infrastructure funded requirements; and

-- recouping U.S. funds from projects previously prefinanced by the United States.

Although the rate of NATO infrastructure programming has increased sharply in recent years and is now established at 85 percent above previous years, this still is not adequate. Considering there are unfulfilled priority needs far beyond the agreed level, the United States is actively supporting a Supreme Allied Commander, Europe (SACEUR) and Supreme Allied Commander, Atlantic (SACLANT) request for a substantial increase as soon as possible.

Ironically, the recently achieved NATO success in accelerating implementation and completion of previously approved projects has produced shortfalls for most NATO nations in budget estimates applied to payments on past commitments. This has posed additional problems for some countries which will require special action for necessary adjustments. However, we hope these problems will be surmounted in the forthcoming review of the infrastructure ceiling.

d. NATO Arms Cooperation

For a number of years there has been a growing recognition of the opportunities presented by closer arms cooperation among NATO Allies. The opportunities lie in two areas--improved combat effectiveness and a more beneficial use of scarce defense resources. Improvements to combat effectiveness result from the ability of mutually supporting allied forces to have supplies and equipment that are interoperable or standardized, e.g. aircraft refueling and rearming at other than their home bases, and tanks drawing ammunition from adjacent units across a national corps boundary during a combat engagement.

Resource savings assume special importance when viewed in the context of a Soviet research and development effort roughly twice that of the United States. That gap can be reduced by the contributions of our NATO partners, but only if the degree of duplication is reduced and the aggregate effort is channelled in a rational manner.

The Reagan Administration subscribes to the need for greater arms cooperation and has endorsed the approaches developed in recent years toward that objective--e.g., general memoranda of understanding, the families-of-weapons approach and dual production.

(1) General Memoranda of Understanding

The United States has signed a series of reciprocal procurement agreements with 10 NATO Allies along the lines of arrangements already in effect with Canada. These MOU aim to remove artificial barriers to trade in defense equipment and are based on the principles of competition and reciprocity. Early indications are that these agreements have succeeded in fostering trade between the United States and its industrialized NATO partners.

(2) Families of Weapons

This concept offers an excellent opportunity to avoid duplicative costs through a mechanism of allocating development responsibilities for specific items of a group, or "family," of related weapon systems among interested allies. In this manner agreement has been reached that, for the family of air-to-air missiles, the United States would pursue the development of a medium-range weapon while the United Kingdom and Germany would collaborate on the short-range version. While not all systems lend themselves to this approach, a number do and discussions are being conducted with regard to antitank guided weapons, air-to-ground munitions, naval mines and mine countermeasures equipment.

(3) Dual Production

For systems well along in national development or production, dual production agreements provide an opportunity for nations to acquire systems for their own forces and to involve their defense industries in the production process. Arrangements of this kind are becoming more common as governments seek to offset the adverse effects on national industrial bases of adopting systems developed off shore. Besides national political and economic considerations, dual production offers alliance-wide benefits of interoperability and second sources of defense equipment, which could prove critical in times of hostilities.

Among systems currently in dual production are:

(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 Configuration Control Board.

(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) Forward-Looking Infrared Seeker for Missiles (MOD FLIR)

Germany and the United States 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.

(d) 120mm Tank Gun

In 1978, the United States selected the German 120mm smooth-bore tank gun for future incorporation into the M-1 tank. The gun is being produced in the United States under German license. Initial delivery of the M-1 equipped with the 120mm gun is currently scheduled for 1985.

(e) Armor Machine Gun

The U.S. Army adopted the Belgian MAG-58 to replace the M219 machine gun on the M48 and M60 series tanks. Designated the M240, it also will be incorporated on the M-1 tank and on the Infantry Fighting Vehicle. A U.S. production facility has been constructed and initial delivery will commence in mid-1982.

(f) Squad Automatic Weapon (SAW)

Following competitive evaluation of several candidates, the U.S. Army and Marine Corps selected the Belgian FN MINIMI (XM 249) to proceed to the maturation phase in its squad automatic weapon program.

(g) AV-8B

The United States has developed this improved version of the British HARRIER Vertical and Short Take-off and Landing (V/STOL) aircraft. Under an agreement signed in July 1981 the United Kingdom will co-produce 60-100 aircraft for the Royal Air Force and provide engines and other components for those procured by the U.S. Marine Corps.

Some prospective candidates for future dual production are:

(h) NATO SEASPARROW Surface Missile System (NSSMS)

The development of NSSMS began in 1968 as an international cooperative venture involving five NATO nations along with the United States. The system includes a fire control system, a launcher, and a variation of the SPARROW missile which provides point defense for numerous U.S. Navy and Allied ships.

(i) The Rolling Airframe Missile (RAM)

This system is designed to augment other ship point defense systems with increased firepower. Germany, Denmark, and the United States are in joint full-scale development of the RAM program based on a 1979 MOU.

(j) 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.

(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.

(4) Other Cooperative Programs

(a) NATO Airborne Early Warning and Control (AEW&C) Program

This program is the most significant cooperative acquisition effort NATO has achieved to date. The NATO AEW&C Program includes acquisition of 18 E-3A AWACS aircraft; the United Kingdom's contribution of 11 NIMROD aircraft; modifications to make a number of European ground radar sites compatible with the AEW&C aircraft; and construction at 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 the first operational aircraft was delivered to NATO in January 1982. Nations are working on a MOU for follow-on operations and support, and preparations of the main NATO E-3A base at Geilenkirchen, Germany are well underway. In anticipation of delivery of the first operational aircraft to NATO in early 1982, crews from many Alliance nations have been 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 a much better position to deny a surprise air attack capability to Warsaw Pact forces.

(b) <u>Multiple Launch Rocket System (MLRS)</u>

This NATO Cooperative Project includes a U.S. developed basic system, British and French financial contributions, and a German developed scatterable mine warhead. A supplemental MOU establishing a joint development program for a terminally guided, anti-armor warhead was signed in September, 1981. The four participating nations are negotiating a production supplement to the basic MOU.

(c) <u>Multi-functional Information Distribution System (MIDS)</u>

MIDS is currently a conceptual program to perform communications/navigation/identification (CNI) functions via JTIDS technology. It will include both NATO-wide and national MIDS applications.

(d) <u>NATO Air Command and Control System (ACCS)</u>

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 following systems into one large, coherent command and control structure: NATO Air Defense Ground Environment (NADGE); NATO Airborne Early Warning (NAEW), Multi-functional Information Distribution System (MIDS); and offensive C^2 systems.

(e) <u>U.S. RAPIER</u>

In an innovative step, the United States will procure RAPIER air defense systems for the close-in protection of the air bases used by the United States in the United Kingdom, while the United Kingdom will man and operate the RAPIER systems. U.S. air bases in the United Kingdom must be protected from low-altitude attack. This arrangement will be precedent-setting for NATO in that a Host Nation will provide manning for the operation of air defense at U.S. facilities.

(f) NATO SEA GNAT

This research and development project is being conducted under a MOU among Denmark, the United Kingdom and the United States under the NATO Naval Armaments Group.

(5) NATO Armaments Planning and Cooperation

(a) Periodic Armaments Planning System (PAPS) and NATO Armaments Planning Review (NAPR)

The PAPS, adopted by NATO in October, 1981, introduced cooperative procedures into the pre-feasibility and feasibility phases of the life cycle of weapon systems. PAPS provides a means of encouraging cooperation early in system development.

The NAPR, approved by the Conference of National Armaments Directors in October 1979, is based on national armament replacement schedules and on military assessment of the required level of standardization by the major NATO Commands. Results of analyses will assist nations in identifying opportunities for cooperation.

3. Defense Burdensharing

Developing assessments of how the NATO defense burden is shared is particularly difficult. Some contributions that enhance allied security are not readily quantifiable and/or have not been widely publicized, while others are easy to quantify yet can be misleading if used in isolation. For example, the United States devotes over five and one-half percent of its gross domestic product (GDP) to defense compared to an average of about three and one-half percent for the rest of the Alliance. While this may appear inequitable, other measures of burdensharing must be considered in order to make a fair evaluation. The following are among the most salient of these considerations.

The NATO allies maintain about 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 compared with about three million for the United States. If we add civilian defense manpower to the combined active and reserve figures, the totals come to around seven and one-half million for the allies and over four million for the United States. NATO allies account for more than 60 percent of total Allied ground combat capability, some 55 percent of the tactical air force combat aircraft and about 50 percent of the total tonnage of naval surface combatants, including aircraft carriers and submarines.

Germany and the other European Allies which rely heavily on conscripts feel traditional comparisons of total defense spending understate their efforts and ignore the political cost of conscription that we in the United States have chosen not to impose on our youth.

National commitments cannot be measured in terms of defense outlays and resource commitments alone. Since Western Europe is the potential battlefield in a NATO/Warsaw Pact confrontation, our allies contribute the entirety of their civil infrastructure to the potential war effort.

Because land is comparatively plentiful in the United States, we tend not to be highly sensitive to the burden of allocating national land for military purposes. In Germany--where population density is 10 times greater than in the United States and the average per acre value of real estate used for military purposes is over 80 times as costly--land allocation is a burden of some concern. The estimated current fair market value of all German land devoted to military use is over $80 billion compared with less than $30 billion for all U.S. real estate allocated to military purposes.

Non-military economic assistance to underdeveloped countries is not included in the NATO definition of defense spending. A number of European allies consider it 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 (OECD) 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 United States ranks much lower (above only Italy) with 0.20 percent of GDP devoted to foreign economic assistance.

A variety of related factors affect national perceptions of the relative burden and these shape responses to appeals for increased defense spending. These factors include competing economic demands, varying governmental approaches to the budgetary impact of social programs, and such specifics as German expenses to assure West Berlin's security and economic viability.

An examination of long-range historical trends in a number of major burdensharing indicators e.g., total defense spending, total defense spending as a share of GDP, total military and civilian manpower, indicates that several of our NATO allies in the aggregate, steadily assumed more of the burden over the past decade. For example, U.S. real defense spending during 1971-79 declined by an average of around two percent per year, as compared to a two percent per year increase for the non-U.S. NATO allies. However, now the U.S. share of the alliance burden may be on the increase again, with U.S. real increases for

1980 and 1981 estimated on the order of five percent each year compared with non-U.S. NATO increases of somewhat less than three percent.

Despite many resource-driven problems, NATO is making progress. We have received agreement, in principle, from Germany, the United Kingdom, and the Benelux Countries for comprehensive wartime Host Nation Support, which would relieve the United States of support functions and allow us to concentrate our stationed and reinforcing troops on combat roles. Norway also has taken a significant and important step in supporting prepositioning for U.S. reinforcements in the Northern Region. We also have been successful in increasing both the size and the spending rate of the Infrastructure Program, NATO's largest common funded arrangement.

4. Conclusion

In view of the changing nature of the Soviet threat, I am convinced that all the allies, including the United States, can and should do more if the Western democracies are to survive the challenges of the 1980s. As the leader of such a collective defense effort, the United States must demonstrate clearly our own resolve and high level of commitment in order to foster the cooperative approach that will continue to be needed from our allies.

J. RESEARCH, DEVELOPMENT, AND ACQUISITION

1. Introduction

a. Overall Assessment

The goal of research, development, and acquisition (RD&A) is the deployment of affordable and reliable weapons and supporting systems in the quantity and quality needed to give our servicemen and women the means to accomplish their missions. Today's combat personnel face increasingly capable enemy forces in essentially every mission area.

In the long-term, the challenge will certainly increase. Charts III.J.1 through III.J.3 compare projected military expenditures of the Soviets and the United States in a number of mission areas. Although the comparisons of expenditures are approximate, they are indicative of trends or changes in the size of the effort over the years. While it is not our aim to engage in an investment race with the Soviets, the scale of Soviet expenditures on military equipment and technology is narrowing our flexibility. This buildup demands careful planning of the modernization of our forces in each category of military capability.

b. Research Development and Acquisition Objectives

Research, development, and acquisition planning is dedicated to the following objectives:

-- to modernize our forces with increasing emphasis on the procurement needed to correct critical imbalances,

-- to enhance system survivability and enduring C^3I and to provide necessary replacement weapons for those nearing the end of their useful life;

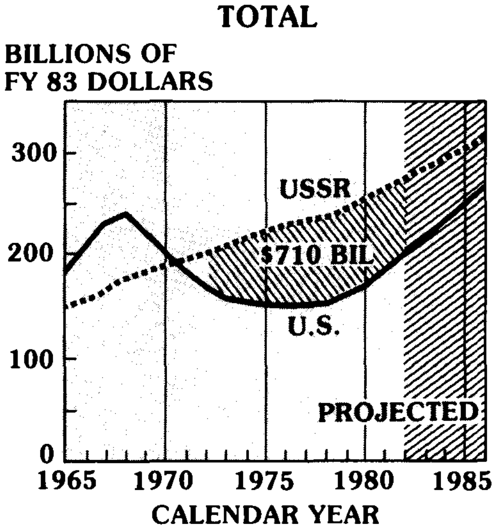
-- to increase program stability and reverse trends leading to lengthy acquisition processes, increasing real costs, and unreliable performance; and

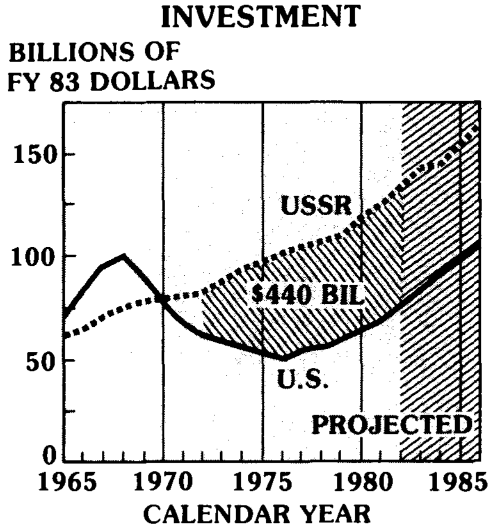
-- to strengthen our industrial base and enhance the technological base.

We have initiated several specific actions in support of these objectives. Greater accountability and decentralization of RD&A management has been established to include reorganization of the Office of the Under Secretary of Defense for Research and Engineering to focus on integrated mission area planning. Acquisition process improvements have been initiated to reduce costs, shorten acquisition time, and simplify the deliberations of the Defense

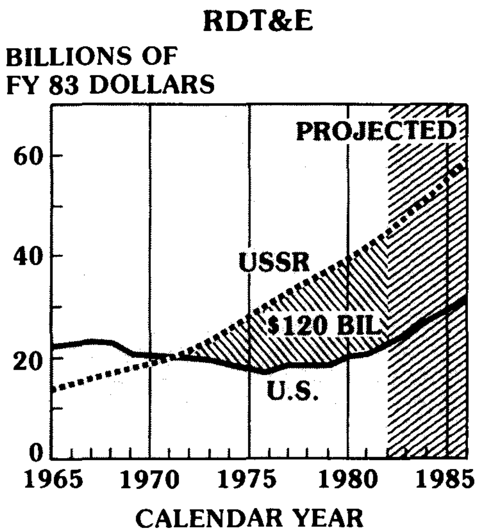
CHART III.J.1

MILITARY EXPENDITURES: A COMPARISON OF U.S. MILITARY EXPENDITURES WITH ESTIMATED DOLLAR COSTS OF SOVIET EXPENDITURES (EXCLUDING RETIREMENT PAY)





NOTES:
(1) INCLUDES RDT&E, PROCUREMENT AND MILITARY CONSTRUCTION.
(2) INCLUDES NON-DoD-FUNDED DEFENSE PROGRAMS.



NOTE: INCLUDES NON-DoD-FUNDED DEFENSE PROGRAMS.

CHART III.J.2

(U) STRATEGIC FORCES: A COMPARISON OF U.S. PROCUREMENT COST WITH ESTIMATED DOLLAR COST OF SOVIET PROCUREMENT

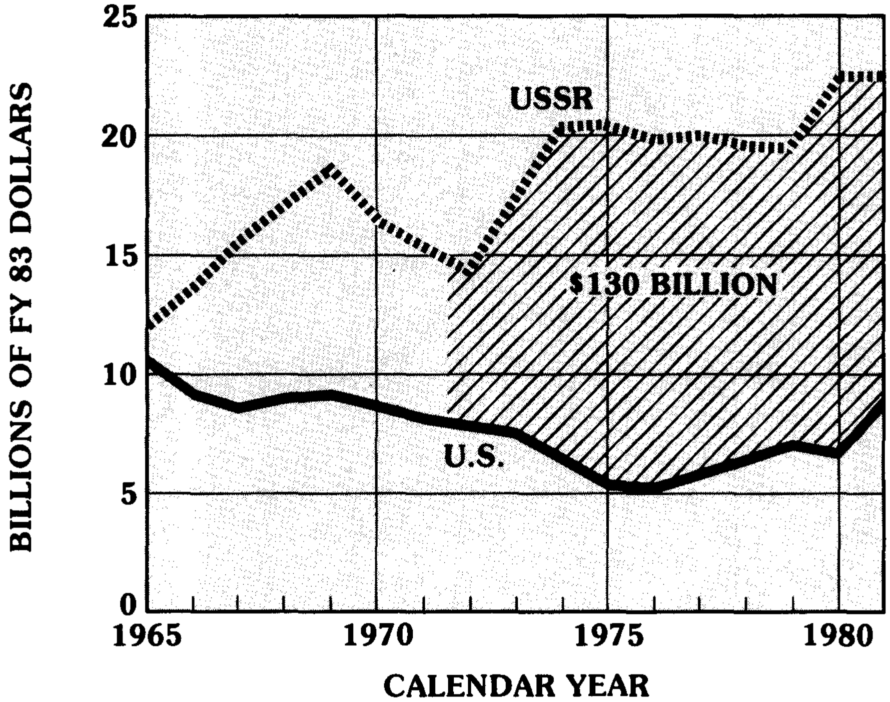
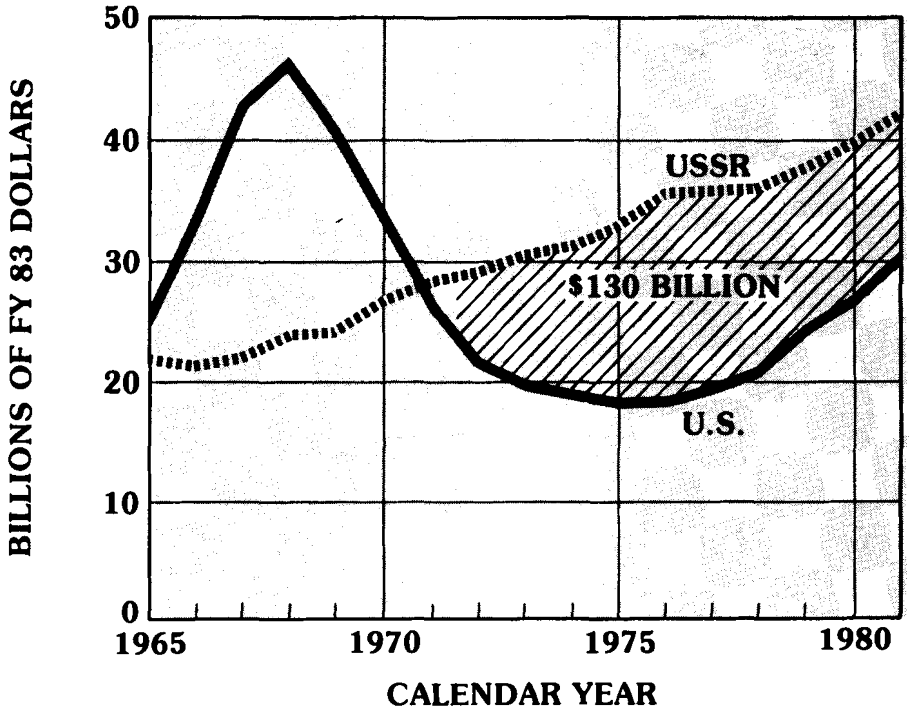


CHART III.J.3

(U) GENERAL PURPOSE FORCES: A COMPARISON OF U.S.PROCUREMENT COST WITH ESTIMATED DOLLAR COST OF SOVIET PROCUREMENT, 1970-1981.



Systems Acquisition Review Council (DSARC). Common to most of our initiatives is our effort to improve stability of our weapons systems programs and our long-range resource planning, thereby establishing a comprehensive and coherent defense acquisition strategy. The resource planning process seeks to establish attainable and realistic budget and cost goals; to gain management agreement on mission area requirements, objectives, and priorities for the near- and far-term; and to establish criteria for measuring progress toward solving problems in existing plans and programs.

The RD&A assessment, objectives, and status of our strategic, nuclear, chemical, and tactical warfare mission areas and C^3I are discussed in detail in the appropriate sections in Part III. Therefore, I will describe here only the major thrusts within these mission areas and discuss our assessment and status of programs in the cross-cutting mission areas of science and technology, space and geophysical, test and evaluation, acquisition management, international cooperation, and nuclear weapons development.

2. Major RD&A Thrusts

The FY 1983 RD&A budget and programs seek to establish a balance between necessary improvements in near-term capabilities and investments in long-term mission capabilities. The budget was painfully scrubbed to address the defense priorities established by the Reagan Administration. Chart III.J.4 illustrates the modernization and investment component of the overall TOA, allocated among mission capabilities. This allocation of our FY 1983 Budget request of $114 billion for research, development, and acquisition provides about 44 percent of the budget to modernize and strengthen our deployed forces. The highlights of our major mission areas are briefly outlined below.

a. Strategic Forces

Survivability of our Intercontinental Ballistic Missile (ICBM) force and the readiness and responsiveness of the sea- and air-based legs of the TRIAD are critical to the maintenance of an adequate deterrent posture in the near-term. The objective is to survive and, subsequently, to be effectively employed through all phases of a conflict.

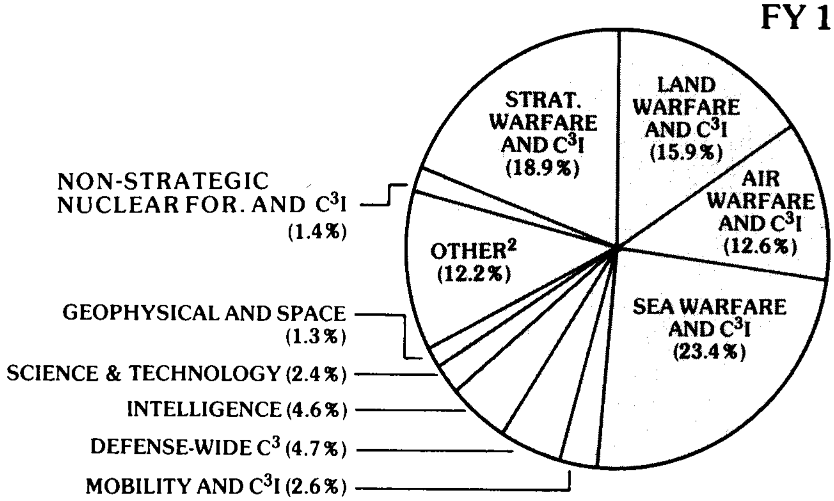
b. Non-Strategic Nuclear Forces

Our primary emphasis is on implementing NATO's long-range nuclear force program of deploying the ground-launched cruise missile (GLCM) and PERSHING II. Our objectives include survivability, operational effectiveness, and responsiveness to other U.S. systems, such as the Corps Support Weapon System (CSWS) now in concept development, to insure stability in light of the rapidly developing Soviet nuclear modernization.

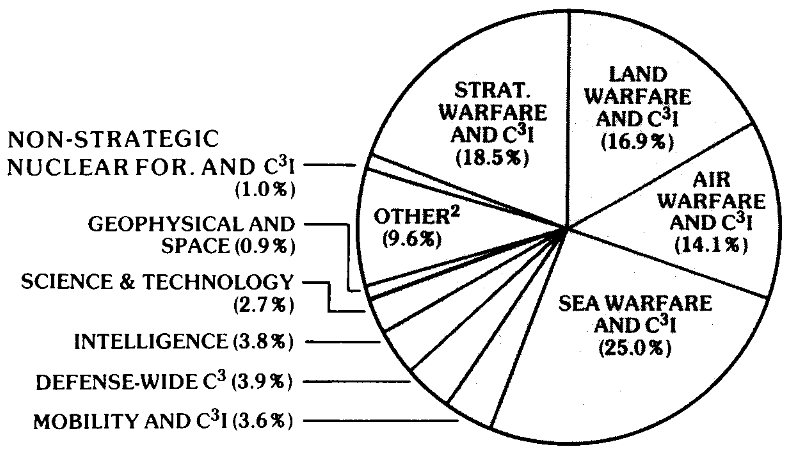
CHART III.J.4

DOD INVESTMENT[1] BY MISSION-AREA

FY 1983



FY 1983-1987



[1] INVESTMENT REPRESENTS THE SUM OF RDT&E, PROCUREMENT AND MILITARY CONSTRUCTION APPROPRIATION CATEGORIES.
[2] OTHER REPRESENTS THE SUM TOTAL OF THE FOLLOWING MISSION-AREAS: TEST AND EVALUATION; INTERNATIONAL COOPERATION; MANAGEMENT AND SUPPORT; CHEMICAL AND MISCELLANEOUS

c. Chemical Warfare Forces

The Soviets are clearly ready and able to employ chemical weapons. Deficiencies in our current offensive and defensive capabilities could encourage use of chemical weapons against us. Our objectives are to produce modern and safer chemical munitions suitable to deter first use by any nation and to improve the readiness and effectiveness of our defensive equipment.

d. Tactical Programs

RD&A priorities are focused on two primary goals: (1) to deploy adequate numbers of a mix of weapons capable of sustained operations in a highly mobile combat environment where controlled, long-range, and precise firepower must be projected and (2) to deploy forces rapidly in response to hostile military actions which jeopardize our interests, requiring emphasis on mobility forces and tactical C^3, consistent with the overall mission.

e. C^3I Programs

We have assigned equal priority, and in some cases even greater priority to development of C^3I system needs as we have to weapon systems modernization. There are major areas in which we must focus our efforts: responsiveness, mobility, and sustainability of our forces require more flexible, reliable, and endurable C^3; integration of the operations of our available forces requires standardization, interoperability, and connectivity of our C^3 assets; and improvements in Soviet electronic warfare capabilities require C^3I capabilities to be more resistant to Soviet exploitation, jamming, and electronic combat.

f. Science and Technology Programs

To achieve our objective of speeding the transition of technology to deployed systems, we are seeking to improve our methods of relating the high payoff areas in basic and applied research to mission areas and to apply the resources needed to move them through the development process. Long-range resource planning is underway to improve coordination and ensure adequate investment in cross-service technologies. This prior proper planning will reduce redundancy and enable us to exploit promising developments that are underway.

3. Cross Cutting Missions

a. The Science and Technology (S&T) Program

(1) Assessment and Objectives

Although the Soviet Union has achieved significant progress in technologies of military importance, the United States continues to maintain a lead over the Soviets in most areas of critical military technology. There is a disturbing trend in that the USSR may be either equal to or surpassing the United States in deploying military systems of a higher technological capability. We are fully committed to fielding technologically superior weapons in all areas. It is critically important that, as a nation, we conduct an aggressive S&T program to maintain or increase our technological lead over the Soviets.

Within the DoD S&T program, projects are undertaken that range from basic scientific investigations directed toward discovery of new phenomenology to large-scale demonstrations of promising technologies applicable as building blocks for new systems. R&D is performed by a combination of industry, universities, government agencies, and Government laboratories. It is through this combined and diverse effort that we protect our future technological lead.

(2) Program Status

During the late 1960s and early 1970s, research and exploratory development in the S&T program was reduced by about 50 percent. This adverse cut in the technology base was reversed in the late 70s and modest growth has since been achieved. I consider it prudent that we continue to support growth in our technology base to provide the nation a viable set of options for future weapons and support systems. My request for the technology base in FY 1983 is as follows:

TABLE III.J.1

Technology Base
(Dollars in Millions)

	FY 1982	FY 1983
Army	587	700
Navy	770	853
Air Force	621	707
Defense Agencies	930	1,077
Total	2,908	3,337

In order to provide for the stronger management of the S&T program, I have proposed a new position, the Assistant Secretary of Defense for Research and Technology, which will be one of two top positions reporting directly to the Under Secretary of Defense for Research and Engineering. The proposed new Assistant Secretary will also serve as the Director of the Defense Advanced Research Projects Agency. This organizational arrangement will provide a much improved means of coordinating the Services' and Defense Agencies' programs to ensure the transfer of newly evolved technologies into operational realities.

During the past summer, the Defense Science Board (DSB) reviewed the technology base. Specifically, it identified technologies that offer a potential for major improvement in critical military capability, reviewed the current level of technology base, and considered our investment strategy. In addition, the board examined the transition process, university-DoD relationships, and the adequacy of scientific and engineering resources. This independent review has provided us with a valuable set of evaluations and suggestions upon which to improve our technological posture.

The Defense Department will be continuing to emphasize programs in directed energy, adverse weather precision guided munitions, advanced materials, chemical warfare, and very high speed integrated circuits. In addition, we will be undertaking extensive reviews of the S&T programs to select, for special management emphasis, those disciplines which offer an opportunity for order of magnitude improvements. Among the technologies that promise greatly improved capabilities for the forces are fail safe/fault tolerant electronics, hardening of electronics against various types of radiation, advanced software/algorithms, machine intelligence, rapid solidification materials, advanced composites, active and passive stealth for land, sea, and air forces and submarines, space-based radar, infrared arrays, high power microwaves, and short wavelength lasers.

Another priority is effective transition of newly evolved technologies into operational capabilities. Technology transfer hinges on a number of factors, perhaps most importantly, user-technologist interaction in the formulation of technology programs, clear evidence that the technology is mature, and the ultimate acceptance of the new technology by the user. The Under Secretary of Defense for Research and Engineering will be paying increased attention to the subject of effective transition particularly as it applies to Advanced Technology Development programs.

(3) Defense Advanced Research Projects Agency (DARPA)

The Defense Advanced Research Projects Agency, to which some 15 to 20 percent of the S&T program resources have been apportioned, has the mission to pursue high technology research and development for potential Service application to future defense missions and to provide technical management and guidance to multi-service programs of national significance. As high payoff technology areas mature, feasibility demonstrations are conducted in cooperation with the Services who are then in a position to rapidly move the technology through the development process.

Principal research thrusts in FY 1983 involve: new material developments utilizing techniques such as rapid solidification processing; computer and communication sciences to develop new information processing technology that will form the basis for future intelligence, network-based, military systems; unconventional detection and target penetration research; and geophysical research to develop new technological options for monitoring nuclear explosion events. Major thrusts in exploratory development during FY 1983 involve: space-based infrared (IR) surveillance, laser communications, high energy laser technologies, target acquisition and engagement technologies, particle beam technology, integrated command, control and communications, material processing technologies, and advanced composite aerodynamic structures.

The following summarizes DARPA's major R&D objectives:

-- 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.

-- 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.

-- Command, Control, and Communications: technologies for survivable computer communications, secure message and information systems, improved crisis management and command systems, and submarine laser communications.

-- Land Combat: target acquisition and weapon delivery technologies that provide options to offset the Soviet armored vehicle assault capability, including advanced seeker technology, all-weather targeting and guidance, and advanced armor anti-armor technology.

-- Naval Warfare: development of integrated submarine sonar technology and exploration of non-acoustic submarine signatures.

-- Nuclear Test Verification: development of detection and identification techniques for monitoring other nations' compliance with agreements limiting nuclear testing.

-- Science Initiatives: development of intelligence automated systems and initiatives in electromagnetic propulsion, rapid solidification technologies, electronic and optics materials research, and particle beam technology.

-- Space Defense: The space-based laser technology program constitutes the major element in this area.

-- Space Surveillance: sensor technologies for target detection with countermeasure protection, improved missile surveillance, and new options for early warning on both strategic and non-strategic levels.

(4) Defense Nuclear Agency (DNA)

The Defense Nuclear Agency 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 capability that will enhance strategic and theater nuclear force survivability and security effectiveness. The DNA development and test programs span the entire range of DoD nuclear effects interest.

Increasing weapon sophistication in the United States and Soviet Union creates an urgent need for additional knowledge in nuclear effects. This driving force places increased emphasis on testing and evaluating nuclear weapons effects on strategic and tactical nuclear forces and their ability to survive an enemy attack. A primary goal will be to upgrade our knowledge of nuclear weapons effects phenomenology. Efforts will be directed toward programs which contribute to the effectiveness of land-based intercontinental ballistic missiles and associated systems; the TRIDENT II submarine launched ballistic missile; the air-launched cruise missile; advanced strategic aircraft; satellites; surface ships and submarines; command, control, and communications; and our individual fighting men.

The increasing emphasis on flexible response has made it necessary to increase the research on nuclear weapon employment, planning capabilities, and basic nuclear weapon effects.

A major part of DNA's activities is in the underground nuclear test program. In order to satisfy Service needs and to restore our testing capability, DNA is implementing an augmented test program. This is coordinated with the DoE test program.

b. RD&A in Support of Space and Geophysical Programs

(1) Assessment and Objectives--Space

This mission area covers the planning, engineering, and acquisition activity related to launch of DoD space systems with current boosters; transition planning for Shuttle use; engineering support for experiments in space; advanced development of spacecraft subsystems; and a global instrumentation, communications, and data processing network supporting DoD spacecraft operations. Our primary objectives are to develop a flexible, effective space launch and command and control capability that can support successful space system deployment and operations with enhanced survivability at reduced cost and to provide an advanced technology base for future space system opportunities. Major deficiencies are associated with the vulnerabilities of space launch and command and control systems and the requirement to provide capabilities responsive to projected user needs.

(2) Program Status--Space

The NASA developed manned Shuttle will provide increased capabilities in terms of payload weight and volume delivered into orbit, on-orbit payload checkout and servicing, and retrieval from low earth orbits. However, current boosters and production capability will be retained as a backup until Shuttle capabilities are demonstrated operationally. Our current plan is to fly a DoD experiment on the fourth Shuttle test flight, begin transition of operational spacecraft in October 1983, and complete transition by 1987. A joint Air Force/NASA review confirmed that the Inertial Upper Stage (IUS) is meeting its performance specifications with a 1982 IOC albeit with large development and production cost increases. Progress on construction of Shuttle facilities at Vandenberg AFB continues, but due to increasing schedule risk and technical considerations, the initial IOC date has been delayed until October 1985. Data security is being implemented as we modify NASA facilities to permit classified DoD operations. Studies will be initiated to define an appropriate approach to assuming the availability of space functional capability after a nuclear exchange.

Satellite Control Facility (SCF) data systems are being modernized and a new Consolidated Space Operations Center (CSOC) is planned to eliminate the single nodes that exist at the SCF and NASA facilities supporting DoD spacecraft and Shuttle operations. In FY 1983, facilities construction and systems acquisition will begin leading to a late 1986 IOC for CSOC. We plan to acquire the CSOC control capability by a phased approach whereby capabilities will be added incrementally as needed to support operational requirements.

(3) Assessment and Objectives--Geophysics

This activity includes the development, engineering, and acquisition of geophysical/environmental support systems and the production and dissemination of geophysical/environmental data. As our weapons and tactics become more sophisticated, accurate and reliable, environmental support plays an increasingly more important role in force employment. Our technology base programs address the fundamental interactions of the air, ocean, space, and terrestrial environments with present and future weapon systems, while our environmental observation and tactical decision aid development programs stress delivery of weather information to operational decision-makers to maximize effectiveness of employed forces.

(4) Program Status--Geophysics

This year's environmental sciences programs for battle area support are structured to speed the transfer of technology base developments into the operational force structure. Basic research in atmospheric and oceanographic properties which govern visible, infrared, and millimeter wave transmission feeds into the joint-Service DoD Atmospheric Transmission Program. The related development program is now providing the key tactical decision aid software needed for precision guided munitions support. Engineering development of tactical observation, processing, and display systems for shipboard and field deployment continues.

Modernization of our 1950's technology weather equipment continues with the development of the Next Generation Weather Radar (NEXRAD) and the Automated Weather Distribution System programs. Joint programs and our major participation in the Office of Federal Coordinator for Meteorology ensure that DoD weather support programs are fully coordinated with and complementary to the programs of the other Federal agencies. One of the most critical wartime readiness elements of our environmental support structure is the Defense Meteorological Satellite Program (DMSP) which may be the only consistent source of weather and ocean data for our operational military commands in wartime. Vital denied area weather and ocean data needed by our combat commanders are transmitted directly from the spacecraft to our Naval vessels at sea and to deployed tactical vans for direct Air Force, Army, and Marine Corps battlefield support. Acquisition of the new C-130 transportable tactical readout vans, and development of the microwave imaging sensor and other increased remote ocean sensing capabilities, are important enhancements of this proven capability. Program deficiencies resulting from launch and spacecraft failures in 1980 highlighted the continued need for ground-spare spacecraft to insure continuation of essential operational support.

c. Test and Evaluation

(1) Assessment and Objectives

Operational effectiveness and suitability of weapon systems in acquisition continue to demand our critical attention and scrutiny in the coming year. The changing acquisition process and delegation of authority to the Services does not obviate our requirement to ensure that system readiness objectives are well defined and that operationally oriented test criteria that can be measured and assessed in time to support major program decisions are established. To meet this requirement, we will closely monitor the establishment and measurement of reliability, availability, and maintainability criteria throughout the acquisition process. Well prepared and maintained Test and Evaluation Master Plans will be the primary instrument utilized for planning, measurement, and assessment.

During FY 1983, we will encourage greater interaction and cooperation among Test and Evaluation Offices, Service Test and Evaluation Offices, the developing agencies, and private industry. During early system development stages, emphasis will be placed on resolving issues and determining realistic performance goals and thresholds. Additionally, this interaction and cooperation will be the basis for developing timely, thorough, and cost-effective test programs and adequate test hardware to accomplish test objectives.

(2) Program Status

(a) Test Technology

In support of testing technology advancement, considerable attention is being given to the effective utilization of system test beds and simulation techniques and to software performance evaluation. These advances are required if the activities are to provide realistic assessment of system operational capability.

(b) Test Facilities and Resources

FY 1983 efforts are associated with the continuing assessment and modernization of range instrumentation required to support the testing of advanced technology systems including high energy laser systems at the tri-Service test facility located at White Sands Missile Range. Improved data collection systems are being installed at several installations to reduce data turnaround time and labor intensiveness. Accuracy enhancement for range radar measurements and the application of NAVSTAR/GPS inputs to range instrumentation will be pursued. A long-term program of facility modernization will continue.

(c) Joint Operational Test and Evaluation (JOT&E)

The FY 1983 JOT&E program contains 6 tests to evaluate systems, tactics, concepts, and interoperability in multi-Service operational scenarios. Several of these tests are designed to investigate the effectiveness of the Services' air defense systems operating in an integrated command and control environment. The FY 1983 effort also contains feasibility evaluations on a number of potential JOT&Es which will be considered for future tests.

(d) Foreign Weapons Evaluation (FWE) Program

This program supports technical and/or operational evaluation of foreign nations' weapon systems, equipment, and technologies with a view toward avoiding unnecessary duplication in development, enhancing interoperability, and promoting international technology exchange. The FY 1983 program will emphasize the expanded evaluation of foreign combat support equipment in addition to weapons.

d. Acquisition Management

(1) Assessment

The instability which has characterized the weapons system acquisition process in recent years has resulted in rising costs and delayed availability for many of our most important weapons. Many well-intentioned attempts in the past have, unfortunately, had little lasting impact in reversing these trends. From the outset, we realized that in order to meet the current and projected Soviet threat, there could be no delay in seeking effective ways to correct inefficiencies in the acquisition process. We are dedicated to making the changes necessary to produce more weapons at lower cost on a more timely basis.

To this end, on March 2, 1981, we directed a 30-day assessment of the Defense Acquisition System by a joint team drawn from OSD, the Joint Chiefs of Staff, the Services, and private industry. The assessment, the DoD Acquisition Improvement Program, confirmed many of the problems which have been identified in the past, i.e., affordability, instability, unreliable cost estimates, and burdensome requirements and provided recommendations which served as the basis for our plan to solve these problems.

On April 30, 1981, the Deputy Secretary and I endorsed 8 major acquisition management principles and directed 32 separate actions which comprise our Acquisition Improvement Program. The management principles include improving long-range planning, delegating more responsibility and authority while strengthening accountability, using lower risk approaches, using more economical production rates, making costing and budgeting more realistic, considering readiness and sustainability from the start of programs, strengthening the industrial base, and stressing maximum use of competition.

The specific actions which we have directed reflect these management principles and when fully implemented, will provide substantial savings in acquisition time and cost. In general, these actions will reduce acquisition costs by increasing program stability, implementing multi-year procurement, simplifying procedures, regulations, and legislative requirements, encouraging capital investment to increase productivity, promoting economical production rates, and budgeting to most likely costs. They will shorten acquisition time through the use of an evolutionary approach towards procurement, the Pre-Planned Product Improvement Program (P^3I), and by adequately funding test equipment during the early phase of programs. In addition, support and readiness for major programs will be improved by providing incentives for reliability and maintainability and establishing readiness objectives early in the process. Overall efficiency of the process will be improved through streamlining the DSARC process, implementing controlled decentralization, reducing data and briefing requirements, and tying the acquisition process more closely to the planning, programming, and budgeting process.

Implementation of acquisition improvement actions is also an important objective of the newly-established DoD Council on Integrity and Management Improvement chaired by the Deputy Secretary of Defense. A series of performance reviews has also been initiated in which direct consultation with the Service Secretaries is possible on problems concerning implementation. Through these review mechanisms, we are ensuring substantial progress in the implementation of the Acquisition Improvement Program.

(2) Status of the Acquisition Improvement Program

It is essential that we improve our ability to budget to most probable cost and to bring cost growth in all of its dimensions under control. We must provide stability to our major programs through more effective long-range planning and better estimating.

A number of important initiatives are underway to increase program stability. The Services have submitted preliminary lists of programs as candidates for a consolidated list of about 30 major programs to which the Services and OSD will make a management commitment for stable funding. Program terminations totalling $1.8 billion in FY 1983 and $7.5 billion for the FYDP identified during this year's budget review indicates our resolve to provide offsets in order to fully fund high priority programs. In addition, new programs are under careful review to ensure that only the most urgent requirements are pursued.

Stability and cost savings through improved economies of scale, advance lot buying, and efficiencies in production processes can also be achieved through multi-year funding. Congress has approved an amendment to the FY 1982 DoD Authorization Bill which extends the use of multi-year contracting to major programs. We have proposed the use of multi-year on three programs in FY 1982--the F-16, the C-2, and the Troposcatter Radio. Savings of almost $300 million over the life of these contracts are anticipated as a result of using the multi-year approach. Additional programs will be proposed in FY 1983.

Efforts are also underway to reduce administrative and other indirect costs through reductions in required documentation and reviews. The Defense Systems Acquisition Review Council (DSARC) process, for example, has been streamlined by reducing the number of required program milestone reviews from four to two. Documentation for the DSARC has also been significantly reduced.

In addition, lower administrative costs are being attained by redirecting management attention to reflect the changes in our economy. Many management thresholds in use predate the recent years of high inflation. Consequently, we have managed programs whose real value may be half of what it was 10 years ago. By increasing the thresholds which define a major system from $100 to $200 million in R&D and $500 million to $1 billion in procurement, we have recognized changes in our economy. As a result of this initiative, 10 major programs which require DSARC review under the old thresholds have reverted to the Services for management review. The higher thresholds for small purchase procedures included in the 1982 Authorization Act will also reduce administrative costs.

The use of standard equipment across programs and Services can also lower the cost of administration and support while benefiting readiness and sustainability. The Military Departments are resolving issues of standardization and are identifying new development programs for subsystem and support equipment which can satisfy common requirements. In the future, acquisition of peculiar, rather than common, equipment will require full justification for Defense Department review. In addition, greater effort will be placed on avoiding development costs by increased utilization of commercial market place supplies and equipments through accelerated use of industry standards and development of simplified specifications and commercial item descriptions for defense procurement of competitive off-the-shelf items.

Substantial potential for cost savings also exists through increases in productivity. The President's Economic Recovery Tax Act of 1981, which permits a more rapid capital equipment depreciation allowance, is a critical element in revitalizing the productivity of American industry. Initiatives are underway within the Defense Department to cultivate the investment environment in other important ways. Progress payment rates for defense contractors have been increased 10 percentage points in order to improve cash flow for business and promote capital investment. Additional DoD funding is being made available to Manufacturing Technology and Technology Modernization programs during the next five years to promote further advances in productivity.

Budgeting to most likely costs presents difficult problems including a variety of technological and economic uncertainties, however, we are determined to minimize the extent and impact of cost estimating errors. The Services have been directed to budget to the most likely cost of a program, including predictable cost increases due to risk. To assist in determining real costs, the Cost Analysis Improvement Group provides independent cost estimates in support of acquisition decisions for major programs.

Acquisition time and costs can be reduced by adopting a less risky, more evolutionary approach in applying technological advances in weaponry. The Pre-Planned Product Improvement Program (P^3I) is designed to operationalize this conceptual approach while simultaneously allowing us to develop higher performance alternatives. In response to our request, the Services have identified some 40 programs as suitable candidates for the P^3I programs.

It has been Department policy to encourage competition in the acquisition process wherever possible. Competition has demonstrated its potential to lower costs while promoting a more robust industrial base. However, we also recognize that competition may result in buy-ins which can exacerbate the growth problem. Our basic objective is to encourage meaningful competition at realistic prices for programs where competition is feasible. The majority of our funds continues to be awarded either as a direct result of competition or in follow-on awards where the source was competitively selected, but there is room for improvement. New policy guidance has been issued to all principal DoD buying activities to encourage maximum use of competition. The Services are preparing management objectives on the use of competition to enable us to measure our progress.

e. International Programs

(1) Policy Objectives

Our objectives in the international arena are to improve U.S. coalition war-fighting ability and strengthen the forces of our allies and other friendly nations through cooperative defense agreements, security assistance, and foreign military sales that promote common security interests and to control technology transfer in a manner that advances U.S. security and thwarts Soviet progress.

(2) Current Programs and Initiatives

We strongly advocate cooperative defense programs with friends and allies when those programs make sense, meet valid military requirements, and are reasonably cost-effective. We continue to support the opening of defense markets by promoting agreements which remove restrictive and artificial barriers to international competition for defense systems. It is our view that industry should take a more direct role in international cooperation, and we have taken a number of steps to facilitate this. We created a task group to review comprehensively DoD policy on international co-production, industrial participation, and offset agreements. This group consulted with industry and has made recommendations to ensure that our international programs are based on consistent, equitable policies that reflect the national interest. The U.S. Trade Representative and I have created an industrial advisory committee on defense trade policy and industrial base issues which will consult with and make recommendations to the USD(R&E) and the Deputy U.S. Trade Representative. These efforts will increase the involvement of the private sector in, and give greater coherence to, our international arms cooperation policies.

In the area of technology transfer, we have completed revision of the Militarily Critical Technologies List (MCTL) and are taking steps to implement the use of this list as a control for technology transfer on a multi-lateral basis in the Coordinating Committee for

Multilateral Export Controls (COCOM). We are working with the Department of Commerce in rewriting the DOC technical data regulations, and we are preparing for interagency coordination a revised version of the Interim DoD Policy Statement on Export Control of United States Technology to establish a national policy for export control of U.S. technology.

(3) International Defense Cooperation Plan

Future plans entail closer cooperation in NATO within the framework of the newly adopted Periodic Armaments Planning System (PAPS). PAPS will channel cooperative technological and material development to meet specific mission needs of the Alliance, thereby reducing duplication and increasing combat effectiveness. Outside the NATO area, we will continue to assist friendly nations in improving their industrial bases and in strengthening their defense forces.

f. Nuclear Weapons Development

(1) Assessment and Objectives

The DoD and the DoE share statutory responsibilities for managing the U.S. nuclear weapons program. Both are engaged in a major modernization program to support improvements in the retaliatory posture of our strategic nuclear forces and the replacement of many of our aged theater systems with modern nuclear warheads thereby improving military effectiveness, safety, security, survivability, and endurance in all environments.

(2) Coordination with DoE Programs and Plans

The Atomic Energy Act of 1954, as amended, continues that provision of the original 1946 Atomic Energy Act which provided for a Military Liaison Committee through which the DoE shall advise and consult "on all atomic energy matters which the DoD deems to relate to military applications of atomic weapons on atomic energy, including the development, manufacture, use, and storage of atomic weapons, the allocation of special nuclear material for military research, and the control of information relating to the manufacture and utilization of atomic weapons." The President annually authorizes, by issuing a Nuclear Weapons Stockpile Memorandum (NWSM), the number and types of nuclear weapons to be produced by DoE and transferred to DoD. He also annually authorizes a deployment plan for nuclear weapons, semi-annually authorizes the nuclear testing program, and, on occasion, provides specific programmatic direction to DoD and DoE.

(3) Status of Major Programs

The DoE has been producing a number of different nuclear warheads for DoD systems, including the B61-3 and B61-4 tactical bombs; the W-70, an enhanced radiation/reduced blast (ER/RB) warhead for the already deployed Lance missile; the W-76 warhead for the TRIDENT SLBM; the W-78 warhead for the MINUTEMAN III ICBM; the W-79, an 8-inch artillery fired atomic projectile with ER/RB capability; and the W-80 warhead for the ALCM.

Other warheads now in development include the SLCM warhead; the W-81 warhead for the Navy Standard Missile (SM-2); the W-82, 155mm artillery projectile; and the to-be-selected warhead for the MX ICBM.

4. Conclusion

We are making steady progress in most areas. The real payoff--adequate quantities of effective systems in the field--remains ahead. Achievement of our goals depends on Congressional approval of our programs, and I intend to work closely with cognizant Congressional committees and their staffs to ensure that our RD&A programs are adequately explained and justified. We will continue our emphasis on programs to deploy increased quantities of systems as rapidly as possible and to increase our ability to phase our technology into deployed systems more rapidly.

K. THE DETERRENCE OF CHEMICAL WARFARE

1. Introduction

The United States and all NATO countries are formally committed to a policy of "no first use" of lethal chemical agents and are faithful adherents to the Geneva Protocol of 1925. The United States and its allies have accordingly been seeking a complete and verifiable ban on lethal chemical weapons.

At present, the United States and its allies lack an effective chemical warfare (CW) capability, while the Soviet Union, on the other hand, deploys large and well-equipped chemical warfare forces dedicated to that purpose, and all units train extensively for chemical warfare including the use of live agents.

This sharp imbalance has adverse consequences for U.S. and NATO defense capabilities on the tactical level and equally for the prospect of obtaining a comprehensive, effective, and verifiable arms control agreement that would ban the stockpiling and use of chemical weapons.

It is important to recognize the full gravity of the CW threat in combat conditions: Soviet chemical attacks would seriously degrade tactical operations.

Between 1977 and 1980, the United States engaged in bilateral negotiations with the Soviet Union toward achieving a comprehensive, effective, and verifiable agreement on chemical weapons. While the United States continues to support the objective of concluding a ban on chemical weapons development, production, and stockpiling, we cannot be optimistic on the prospects of success. Aside from the difficulties of verification, the present drastic asymmetry between U.S. and Soviet CW capabilities deprives the Soviet Union of an incentive to negotiate seriously.

The Soviet Union is much better prepared than the United States or our allies to wage chemical warfare and fight in a chemically contaminated environment. They possess a considerable variety of lethal and incapacitating chemical agents and the means to deliver them. Their military doctrine includes the use of chemical weapons and acknowledges their value, particularly when used in massive quantities and with surprise. They have a busy and expanding chemical proving ground and have invested heavily in individual and collective protection and decontamination equipment and have distributed these widely to their forces. By contrast during the 1970s, the United States did not maintain its retaliatory stockpile, did little to improve its defense against chemicals and neglected relevant training and doctrine. We must develop a credible and effective deterrent so that the United States can gain negotiating leverage in this area just as we plan to in any other area.

The inadequacy of the CW capabilities of the United States would require new energetic action even if the

Soviet Union's conduct in this area had been marked by restraint in force deployments and a total abstention from the direct or proxy use of CW weapons. Yet, unfortunately, that is not the case.

2. Program Objective

The objective of the chemical warfare program is to deter enemy first use of chemical weapons against U.S. and allied forces and to terminate such use at the lowest possible level should deterrence fail. This requires developing the capability to sustain military operations in a contaminated environment and to retaliate in kind against enemy first use of chemicals. The chemical warfare program includes developing and fielding protection and detection equipment; establishing and refining doctrine; training our forces to withstand and recover from the effects of a chemical attack; and retaliate with chemicals, if directed, after an enemy first use of CW. Retaliations for the use of biological warfare attacks would have to be accomplished with other systems since the United States has renounced any offensive use of biological or toxin weapons. Although the principal thrust of these programs is to meet the threat posed by the Soviet Union; equipment is being developed to respond to a worldwide spectrum of contingencies.

3. Program Status and Requirements

a. CW Protective and Defensive Capability

Research, development, and procurement efforts are being substantially increased and directed toward equipment which will provide better protection with less force degradation. New designs and materials are necessary to overcome the physiological heat stress and psychological burden of the present individual mask and overgarment as well as the loss of dexterity and tactility due to bulky gloves and boots. Further, improved medical defense items, alarms and detection systems, decontamination equipment, and collective protection to provide adequate rest and relief capabilities are necessary.

b. CW Retaliatory Capability

The current U.S. chemical retaliatory capability is inadequate both in weapon and agent composition. No chemical agents or munitions have been produced since 1969 and the inadequacy of this stockpile will be compounded by continued deterioration and obsolescence as new delivery systems are brought into the inventory and old delivery systems are retired.

c. Support Area

More intelligence support is needed to improve the current threat definition, and communications facilities, equipment, and personnel must be protected.

Host nation support of logistics activities, supply and maintenance, and resupply in a contaminated environment must be addressed. Collective protection capability for fixed installations is needed for sustained operations. Doctrine must be developed and integrated into the total force structure and exercises must be conducted frequently to test our doctrine, train our forces, and identify deficiencies.

We must develop innovative techniques to demilitarize leaking and obsolete munitions because current methods are too slow and costly. Unitary stockpile items must undergo extensive periodic maintenance to maximize their deterrent value. Force structure changes must be made to improve our responsiveness and our training programs. Realistic training programs (some using chemical agents) are required to provide practical experience for our special chemical forces in planning and preparation for actual CW operations. We are committed to accomplish these tasks.

4. Program Description

a. Defensive Program

Current capabilities are severely limited because of available quantities of equipment, degraded performance of that equipment, and minimal personnel training. To meet these deficiencies, we have implemented a major procurement and R&D effort directed at rapidly improving our protective capabilities.

We have created an OSD steering committee and have formed an office under the Assistant to the Secretary of Defense (Atomic Energy) to manage and coordinate all CW matters.

We have initiated and accelerated technology base programs in each critical area and are expanding the procurement program to rapidly field new and improved defensive equipment. We are currently delivering to the field protective masks, overgarments which absorb chemical agents, boots and gloves, automatic alarms to alert troops to the presence of chemical agents, decontamination units to allow continued operations, individual decontamination and detection kits, medical antidotes, field shelters, collective protection facilities, and individual filter units for armored vehicles.

We have initiated programs to better train our forces in the use of available equipment. Well trained personnel will be better able to perform assigned missions, thereby reducing degradation imposed by the cumbersome personal protective equipment.

Medical defense programs are a principal thrust area designed to provide improved prophylaxis and therapy as well as an integrated doctrine for medical operations. Research, Development, Test and Evaluation (RDT&E) funding for these defensive programs has increased from $81 million in FY 1981, to $173 million in FY 1982. We are proposing $213 million for this area for FY 1983. In FY 1981, procurement of defensive equipment was $72 million; in FY 1982, $174 million, and we plan $119 million for FY 1983.

The defensive posture of our NATO allies is highly variable. Under the NATO Long-Term Defense Program (see Part III.I.), a plan has been developed to provide levels and types of equipment as guidelines for all NATO countries.

b. Retaliatory Program

A necessary part of our deterrent posture is the maintenance of an adequately sized and structured retaliatory stockpile. Improved protective measures alone are inadequate as a deterrent against the use of CW agents. Indeed, it has been suggested that the possibility of nuclear retaliation to the use of CW will provide an adequate deterrent. We do not consider such a posture credible today. The United States must have a credible chemical response option to Soviet use of chemical weapons. We need a program that provides measurable and visible evidence of our CW retaliatory capability.

Our present retaliatory stockpile is being maintained through a modest maintenance and surveillance program. We have recently completed the relocation of our most modern air delivered bombs, Weteyes, from Rocky Mountain Arsenal to Tooele Army Depot for long-term storage. Research and development and plans are underway to modernize the stockpile with binary weapons systems. Binary munitions consist of two nonlethal components packaged separately which combine to form a toxic agent, only while in-flight to the target. They will provide significant advantages in the total life-cycle of manufacturing, storage, transportation, and eventual disposal operations. A modernization program would correct the present stockpile deficiencies of agent and munition compatibility with modern delivery systems. Additionally, binary munitions would resolve many of the environmental and public health concerns since the binary components are mixed only in flight to form nerve agent. Only the nonlethal precursors, in separate canisters, are stockpiled. We have programmed $7.0 million in FY 1981, proposed $29 million for 1982, and $32 million for 1983, to expedite this research and development.

In FY 1981, Congress appropriated $3.15 million in military construction funds to renovate an existing structure at Pine Bluff Arsenal to begin binary production. This year, $20 million to procure the necessary processing equipment was approved as an item in the FY 1981 supplemental budget request. This program has complete Administration support. Currently, plans exist to produce two chemical binary weapons, the 155mm GB projectile and the Bigeye VX bomb. Consideration of other systems, to include more effective agents and longer range delivery systems, are currently under review.

c. Force Modernization

We recently reestablished the U.S. Army Chemical School at Ft. McClellan, Alabama, which can provide training for all Services. This will assist in restructuring our forces to meet the chemical requirement. The Army is continuing to activate a nuclear, biological, chemical (NBC) Company in each division, separate brigade, and corps, in addition to placing a NBC qualified noncommissioned officer in every company and a lieutenant and noncommissioned officer in every combat arms battalion. A proper chemical force structure is now being planned to replace the quick fixes of the past few years. In the Army, the current structure of 7,400 personnel will grow to 11,200 by the end of FY 1987 with a required strength of over 21,000. Future changes include modifying the NBC Company to provide additional decontamination capability and an organic smoke platoon, forming decontamination companies, and moving the reconnaissance capability to the division cavalry squadron.

Similarly, the Marine Corps is creating NBC defense units at Marine Division, Marine Aircraft Wing, and Force Service Support Group levels. An NBC Defense warrant officer is being established through the force structure down to the regimental level to supply NBC expertise and training.

The Air Force will increase its force structure by placing 800 chemical defense specialists at bases in high threat areas in FY 1983 and FY 1984. A total of 707 additional life support technicians will be placed to maintain aircrew protective equipment. An additional 83 technicians will be placed in FY 1983-87 for disaster preparedness, civil engineering, and avionics maintenance functions.

At this time, no changes are foreseen within the Navy. The current structure can accommodate the need for decontamination and other requirements under the damage control function, although more work needs to be done to permit Naval forces, particularly those associated with the amphibious warfare mission, to operate and fight in a CW environment.

d. Demilitarization of Obsolete Stockpiles

One of our major problems is demilitarizing obsolete or leaking munitions in our current stockpile. Over 630,000 unserviceable, unrepairable munitions have been identified for immediate demilitarization. An R&D program ($13 million) is planned for FY 1983 to continue development of safe, efficient, and cost-effective technology to replace the current energy-intensive and costly methods of disposal. At this time, two efforts are in progress: the Drill and Transfer System and the Chemical Agent Munitions Disposal System (CAMDS). The CAMDS is a prototype system designed to develop and demonstrate procedures and equipment for large-scale demilitarization of chemical agents and munitions.

Present estimates to demilitarize the stockpile range from $2 to $3 billion; new technology can reduce this expense.

5. Conclusion

Our CW programs are designed to provide a credible deterrent to the use of chemicals by a potential enemy. The purpose is to make it less likely that the Soviet Union would initiate first use of chemical weapons in violation of the long-standing international treaty. The programs described in this chapter, when fully implemented, will provide a capability for operating in the contaminated environment and for retaliatory action against the Soviet forces.

L. LOGISTICS

1. Overview of Defense Logistics

Defense logistics consists of a diverse collection of functions and activities that provide across-the-board support for our military forces. The major objectives of our logistics program are to:

-- ensure that the materiel readiness and sustainability of our forces are consistent with national defense policy;

-- ensure that our military population is adequately fed, clothed, and housed;

-- provide essential upkeep of DoD's capital plant and facilities; and

-- provide the necessary levels of "miscellaneous," but indispensable, management and support.

Although often considered unglamorous when compared to improving force structure or modernization, logistics is essential, and unfortunately, expensive. As an example, about $10 billion is being requested just for spare parts and ammunition, both of which are vital to support readiness and sustainability. These funds represent an increase of $4 billion or a 635 percent increase over FY 1981 and $1 billion or an 11 percent increase over FY 1982. It is imperative that this favorable trend continue in order to enhance our readiness and sustainability posture.

2. Logistics Programs

a. Materiel Readiness

(1) General

Materiel readiness consists of the amount of materiel on-hand relative to the amount prescribed to perform the wartime mission and the ability of this materiel to perform the functions for which it was designed and procured.

Improving materiel readiness is a key theme in the Reagan Administration's Defense program. Immediately upon taking office, we began to correct materiel readiness deficiencies. In our "Revisions to the FY 1982 Materiel Readiness Report" submitted to the Congress in April 1981, we projected specific improvements in materiel readiness indicators we expected to result from the President's FY 1981 Budget Supplemental and FY 1982 Budget Amendment. Our FY 1983-87 Defense Guidance directed the Services to improve the readiness of programmed and previously approved forces before modernizing or increasing force structure. Our FY 1983 Budget will continue these readiness improvement initiatives.

This section provides an updated overview of the materiel readiness of our principal weapon system types. In February 1982, we will send the fifth annual Materiel Readiness Report (MRR) to the Congress which will detail projections of materiel readiness, based on the FY 1983 Budget, for all major DoD weapon systems and equipment. In conjunction with the MRR, we will also provide an overall readiness assessment based on the proposed FY 1983 Budget.

(2) Aircraft Materiel Readiness

There are no significant deficiencies in the quantity of airframes on-hand, the first basic component of aircraft materiel readiness. We use mission capable (MC) rates to indicate the second component of materiel readiness. As we reported to the Congress in April 1981 in "Revisions to the FY 1982 Materiel Readiness Report," the President's FY 1981 Budget Supplemental and FY 1982 Budget Amendment will improve aircraft MC rates in FY 1982-84. The FY 1983 Budget makes further improvements in this area.

The availability of serviceable spare components to replace those that fail during operations is a key element in aircraft materiel readiness. The following funding profile shows our increased emphasis in aircraft spares procurement:

(U) TABLE III.L.1

	Aircraft Spare Procurement ($M)		
	FY 1981	FY 1982	FY 1983
Army Aircraft			
Initial Spares	170	148	151
Replenishment Spares a/	61	76	331
Navy/Marine Corps Aircraft			
Initial Spares	465	753	932
Replenishment Spares a/	631	789	1,149
Air Force Aircraft			
Initial Spares	520	687	983
Replenishment Spares a/	2,190	3,211	2,673

a/ Peacetime operating stocks, and war reserves.

In FY 1983, the Navy will continue its initiative to correct long-standing deficiencies in aircraft carrier and Marine Air Group spare parts allowances to improve peacetime materiel readiness and training. They should complete this initiative by the end of the FY 1986 funded delivery period.

On the average, two years generally go by between appropriating funds for aircraft spares and the delivery of those spares. Thus, much of the benefit of the increased FY 1983 funding for aircraft spares will not be reflected in aircraft MC rates until FY 1985 and beyond.

Depot-level repair funding and backlogs of 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 airframe rework. FY 1983 depot repair funding and backlogs for active forces are shown below, along with comparable figures for the previous two fiscal years.

(U) TABLE III.L.2

	Aircraft Depot Level Funding/End-Year Backlogs ($M)		
	FY 1981	FY 1982	FY 1983
Army			
Components	108/0	129/0	160/0
Engines	37/0	57/0	76/0
Airframes	80/3	90/0	95/0
Navy/Marine Corps			
Components	710/25	691/13	842/0
Engines	181/13	195/21	191/0
Airframes	318/1	356/32	347/0
Air Force			
Components	1,106/11	1,223/0	1,406/0
Engines	199/0	238/0	278/0
Airframes	547/0	697/0	747/0

The MC rate projections depend on manpower resources as well as funding levels. In particular, constraints on the depot civilian work force can affect our depot repair programs.

(3) Ship Materiel Readiness

The FY 1983 Budget fully funds organizational and intermediate level maintenance, including the Commercial Industrial Services program used to accomplish "overflow" intermediate maintenance requirements. Also, the budget fully funds Reliability Centered Maintenance (RCM), extending the benefits of this program to all ship classes. The number of ships overdue for overhaul will be reduced from 16 in FY 1982 to 11 in FY 1983 with operational commitments causing all this backlog.

Funds requested for the Ship Support Improvement Project (SSIP) in FY 1983 will be applied to programs directly affecting fleet readiness, e.g., developing and implementing the life cycle support system for the progressive overhaul concept of the Lo-Mix ships, FFG-7, and PHM-1 classes; and developing, implementing, and continuing surface ship Engineered Operating Cycle (EOC) programs. Approximately 75 surface ships will have entered EOC programs by the beginning of FY 1983. During FY 1983 we will expand these programs to include the LHA-1 class and the first of the new ships in the AO-177 and the CG-47 classes. The Navy is completing engineering development for future EOCs for the LPH-2 and AOR-1 classes and undertaking program development for the CGN-36/38 class ships in FY 1983. Under the Intermediate Maintenance Activity Upgrade Program we will begin improving the Shore Intermediate Maintenance Activities at Pearl Harbor and complete the second stage of the improvement program at San Diego. We expect to complete construction at five other activities in FY 1983, followed by equipment installation. These improvements are essential to fulfill current and future maintenance requirements.

(4) Land Forces Materiel Readiness

The FY 1983 Budget begins an important procurement program to correct long-standing deficiencies in stocks of major equipment end-items in Army and Marine Corps units as illustrated in Tables III.L.3 and III.L.4.

(U) TABLE III.L.3

Stocks of Selected Equipment End-Items (Army)

	Objective for FY 1987	June CY 1981	End FY 1983 FDP a/	End FY 1987 FDP
Medium Tanks	13,702	11,481	13,059	15,106
Armored Personnel (FVS)	12,401	4	1,625	4,922
Carriers (M113)	8,135	12,332	11,947	11,210
Self-Propelled Artillery	3,524	2,959	3,249	3,260
5-Ton Trucks	28,233	10,856	13,476	18,673

a/ Funded Delivery Period.

(U) TABLE III.L.4

Stocks of Selected Equipment End-Items (USMC)

	Objective for FY 1987	June CY 1981	End FY 1983 FDP a/	End FY 1987 FDP
Medium Tanks	716	576	646	716
Landing Vehicles, Tracked	1,350	0	446	1,314
Light Armored Vehicles	200	0	118	268
Self-Propelled Artillery	256	218	230	230
5-Ton Trucks	8,169	3,818	5,745	6,960
5/4 Ton Trucks	13,993	0	656	12,692

a/ Funded Delivery Period.

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, fuels, and munitions to replace those consumed or destroyed during combat operations. Sustainability is achieved primarily through a combination of war reserve inventories and post D-day production. We are expanding existing programs and beginning new ones as we move from the previous philosophy of a "short war" to the more realistic requirement to outlast any enemy in a protracted conflict.

(2) War Reserve Stocks

War reserve stocks are the additional inventories, above the levels needed to support peacetime operations, that we buy to support the higher anticipated wartime activity levels and loss rates.

(a) Weapons and Equipment

Both the Army and the Marine Corps possess and continue to procure combat attrition replacement assets for major items of ground force equipment such as tanks, armored personnel carriers, and artillery pieces.

(b) Munitions and Secondary Items

We are replacing our old war reserve munitions stocks with new, far 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 modern munitions will be below desired levels.

Secondary items include weapon system spare components, repair parts, personnel support items, and a myriad of low-cost consumable items. Although secondary items account for a smaller part of the dollar value of our total war reserve requirements, shortages of these items seriously degrade our combat capability and are as important as shortfalls in major items of equipment and munitions.

We have budgeted about $90 billion over the FY 1983-87 period to improve our modern war reserve munitions and secondary items posture.

The sustainability of our fleet of C-5 aircraft is particularly critical to our ability to deploy any military force with outsized cargo e.g., tanks. The FY 1983 Budget will allow the C-5 fleet to meet its wartime sustainability requirements.

(c) Petroleum, Oil, and Lubricants (POL)

We are placing renewed emphasis on over-coming shortfalls in our war reserves of bulk petroleum products. This program is expensive, considering the unprecedented escalation of fuel prices in recent years, but important. In the past year we have been able to take advantage of the relatively soft petroleum market to augment our stocks at favorable prices, but we do not expect this situation to last.

(3) Production Base

Increased production lead-times and costs have seriously degraded the ability of the industrial base to respond to our near-term readiness and long-term sustainability requirements. These problems have also caused a deterioration of the sub-contractor and supply base, diminished competition, and created production bottlenecks. In the FY 1983-87 Defense Guidance, we introduced the lead-time reduction concept for industrial base preparedness planning, programming, and budgeting. This new focus recognizes that acting to reduce production lead-times will enable us to build our war reserve inventories sooner and improve our ability to surge or mobilize the industrial base.

c. Facilities Support

Facilities support to plant capital investment includes replacement and modernization of obsolete facilities, maintenance of existing facilities, energy conservation, compliance with environmental and OSHA standards, and NATO infrastructure facilities funds.

(1) Military Construction Program Program (MCP)

(a) Living and Working Conditions

Many of our military people are living and working in old, crowded, and decrepit facilities that affect our readiness, cause low morale, and contribute to attrition. The facilities shortage amounts to about $47 billion, $10 billion of which is in Europe. In the FY 1983 MCP, we have especially emphasized improving the living and working conditions for our troops in Europe. The budget shows we plan an accelerated reduction of the real replacement and modernization backlog with emphasis on the replacement or modernization of medical treatment facilities, unaccompanied personnel housing, dependent schools, community support facilities, and operational and training buildings. We have directed 47 percent of the $648 million European construction budget to alleviating unsatisfactory living and working conditions.

(b) NATO Infrastructure

In FY 1983, $375 million is required as our contribution to this multi-nation construction program to support the high priority initiatives of Theater Nuclear Force modernization and the Long-Term Defense Program. This funding level reflects our commitment to a strong and effective North Atlantic Alliance.

(c) Indian Ocean/Persian Gulf (IO/PG) Facilities

The FY 1983 Military Construction request includes approximately $421 million for strategic IO/PG facilities; $340 million and $441 million were approved in FY 1981 and FY 1982, respectively. FY 1984 and FY 1985 facility construction of about $426 million will complete our near-term requirements in this vital area.

The FY 1982 Supplemental Budget request contains an additional $106 million for IO/PG facilities.

(d) Family Housing Program

Our FY 1983 Military Construction Program includes $2.7 billion for family housing. We are especially emphasizing improving the housing, particularly in Europe, by reducing the maintenance, repair, and improvement backlog. About $400 million will be devoted to this purpose. The family housing request contains $490 million for construction which includes acquiring 3,286 units, primarily at installations experiencing substantial increases in people, and post-acquisition construction work on existing units. The operation and maintenance of the 415,000 unit family housing inventory requires about $2.4 billion, including utilities, police and fire protection, refuse collection, routine maintenance, and investments to reduce the maintenance and repair backlog to an acceptable level. We need funding of $162 million to lease approximately 29,000 housing units, principally to support families assigned to overseas areas.

(2) Real Property Maintenance Activities (RPMA)

The RPMA program provides funds for a host of functions related to the operation and maintenance of our real property facilities, including maintenance and repair, minor construction, utilities, and other engineering services, e.g., janitorial, engineering design, administration. The condition of our facilities has been steadily declining during the past two decades because of inadequate funding, inflation, and the growing age of plant assets. The unfunded backlog of maintenance and repair work has grown 65 percent over the past three years to nearly $4 billion at the end of FY 1981. For FY 1983, we have budgeted $7.4 billion for RPMA; a 56 percent increase over FY 1980, and we plan to achieve additional real budget growth in this area in each of the following four years.

(3) Energy Conservation Investment Program (ECIP)

Executive Order (EO) 12003 requires that we reduce the energy we consume in existing facilities 20 percent by 1985 (compared to 1975 use). The ECIP provides funding to accomplish permanent energy conservation retrofits to existing facilities that will achieve a 12 percent reduction; we will achieve the remaining eight percent from operational efficiencies and maintenance improvements. In addition to serving as the basis for complying with EO 12003 and Section 547 of the National Energy Conservation Policy Act, ECIP will save us significant long-term energy costs and improve our mission support. Investments in this program, about $776 million during FY 1976-82 have had an average amortization period of less than five years.

(4) Pollution Abatement

Our Defense installations must comply with the requirements of all environmental laws, including the Clean Air and Water Acts and the Resource Conservation and Recovery Act. Although we have made significant progress, a number of our installations continue to violate standards and need retrofit projects to make them comply. The FY 1983 Budget includes funding for improvements to sewage treatment facilities, oil spill prevention projects, solid and hazardous waste management facilities, and air controls from heating plants and fuel storage facilities.

(5) Prevention of Accidents and Occupational Illnesses

We must reduce the accidental loss of material resources and the incapacitation of people from injuries and work-related illnesses. The FY 1983 Budget contains funding for correcting serious workplace hazards and for strengthening safety and occupational health training and surveillance.

d. Logistics Management and Support

(1) Supply Programs

We are continuing our efforts to centralize Defense Logistics functions in the hands of single-agency wholesale managers without degrading overall force capability. Toward this end, we are transferring inventory management responsibility for 200,000 Service-managed consumable items to the Defense Logistics Agency (DLA). We estimate the transfer will result in recurring savings of approximately $15 million per year. We will evaluate the results of this project in terms of readiness impacts and costs before deciding whether to transfer additional consumable items from the Services to DLA. The assignment of single-Service managers for multi-Service nonconsumable items is scheduled to be completed by December 1982.

By early 1983, DoD Components will begin executing a new DoD-wide policy for computing war reserve spare and repair parts requirements. This policy will help us evaluate sustainability and determine overall war reserve funding priorities.

We are implementing a program to introduce the use of bar code markings in the DoD distribution system. We will use existing computers to process the bar code information and maintain logistics data bases. We estimate resulting annual savings from improved inventory control and materiel processing will exceed $100 million.

(2) Maintenance Programs

Over 800,000 people maintain our weapon systems and equipment and that maintenance represents annual costs of $22 billion. We have established an Aeronautical Depot Maintenance Management Task Force to improve how we manage depot maintenance. Initiatives are underway to size depot capacity to meet mobilization requirements and to operate as efficiently as possible in peacetime. We expect our increased emphasis on interservice support alternatives to reduce the need for new capital investment. We are applying the Reliability Centered Maintenance (RCM) concept extensively to aircraft, engines, ships, and ground vehicles, resulting in reduced maintenance requirements, reduced costs, and enhanced safety and availability. In addition, we are evaluating the RCM concept for applicability to additional items and systems.

(3) Productivity Enhancement

To increase the productivity and efficiency of our industrial-type facilities, we are providing increased authority to industrial fund managers to purchase modern labor-saving equipment. Starting in FY 1983, capital equipment items will be charged to industrial fund cost-of-operations through a depreciation charge, over the useful life of the equipment, instead of being purchased through the procurement accounts.

(4) Traffic Management, Land Transportation, and Ocean Terminal Operations

The Military Traffic Management Command's (MTMC) Contingency Response Program (CORE) has developed and matured considerably through close coordination with industry and other federal agencies and through exercises. The CORE program provides the means to determine availability of industry resources in an emergency situation. Construction/upgrade programs for improving ammunition outload capabilities are on schedule and will be completed by September 1982. I have approved a major realignment of functions between the MTMC and the Military Sealift Command (MSC) to improve how responsively and efficiently we manage and deploy traffic. The first step was the consolidation of cargo offering and booking activities under MTMC. By October 1982, we will have strengthened the Joint Deployment Agency and consolidated MTMC and MSC into a single command.

3. *Conclusion*

This Administration is dedicated to improving our inadequate logistics posture. Force readiness and combat staying power are the two areas we have identified that require our priority attention. We are committed to making our forces ready and able to accomplish any mission successfully in support of our national objectives. Revitalizing our logistics programs, begun this year, will let us reach that goal.

M. MANPOWER

1. Introduction

This Administration is determined to meet our peacetime military manpower requirements with volunteers. We are convinced that with the proper level of pay incentives, bonuses, and educational incentives; attention to quality of life issues; and adequate resources for recruiting, we can attract and retain enough qualified men and women to meet our military needs. We are confident that the All Volunteer Force (AVF), properly managed, can work. In addition to meeting our manpower needs with a volunteer force, we are committed to improving our readiness by emphasizing military training and more efficient use of our civilians.

Table III.M.1 shows our FY 1983 manpower strengths and compares them to FY 1981 and FY 1982. In FY 1983, active military strength increases by 66,000 over FY 1981 and by 38,000 over FY 1982.

TABLE III.M.1

Defense Manpower Strengths
(End Strengths in Thousands)

	FY 1981 Actual	FY 1982	FY 1983
Active Military	2,082	2,110	2,148
Selected Reserve	899	946	1,000
Individual Ready Reserve/Inactive National Guard	419	411	435
Standby Reserve	64	50	40
Military Retirees 1/	134	219	360
Civilian 2/	1,019	1,034	1,035

1/ Only those retirees who would be mobilized.
2/ Excludes civil functions.

Total manpower costs are 41 percent of the planned FY 1983 budget outlays, 7 percent less than in FY 1981. These costs compare favorably with manpower costs in labor-intensive industries which run about 48 percent of expenditures.

The remainder of this section discusses the highlights of the Department's manpower program. You will find detailed discussions in the Defense Manpower Requirements Report, which we will send to Congress on March 8, 1982.

2. The Manpower Program

a. Active Force

(1) Current Manning Levels

o The following table presents our current and projected active duty manpower strengths. We plan to increase the number of active military people in FY 1983 by 66,000 over FY 1981 levels.

TABLE III.M.2

Active Military Manpower
(End-Strengths in Thousands)

	FY 1981	FY 1982	FY 1983
Army	781	784	784
Navy	540	553	569
Marine Corps	191	192	195
Air Force	570	581	600
DoD Total	2,082	2,110	2,148

(2) Recruiting

FY 1981 was an excellent recruiting year from both a qualitative and a quantitative perspective. All four Services achieved their recruiting goals. Table III.M.3 shows the actual and planned Service enlisted accessions for FY 1980 through FY 1983. FY 1983 total DoD accession requirements are higher than those for FY 1981. This means that recruiting in FY 1983 will be a real challenge.

TABLE III.M.3

Actual and Planned Enlisted Active Duty Accessions
(Numbers in Thousands)

	Actual				Planned	
	FY 1980		FY 1981		FY 82	FY 83
	Number	Percent of Objective	Number	Percent of Objective	Number	Number
Army	173.2	100	137.9	101	130.6	150.3
Navy	97.7	101	104.3	102	93.3	106.0
Marine Corps	44.3	101	44.0	103	44.3	44.2
Air Force	74.7	100	81.1	100	75.0	81.3
DoD	389.8	101	367.4	101	343.2	381.8

Table III.M.4 depicts Service high school graduate recruiting achievements for the last two fiscal years. FY 1981 improved significantly over FY 1980. Each of the Services increased the percent of non-prior service (NPS) high school graduate accessions with the Army having the largest increase in numbers and percentage. All the Services need to sustain or improve the high school graduate enlistment trend started in FY 1981.

TABLE III.M.4

Non-Prior Service Active Duty Accessions
High School Diploma Graduates
Male and Female*

	FY 1980		FY 1981	
	Number	Percent	Number	Percent
Army	85,800	54	94,700	80
Navy	65,800	75	69,700	76
Marine Corps	32,500	78	32,800	80
Air Force	59,300	83	67,400	88
DoD	243,500	68	264,600	81

* Numbers may not add to totals due to rounding.

Congressional restrictions enacted in FY 1980 and FY 1981 limit the proportion of the lowest acceptable test score category (Category IV) recruits and male non-high school graduates that can be accepted. Table III.M.5 summarizes these restrictions.

TABLE III.M.5

Congressional Controls on Recruiting
in FY 1981/FY 1982 DoD Authorization Act 1/

Fiscal Year	Maximum Percent Category IVs	Minimum Percent High School Graduates
1981	25% DoD Average	Army Males - 65%
1982	25% Each Service	Army Males - 65%
1983+	20% Each Service	No Restriction

1/ Beginning in FY 1982 Congress added the constraint that the Services may not enlist non-high school graduate Category IV recruits.

Table III.M.6 shows that the Services achieved the Congressional quality constraints in FY 1981. The more stringent limitations on Category IV accessions in FY 1982 will be a challenge for the Army. This problem will become even more serious in FY 1983 when the Category IV ceiling drops to 20 percent for each Service.

TABLE III.M.6

FY 1981 Non-Prior Service (NPS) Active Duty Accessions

Service	Percent of NPS Who Were Category IV 1/	Percent of NPS Male Accessions Who Were High School Diploma Graduates
Army	30.9	77.8
Navy	12.4	73.7
Marine Corps	12.9	78.8
Air Force	7.1	87.6
DoD	17.9	79.0

1/ Males and Females.

The Congressional recruiting constraints, expected improvements in the economy, and a continuing decline in the youth population will make recruiting in FY 1983 and beyond an extremely challenging task. We will continue to do everything we can to improve both the attractiveness of military service and its competitiveness in the youth labor market.

(3) Retention and Career Manning

(a) Enlisted

Each of the Services is reviewing its career force objectives. The likely outcome is a force with a richer career content, even if end strengths were not increasing. The larger career force comes from the increased Service retention, changing mission requirements, and the recommendations of external studies. The Services may choose to temper growth in their career forces to some extent by raising reenlistment standards to upgrade the caliber of their career people. The following table compares the programmed FY 1983 career force with FY 1981 and FY 1982.

TABLE III.M.7

Enlisted Career Force
(5 to 30+ Years of Service)

Fiscal Year	Army	Navy	Air Force	Marine Corps	Total
1981	283.4	203.5	240.0	49.5	776.4
1982	294.5	212.2	243.5	50.0	800.2
1983	295.6	222.2	247.0	51.7	816.5

To achieve these career force increases, we must maintain high levels of retention.

Current reenlistment rates are among the highest ever experienced. We attribute this increase in reenlistment to the recently enacted compensation initiatives and to aggressive Service use of reenlistment bonuses. However, this increased retention has not yet proven to be permanent or sustainable over an extended period, and in the short run, does not solve such problems as individual skill shortages, quality, and distribution imbalances. Substantial skill/grade shortages and imbalances exist within the total number of careerists. The Services have started implementing policies and procedures needed to maintain larger career forces and to redistribute careerists into shortage and imbalanced skills.

Each of the Services has substantial shortfalls in mid-career levels. Only consistent reenlistment success over several years can solve these experience level shortfalls. We need five to six years of successful retention to reduce the shortage of personnel with 12 to 20 years of experience. In the meantime, the Services must substitute people with less experience while trying to retain more young and mid-level careerists. To achieve this retention pattern, we intend to capitalize on the reenlistment bonus program. Given an adequate level of compensation overall, we can apply resources to improve retention in selected skills and at selected experience levels where shortages are most severe.

(b) Officers

With few exceptions, we are achieving desired officer accession and retention objectives. Unfortunately, the exceptions are in the high skill, high cost areas, such as pilots, nuclear qualified, engineering officers and specialty physicians.

Each of the Services is short of aviation people. We have started several positive programs to counter these shortages. We believe raising warrant officer flight pay to the same level authorized for commissioned officers eliminated the primary reason for leaving given by departing Army warrant officers. Furthermore, we believe that the recent increase in air crew incentive pay, coupled with the paying of aviation bonuses will, in the long-run, improve aviation personnel retention.

We are also short of Air Force engineers and Navy nuclear trained officers. We believe the principal factor behind these shortages has been the compensation gap between civilian industry and the military. However, we feel we can reduce these shortages to manageable levels by judiciously applying accession and retention bonuses. We anticipate that payment of these bonuses and intensified recruiting directed at college engineering students will enable us to reach our accession and retention goals.

(4) Education Incentive Program

We have completed our review of the test results and analysis from the FY 1981 Educational Assistance Test Program. The test program demonstrated that education benefits can significantly increase the number of high-quality accessions. The test demonstrated also that the enlistees' choice of Service and military specialty varied with how they perceived the relative benefits offered by the different Services.

At this time, we are in the final stages of developing a new education program for military personnel. This program will contain provisions that encourage both the recruitment and retention of high quality personnel. It will be designed to satisfy the needs of the different Services in these areas.

(5) Compensation Initiatives

The momentum from 1980 legislative actions for members of the active duty force continued into 1981. Members of the Armed Forces under P.L. 97-60 received on October 1, 1981, an average 14.3 percent increase in basic pay, Basic Allowance for Subsistance (BAS), and Basic Allowance for Quarters (BAQ). The basic pay increases ranged from 10 to 17 percent for enlisted members, 14.3 percent for officers. In addition to this increase, P.L. 97-60 also continued other compensation and reimbursement improvements.

In FY 1983, we have budgeted for a CHAMPUS dental program for dependents of the active force and improved reimbursements for members on government-directed moves. In addition, we will be asking for an extension of enlistment and reenlistment bonuses for the active force beyond September 30, 1982.

By maintaining military compensation at levels competitive with the private sector, we believe that we will be able to meet our manpower needs with an All-Volunteer Force.

(6) Quality of Life

Quality of Life is a synthesis of many individual DoD programs that recognizes the importance of our Armed Forces people and acknowledges their contributions to the Defense effort. We have directed our efforts toward improving existing programs as well as identifying and generating new programs to help compensate for the demanding aspects of military life. Medical care, family and bachelor housing, child care programs, exchanges, commissaries, recreation and community activities, institutional benefits, education, postal services, credit union sponsorship, and religious programs all fall under the broad umbrella of "Quality of Life." Quality of Life also addresses issues such as policies on tour lengths, assignments, housing allocations, and other non-pay compensation. It includes activities such as financial counseling, lending closets, family services programs, housing referrals, and social clubs.

We have improved and expanded military compensation, housing, personnel services, and other non-pay benefits. The recent pay increase for military personnel and the $14.7 million DoD received for construction of 10 child care centers during FY 1982 indicate the success we have achieved. We are establishing family services and support centers and testing around-the-clock child care. Establishing staff offices at the Military Service level to address family needs, further emphasizes our commitment to Quality of Service Life.

Recent analysis of the human dimensions of military life noted that service people are making career decisions based on family issues and their Quality of Life. A significant correlation exists between Quality of Life programs, spouse satisfaction, recruitment and retention of qualified people, and the discipline, morale, and readiness of our forces. DoD's efforts in the last year epitomize our commitment to improving the Quality of Service Life. Our ultimate goal must be to treat each member of the Armed Forces and his or her dependents with compassion, concern, and consideration.

(7) Training

Effective training of military people and units is an essential ingredient of force readiness. We are acting to increase and improve the training provided to our Armed Forces.

Several initiatives are aimed at strengthening the professional training of enlisted people. The Army is starting a program for longer and more intensive training of new enlistees. An added week of training is being used to inculcate discipline more firmly and to train soldiers more thoroughly in the use of weapons. In FY 1983, the Air Force will complete an initiative to raise the average length of skill training courses for new entrants from 11.5 weeks to 12.3 weeks. Most of the increase will be applied to maintenance-related courses. The Navy is expanding its contract instructor initiatives so it can train more maintenance people in electrical and electronics ratings. Use of contract instructors reduces the requirement to divert experienced petty officers, who are in short supply, from the fleet to instructor billets ashore.

The Army is applying additional resources to NCO training in FY 1983 to raise the proficiency of their junior NCOs. The Navy recently established a Senior Enlisted Academy to provide E-8 and E-9 petty officers with advanced leadership and management training.

Like individual service members, military units must be repetitively trained and exercised in their wartime roles in order to achieve and maintain the team skills required for success in war. The amount of air, sea, and ground space required for realistic training has steadily increased over the years, largely as the result of the longer ranges of modern weapons. At the same time, the increase in non-military demand for air and ground space has constricted the scope of unit training. The rising cost of unit training, particularly costs of fuel and ammunition, demands that all unit training be as effective as possible. The Military Services, by applying modern training technology and commendable ingenuity, have made substantial progress toward providing sound unit training despite these constraints.

In conventional ground maneuver training, we have never before been able to track the course of the battle between opposing forces with full objectivity--that is, to determine the effect of weapons fire. The Army is completing the development of an instrumentation system at the National Training Center that will overcome this obstacle. Vehicles and people on each side are fitted with laser detectors and direct fire weapons are fitted with laser emitters. Hits and near misses are signaled, thus helping to teach the participants the tactics and techniques necessary to accomplish their missions without suffering avoidable casualties. Furthermore, the details of the battle are transmitted to a central control station that provides visual displays that become the basis for post-exercise critiques. Using this system, an opposing force maneuver becomes a profound learning experience that will stand our forces in good stead in the shock of actual combat.

We can use other applications of simulation at a unit's home base to provide realistic training that otherwise would not be available because of constraints on training spaces and ranges. The Army has been testing a conduct-of-fire trainer, a highly capable computer-driven simulator used to train tank commanders and gunners on the M-1 tank. The trainer is planned for use at the training base and at operational tank units. Training of this type would be particularly valuable in Europe where enough range space is not available to assure year-round tank gunnery proficiency. Such readiness dividends are the primary goal of simulation, while savings in fuel and ammunition should be regarded as secondary, albeit highly desirable, goals.

The Navy is increasing its use of simulators that allow a ship's crew to conduct tactical exercises in air defense or anti-submarine warfare while the ship is in port. The simulator, housed in a mobile van parked on the pier, is plugged into the ship's operating systems and provides realistic practice. The payoff is increased readiness.

In summary, the FY 1983 President's Budget continues and reinforces the emphasis on improved training we began in the amendments to the FY 1982 budget.

b. Reserve Components

(1) Selected Reserve Units

We have targeted the current Reserve program to produce trained strength in units equal to wartime requirements by 1986. During FY 1981, we added 48,200 to the Selected Reserve strength. These strength improvements follow substantial gains during FY 1979 and FY 1980. All of the Reserve Components except the Army National Guard, the Army Reserve, and the Naval Reserve are near their wartime requirements. At the end of FY 1981, the Army Reserve Components remained at about 175,000 trained personnel in units below their FY 1986 wartime objectives. Based on the increase of 37,700 during FY 1980 and 41,000 in FY 1981, we may realistically assume that they will achieve these objectives.

We attribute the significant turnaround in the Reserve strength to three positive programs:

-- incentive or bonus programs for enlistment and reenlistment,

-- intensified programs for recruiting and retention, and

-- more meaningful training and other initiatives that improve the attractiveness of Selected Reserve membership.

We do not envision significant changes in Selected Reserve incentives. We will continue to refine their application to acquire and retain the manpower levels and skills required for mobilization. Recruiting and retention initiatives that we are pursuing 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. We are increasing the full-time active duty Guard and Reserve support to units to assist unit commanders in improving the training and administration of their units.

(2) Pretrained Individual Manpower

Pretrained Individual Manpower consists of Individual Mobilization Augmentees (IMA), members of the Individual Ready Reserve (IRR), members of the Inactive National Guard (ING), members of the Standby Reserve, and retired military personnel. Currently not enough manpower is available to meet the Pretrained Individual Manpower mobilization requirement, and this constitutes one of our most serious manpower problems. The IMAs are the primary source of these individuals due to their immediate availability. The IRR, the largest group, has increased from its low point of 342,000 in June 1978 to 419,000 at the end of FY 1981. We anticipate further increases but they will not be enough to meet mobilization requirements. We have begun a number of low cost or no cost initiatives that have had a positive effect. Some of these are:

- -- The initial benefits of the 1978 legislation giving women a six-year service obligation were realized during FY 1981 as women completed their three-year tours of active duty and were transferred to the IRR;

- -- The effect of the 1979 legislation giving enlistees 26 years of age and older a six-year service obligation will result in 1982 increases in IRR strength;

- -- Transfers from the IRR to the Standby Reserve during the last or sixth year of obligated service were terminated in 1979;

- -- Screening of individuals leaving active duty and the Selected Reserve before the end of their obligated service is continuing to ensure that we discharge only those with no mobilization potential and transfer the remainder to the IRR;

- -- The Army is continuing a test of two-year active duty enlistment that results in people spending more time in the IRR;

- -- The Army National Guard is expanding the Inactive Guard program to permit the continued unit affiliation of Guard members who no longer train with their units;

- -- Mobilization procedures for Standby Reservists have been streamlined as a result of legislation eliminating the requirement that the Director of Selective Service declare Standby Reservists available before DoD can mobilize them; and

- -- An IRR reenlistment bonus of $600 was tested in FY 1981 to encourage unobligated members to reenlist for three years in the IRR or the ING. Congress did not extend the authority for both bonuses for FY 1982. Since the IRR bonus began to provide positive results at year-end, we plan to propose its reinstatement at an increased amount.

We are also continuing several initiatives to improve the management, training, and readiness of pretrained manpower. These initiatives are as follows:

-- Personnel management continues to improve with better tracking and location procedures, more frequent contact, faster mobilization notification procedures, and peacetime refresher training;

-- The Air Force's program of preassigning Individual Reservists (designated as Individual Mobilization Augmentees) in peacetime to mobilization positions with active force organizations is being implemented in the other Services beginning in FY 1982; and

-- Service programs are expanding to identify the mobilization positions retirees can fill, to establish personnel files on retirees, and to assign retirees to mobilization positions. The Army issued preassignment orders to over 85,000 officers and enlisted retirees in late 1981.

We are developing a comprehensive program to eliminate the pretrained manpower shortfalls. This program's long lead-time solution is to extend the six-year military service obligation to eight years. However, in the interim before that change yields increased strength in the IRR, we need incentive programs to retain members in the IRR and to encourage their enlistment in the IRR. These incentive programs can be phased out as IRR strength increases and the effect of the service obligation extension begins. We are also proposing that full-time Servicemen's Group Life Insurance (SGLI) eligibility be extended to the entire Ready Reserve, including the IRR. Finally, we are proposing a direct IRR enlistment program for the Army which we expect to provide an increase of 5,000 during FY 1983. We believe that this program will not only reduce pretrained manpower shortfalls in the short-term but also provide a permanent solution.

c. Civilians in the DoD

(1) Composition of the Civilian Workforce

In the past, the tendency has been to view the Department's Federal civilian employees as basically serving in bureaucratic overhead functions, a perception not founded in fact. In fact, the majority of the DoD civilian work force can be directly related to the readiness of the operating forces of the Armed Services. They are the major source of effort for fulltime support of the Reserve Forces and depot level maintenance of ships, aircraft, and weapons systems and the operations of vital shore based activities of the defense forces. Included are such functions as logistics, intelligence, communications, medical, training, research, and engineering acquisition that provide essential defense support services. The Department's civilians are an integral part of our total force defense posture.

In FY 1983, the DoD will employ 947,000 civilians directly and 88,000 indirectly, for a total civilian workforce of 1,035,000. Indirect hire civilians are foreign nationals employed by their own country in support of U.S. forces. We reimburse the hiring country for this support. About 35 percent of the direct hire workforce are blue collar workers who perform the depot level repair and maintenance, maintain the military installations, and man the production lines in government owned manufacturing plants. The remainder of the direct hire workforce, white collar workers, provide the necessary scientific, professional, engineering, technical, administrative, and clerical support.

(2) Current Manning Levels

Our plan is to increase slightly the size of the civilian workforce in FY 1983. A comparison of the FY 1983 program with FY 1982 and prior years is shown in the following table.

TABLE III.M.8

DoD Civilian Employment
(In Thousands)

	Actual					Programmed	
	FY 64	FY 68	FY 72	FY 80	FY 81	FY 82	FY 83
Total	1,176	1,393	1,159	990	1,019	1,034	1,035
Direct Hire	1,035	1,274	1,049	916	940	947	947
Indirect Hire	140	119	110	75	79	87	88

Basic government policy sizes the uniformed service no larger than necessary to meet military contingencies and employs civilians in jobs that can be performed by civilians. The civilian work force is an essential element of war fighting capability. When civilian staffing is inadequate to perform necessary functions, uniformed people are diverted from their primary duties to perform these functions, adversely affecting the readiness of their units.

Between June 1974 and September 1980, civilian direct hire wage board and salaried employment declined greatly, initially reflecting reduced Defense expenditures and ultimately reflecting employment ceilings and hiring freezes designed to control overall Federal employment. The resulting backlogs in depot, shipyard, and installation maintenance and increasing levels of borrowed military manpower adversely affected readiness and uniformed personnel morale. The FY 1981 budget supplement submitted by this Administration resulted in a 14,000 increase in FY 1981 direct hire civilian end strength employment. These civilian personnel increases were dedicated to reducing unacceptable backlogs in depot maintenance, to augmenting procurement, supply, and contract administration. An additional 5,600 indirect hires were employed to reduce the level of borrowed military manpower. However, overall resource constraints require Defense to find ways to do more with less. Major strategies to accomplish our goal are contracting out and pursuing productivity enhancing capital investment and management strategies.

(3) Management Initiatives

(a) Contracting Out

The Defense Department has been a government leader in reducing costs and manpower through economical contracting out of commercial activities. We currently are contracting for services that would otherwise require over 120,000 federal civilian and military employees. By the end of FY 1982, we plan to complete cost comparison studies for about 21,000 civilian and military jobs to determine whether contracting operations is more economical. We also expect a similar level of effort each year from FY 1983 through FY 1987. We hope that Congress will adopt language, similar to the Senate Armed Services Committee proposal in the FY 1982 Authorization Bill, to eliminate the burdensome Congressional reporting requirements on converting small commercial activities to contract. Eliminating the current requirements can speed the conversion process and reduce the cost of conducting detailed cost studies for small activities, which can sometimes offset our potential first year savings.

(2) Improving Productivity

We are keenly aware that we need continuing productivity improvements to realize the full efficiency of the DoD work force. Productivity has been improving at an average annual rate of 2.0 percent since 1972 and we expect it to reach an annual rate of 2.2 percent because of recent initiatives and continued management attention.

Productivity improvement initiatives have focused on major productivity enhancing investments that release resources for higher priority workloads. Under the Productivity Investment Fund (PIF), $121 million has been earmarked in FY 1983 for productivity enhancing capital investments that we expect to produce a life-time return on investment of approximately $11 for each $1 invested. Previous PIF projects for FY 1981 and FY 1982 totaled $165 million and are expected to generate savings equivalent to 6,000 manpower spaces beginning in FY 1982. We have structured these expected savings into our requirements.

Other productivity improvement initiatives that we expect will increase our productivity growth are expanded application of operational improvement, performance standards, and employee motivation techniques.

We expect increased management commitment to productivity improvement from an increased focus on the use of goals and the collateral development of improvement plans to support those goals.

(c) Efficiency Reviews

The Services will also be conducting efficiency reviews of their in-house commercial activities, that are not suitable for contracting, in hopes of reorganizing into more efficient operations. It is estimated that it will take about six years to review all commercial activities.

(d) Interservice Support

DoD Components are also conducting studies to determine if duplication of services can be eliminated and economies realized through inter-service and intraservice support agreements.

(e) Management Incentives

We also plan to experiment with several management incentive ideas to encourage defense managers to be more efficient and cost-effective.

d. Health Resources

Recognizing the dual mission of the military health care system, our goal is to maintain a cost-effective system that will satisfy wartime medical support requirements and provide quality care to all beneficiaries as an integral part of military compensation.

(1) Wartime Medical Posture

The most important responsibility of the military health care system is to return to duty as many people as possible in time of war. The beginning of FY 1982 saw the first sizable medical acquisitions for readiness in a decade, but this is only the first increment of what must be done in the years ahead. Of foremost importance is the need to press forward with the speedy acquisition of a hospital ship capability.

Working with the maritime industry, we are in the process of identifying the most capable and cost-effective hulls for conversion to a hospital ship(s) with an aggregate definitive care capability of 24 operating rooms and 2,000 beds. Delivery of the ship(s) is anticipated in the mid to late FY 1985.

In CONUS, the Civilian-Military Contingency Hospital System (CMCHS) has been implemented and continues to experience strong support from the civilian health care sector. We feel confident that we can have at least 40,000 civilian hospital beds committed to supplement the military system in wartime by March 1982.

(2) Peacetime Medical Posture

In peacetime, the military Health Services System has a dual role: to provide a source of trained health professionals ready to deploy during mobilization and to provide a source of quality medical care to active duty and retired personnel and their dependents. Care for people is an integral component of military personnel compensation policy and is provided through a direct-care system of military hospitals and clinics and through the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS).

Our goal is to make this system as cost-effective as possible, while still satisfying both mobilization and compensation requirements. To this end, we have recently implemented a number of initiatives designed to improve the management of our medical resources, including:

-- a uniform chart of accounts that for the first time provides uniform costs and work load data for tri-service analysis;

-- an eligibility/enrollment system that not only will identify the size and distribution of the beneficiary population, but also will help reduce fraudulent use of the system by non-eligible persons;

-- a unified, tri-service approach to the application and acquisition of computerized hospital information systems; and

-- the elimination of overlapping missions among the Services.

These initiatives support our goal of a cost-effective direct care system capable of satisfying mobilization requirements.

(3) Pretrained Medical Manpower

The General Accounting Office Report "Will There Be Enough Trained Medical Personnel In Case of War?", published on June 24, 1981, concluded that the number and types of medical personnel in the Active and Reserve Components falls far short of the total projected wartime requirements. Our response is a positive, aggressive program to address the 19 specific recommendations made in the report.

A major objective is to increase the availability of pretrained medical manpower to both the continental United States and overseas military medical facilities during wartime. Initiatives are currently underway to evaluate the feasibility of pre-contracting civilian medical specialists for use in stateside military hospitals and to recruit and retain more critical medical specialists in the Reserve Components.

To address Reserve Component medical issues better, we established a Reserve Components Medical Council on August 25, 1981. The Council is a forum for senior Guard and Reserve medical general/flag officers to address major issues affecting medical readiness and to propose plans, programs, policies, and procedures to resolve the problems. Additionally, I have established a Director of Reserve Forces Medical Planning position on my staff to integrate Active, Guard, and Reserve Medical Forces into the total medical support system.

e. Personnel Management

(1) Composition and Distribution of Minorities in the Active and Selected Reserve Forces

(a) Active Forces

In FY 1981, 30.2 percent of the enlisted force were minority personnel (21.9 percent Black, 4.0 percent Hispanic, and 4.3 percent Other). The Army (41.2 percent) has historically had the highest minority content and the Navy, the lowest. Part III.M.1 shows the percentage of minorities in the active duty enlisted force by service from FY 1971 to FY 1981. During this 10-year period, minority enlisted women increased from two-tenths of 1 percent to approximately 3 percent of the total force and from 18.7 percent to 32.8 percent of the total number of enlisted women.

In FY 1981, 9.1 percent of the officer force were minority people (5.2 percent Black, 1.2 percent Hispanic, and 2.8 percent Other). Part III.M.2 shows the percentage of minorities in the officer force by Service from FY 1971 to FY 1981. The number of minority women in the total active officer force increased from two-tenths of one percent in 1971 to approximately 1.5 percent in FY 1981 and from 5.5 percent to 15.9 percent of the total number of active duty women officers. The significant minority strength increases over the 10-year period reflect the intensive procurement efforts by all Services.

The percentage of all active duty officers who are black has more than doubled since 1971, although the number of black officers is less than representative of the total black population, black officer accessions are roughly proportional to the black college graduate population.

CHART III.M.1

MINORITIES AS A PERCENTAGE OF ACTIVE DUTY ENLISTED END STRENGTHS

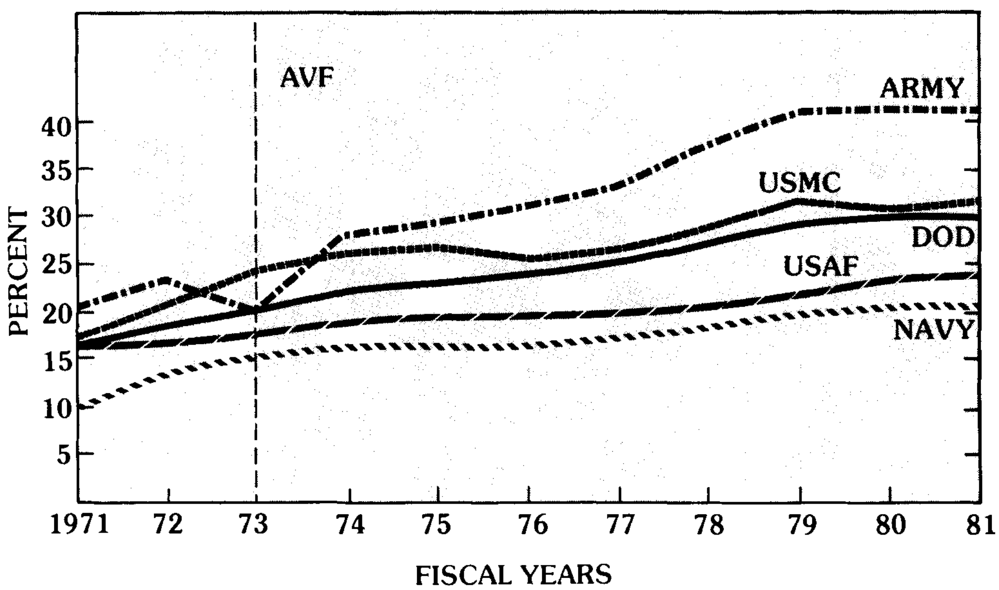
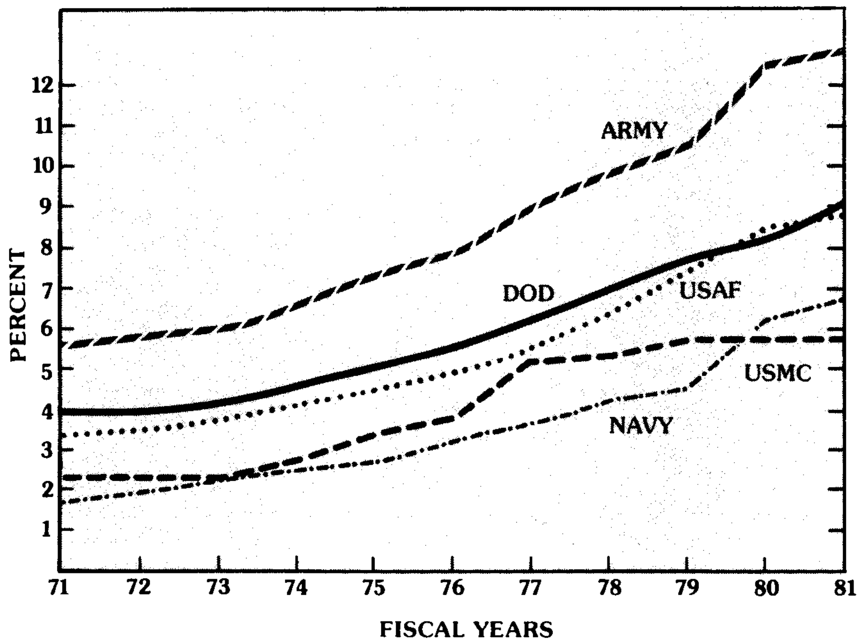


CHART III.M.2

MINORITIES AS A PERCENTAGE OF ACTIVE DUTY OFFICER END STRENGTHS



(b) Selected Reserve Forces

The proportion of enlisted minorities in the Selected Reserve has continued to increase. In FY 1971, the enlisted minority content was less than four percent. In FY 1981, the content reached 21 percent of which 18 percent were black. The Army Reserve has the highest minority content with 31 percent; the Air National Guard, the lowest with 10 percent. Approximately 1.5 percent of the total Selected Reserve enlisted force are minority women; however, minority women make up 17.2 percent of all females in the enlisted force.

Minority officers make up six percent of the Selected Reserve officer force (four percent Black, two percent Other). The Naval Reserve has the highest percentage of minorities with nine percent; however, only one percent is black. The Air Force Reserve has the lowest minority content of three percent (two percent Black, one percent Other). Minority women make up nine-tenths of one percent of all officers in the Selected Reserve Force and 17.2 percent of all female officers. The percentage of minority officers in the Selected Reserve Forces has significantly increased since FY 1971, but still remains below our desired levels.

(2) Women in the Military

In the past 10 years, the numbers of women in the active force have increased from about 1.5 percent to approximately 8.8 percent. In FY 1980, the Department of Defense set FY 1986 aggregate goals for the Services at 233,600 enlisted women and 31,900 officers, or about 12.5 percent of the planned total DoD active duty end strength for FY 1986. This target participation level was based on equal opportunity considerations and the need for greater utilization of women to meet military manpower requirements associated with the AVF. The Services expressed varying degrees of concern about their ability to achieve the increases and the possible adverse effects they might have on mission capability. These concerns did not abate, and in 1981 all Services except the Navy began special reviews of gender-related programs and policies. The Navy has had a continuing review in this area. Of the special reviews, the Army's is the most comprehensive. It is being conducted by an ad hoc study group, and is scheduled for completion in mid-1982.

Because of the continuing concerns and the diverse Service efforts, I directed the Assistant Secretary of Defense for Manpower, Reserve Affairs, and Logistics in March 1981 to conduct a review with the Services of their female officer and enlisted accession and retention policies. The results of the review were published by the Defense Department in October 1981 in the Background Review -- Women in the Military. It reports on the accession and representation of active duty women over the past 10 years, their promotion rates, and individual Service program development methodologies. In an effort to provide a balanced perspective, data for both men and women were used wherever possible.

General conclusions from this review are: (1) in general, military women are doing an excellent job, (2) military women are an integral part of the entire manpower issue and should not be addressed in isolation from all other aspects of personnel management, and (3) since the understanding and evaluation of Service-unique issues is complex and difficult, more latitude should be given the Services in their management of women as a part of their total force with oversight exercised by OSD functional area managers. The review also looked at personnel management concerns such as performance, time lost from the job, sole parents, military couples, physical strength considerations, and initiatives designed to integrate women into the total force successfully. Attitudinal survey data, analyses of promotion rates, and various tests and evaluations conducted in the past, show that women individually perform their assigned tasks as well as men and generally perform in a work group as well as men, if properly led and trained.

As to the integration of men and women into successfully performing teams, initiatives must be continued to: (1) develop physical job standards and programs designed to test and assign individuals to skill areas based on their abilities to meet these standards; (2) ensure availability of adequate uniforms and equipment for women; and (3) conduct appropriate leadership and supervisory training to ensure both women and men experience a supportive job environment. These areas will continue to receive management attention and the application of resources.

While we can compile no overall summary of future programs until the Army announces the results of its policy review, we expect the total number of military women will continue to increase. The Defense Department will continue to develop and implement initiatives to better integrate these larger numbers of women into the military.

Military women are now playing and will continue to play an integral and vital role in our nation's defense. The large numbers of women being recruited by all Services substantiate their important contribution. In FY 1982, the Services will recruit over 40,000 women for active duty, a level we expect to continue over the next five years. We will continue to evaluate the accession levels for military women from all perspectives, including that of equal opportunity, which remains an important consideration in our program development.

(3) Defense Officer Personnel Management Act (DOPMA)

At the close of 1980, the Congress passed the Defense Officer Personnel Management Act (DOPMA) culminating over seven years of effort to bring about reform and modernization of laws governing the appointment, promotion, and tenure of active duty commissioned officers. This legislation, which became effective on September 15, 1981, provides, for the first time, a uniform system of management for commissioned officers in the Services. We appreciate the efforts of the Senate and House Armed Services Committees in working with us, since efforts began in 1973, to produce this legislation which enables the Services to manage equitably the career patterns of commissioned officers while at the same time meeting force requirements.

(4) General and Flag Officer Strengths

We are working on legislation for submission to Congress in CY 1982 to modernize and reform laws governing the strength requirements for general and flag officers. This legislation is a follow-on to initial changes in DOPMA that standardize general and flag officer tenure, promotion, and separate provisions in law, and legislation that was submitted last year that would repeal minimum grade requirements for certain general and flag officer positions in law. We expect this legislation to establish a permanent basis for justifying general and flag officer requirements, their accountability, and their relationship to civilian executive requirements in the Defense Department. We solicit your support in this much needed and long overdue effort.

(5) Financing Military Retirement Costs on an Accrual Basis

The Defense Department continues to urge consideration of proposed legislation to change the way the budget accounts for military retired pay. The budget now reflects only the annuity outlays for military people who have already retired. Under the proposed legislation, the budget would reflect the future retirement benefits accrued by military people still on active duty or reserve duty. This change is designed primarily to improve personnel management by focusing attention on retired pay costs that we can control. Providing this important management reform would not add any significant cost.

3. Conclusion

We intend the FY 1983 manpower program to insure that enough capable, trained men and women volunteers are available to meet our military strength and readiness requirements. The program makes full use of civilians to do essential jobs that do not require military people. I am certain that the implementation of this program will achieve the objectives we have set.

N. MOBILIZATION

1. Introduction

Mobilization is:

-- "The act of preparing for war or other emergencies through assembling and organizing national resources," and

-- "The process by which the Armed Forces or part of them are brought to a state of readiness for war or other national emergency. This includes activating all or part of the Reserve Components as well as assembling and organizing personnel, supplies, and materiel."

This Administration has stressed the importance it places on improving our plans and capability to respond to worldwide crisis situations. Mobilization is critical to our ability to respond to any emergency or crisis.

During the past year, we have improved our mobilization planning processes, increased interagency communications and coordination, and developed solutions to specific resource problems. We have also increased the speed with which we process inductees and developed a system to compute our additional civilian manpower mobilization requirements. We continue to solve problems identified in previous mobilization exercises and will test these solutions in a new series of exercises.

2. Mobilization Planning

a. DoD Master Mobilization Plan

The complexity and magnitude of the mobilization process dictate that sound planning is essential for success. The DoD Master Mobilization Plan (MMP) identifies mobilization responsibilities and describes the related tasks to be performed both during peacetime preparation for a crisis and during mobilization. Its fundamental purpose is to provide the framework for making mobilization decisions and managing the mobilization process.

We have revised and expanded previously published versions of the MMP. Additions include guidance on mobilization policy, information on the legal basis for mobilization actions, and action plans for making key mobilization decisions. During the coming year, we will continue to revise the MMP, develop detailed plans for executing various mobilization tasks, identify needed resources, and perform preliminary force expansion planning appropriate for a protracted multi-theater conflict.

b. DoD Crisis Management Planning

PROUD SPIRIT, a FY 1981 DoD exercise, tested our procedures for mobilization and deployment processes under the threat of imminent hostilities. An independent, senior-level evaluation team, familiar with Defense mobilization requirements, concluded, interalia, that the Office of the Secretary of Defense (OSD) should plan in advance the functions, responsibilities, authorities, procedures, and relationships inherent in a crisis management system.

We have taken the first steps to develop such a system by examining a major mobilization contingency and identifying its crisis management steps and responsibilities. During the coming year we plan to develop a tailorable crisis management organization, together with the requisite procedures and support systems, to assist OSD in managing crisis-related actions. We also plan to design and conduct an exercise of the organization and supporting systems.

c. DoD Resource Needs

In 1977-78 DoD developed the Wartime Manpower Program System (WARMAPS). WARMAPS is the DoD-wide source for time-phased wartime military manpower data. Originally, the system was developed as a program review tool. However, as we have used the data, its value in mobilization planning has also been demonstrated. Therefore, this year we are revising the WARMAPS governing instructions to emphasize its mobilization planning role.

The WARMAPS revision will also correct another deficiency identified during the PROUD SPIRIT exercise: the lack of adequate procedures for computing our civilian work force mobilization requirements and communicating those requirements to the other Federal agencies that would manage the national civilian work force mobilization. The revised directive:

-- clarifies the responsibilities of the OSD staff, the Military Departments, and the Defense Agencies for planning and executing civilian work force mobilization;

-- requires plans and detailed procedures to ensure both the DoD and the defense industrial base have adequate numbers of skilled civilian manpower in time of emergency and mobilization;

-- describes interagency responsibilities and activities in managing the national civilian work force;

-- outlines the national process for determining the priority and allocation of civilian manpower; and

-- provides emergency authority for selecting and hiring additional DoD civilians in a national emergency.

Exercise PROUD SPIRIT also identified the lack of adequate detailed estimates of civilian work force requirements by occupation and location. Furthermore, the Department of Labor did not have current emergency plans sufficiently in place to supply and manage the increased numbers of people required in the civilian work force during mobilization.

In an effort to solve these problems, the Secretary of Labor and I agreed to establish a co-chaired interagency task force to plan for the management of the civilian work force during mobilization. The Office of Personnel Management and the Federal Emergency Management Agency will also participate in this task force. The task force is conducting an investigation of the potential civilian work force issues which may arise in managing a variety of military installations and Defense-related industrial activities, e.g., prioritization of personnel in certain critical skills. The results of this investigation will be available later this year.

d. Federal Mobilization Planning

Both the PROUD SPIRIT exercise and recent peacetime emergencies underlined a serious shortcoming in federal emergency planning: the lack of capability to respond rapidly and effectively to wartime and major peacetime emergencies. To solve this problem, the President has established the Emergency Mobilization Preparedness Board (EMPB) chaired by his Assistant for National Security Affairs. The objective of the EMPB is to improve the nation's capability to respond appropriately and effectively to an emergency requiring mobilization of resources.

The EMPB has established 12 Working Groups to address selected areas. DoD is a member of 10 Working Groups and chairs two.

My Assistant Secretary for Manpower, Reserve Affairs and Logistics is the Chairman of the Military Mobilization Working Group with representatives from eight other Federal agencies. The mission of this working group is to identify critical military mobilization preparedness actions and to formulate policy issues and recommendations, including budget changes, where the current lack of policy decisions impedes action. They have begun to develop the most likely scenarios, with DoD requirements for these scenarios, by revising existing contingency scenarios based on current Administration policies.

The Director of the Defense Communications Agency, serving in his dual capacity as Manager of the National Communications System, is the Chairman of the Emergency Communications Working Group with representatives from 13 other Federal agencies. Their mission is to identify critical issues affecting the emergency preparedness of the Nation's telecommunications and to formulate recommendations. To date, a sub-working group task force has developed comprehensive lists of issues which must be addressed and are prioritizing these for senior working group consideration.

e. <u>DoD Mobilization and Deployment Steering Group</u>

The purpose of the DoD Mobilization and Deployment Steering Group is to ensure a credible, responsive DoD capability for all levels of mobilization and force deployment. The Group, chaired by the Under Secretary of Defense (Policy), and composed of executive-level officials from the Office of the Secretary of Defense (OSD), the Military Departments, and the Military Services, meets monthly to promote major mobilization initiatives. Recent initiatives have dealt with DoD representation and goals for the EMPB; OSD crisis management organization; Exercise PETITE ROUNDTABLE follow-up; legislative and regulatory impact on mobilization; industrial responsiveness and preparedness improvements; and development of a basic approach to total mobilization planning within DoD. The Group plays a key role in DoD mobilization planning by focusing both high level attention and resources on significant mobilization problems.

3. <u>Selective Service System</u>

Inductees become an important source of mobilization manpower after they receive the legally-required minimum 12 weeks of training. Obviously, the sooner they begin training, the sooner they will be available. The Selective Service System has the responsibility for meeting the manpower requirements of our inductee reception schedule.

The Director of the Selective Service and I continue to coordinate efforts and procedures that will provide the required mobilization support. The Selective Service System has nearly completed its two year revitalization effort that will enable them to begin conscription rapidly during a crisis period. Furthermore, they have initiated and developed a successful program to nominate and train more than 10,500 volunteer Local Board members.

The Department of Defense and the Selective Service System opened a joint computer facility at Great Lakes Naval Training Station to handle peacetime processing of registration and military accession data and to control the mass data to be exchanged during mobilization. The joint computer center provides the Selective Service System with an improved capability to issue induction orders quickly to large numbers of registrants. This improvement, combined with peacetime registration, enables the Selective Service to provide the first inductee 13 days after mobilization and 100,000 inductees within 30 days of mobilization.

4. Mobilization Exercises

Our mobilization directives and plans were assessed and tested last year by reviewing previous mobilization exercise critique items and by participating in command post exercises. Exercise and evaluation of our mobilization plans and procedures, under simulated crisis conditions, significantly improves the quality of these plans and procedures. We will continue to stress the importance of repeated assessment of our plans in these exercises.

a. Remedial Action Projects

Past mobilization exercises revealed inadequacies and limitations in mobilization plans and procedures. Each deficiency was evaluated and assigned to the applicable agency for correction. Remedial actions for a majority of previously identified problems are underway. Improvements have been made in management and organization of mobilization plans and policy, industrial preparedness, medical support, military and civilian personnel, Reserve Components, logistics, and DoD/civil agency communications.

b. Exercise POTENT PUNCH

POTENT PUNCH was a JCS-sponsored Command Post Exercise (CPX) designed to examine our ability to reinforce Korea and to exercise the mobilization and deployment process from CONUS during a period of rising tension and simulated warfighting conditions. All major elements of DoD participated in the exercise. The results of the exercise helped us to:

-- determine the adequacy of existing mobilization plans, systems, and procedures;

-- determine the limitations and shortfalls of manpower and logistics procedures required to support mobilization and deployment; and

-- exercise and evaluate reserve mobilization procedures.

c. Exercise PETITE ROUNDTABLE

PETITE ROUNDTABLE 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 improve our national deterrent posture and to demonstrate our national resolve through increased readiness; and

-- reinforce our commitment to better mobilization planning.

DoD and the Selective Service System will conduct a joint exercise in May 1982, to evaluate the manpower accession process. The exercise will realistically evaluate the plans, procedures and systems to notify and process individuals through the accession system.

5. Mobilization Training Base

a. Improved Army Mobilization Plans

The Navy, Marine Corps, and Air Force do not anticipate any substantial problems in adjusting their training bases to handle projected mobilization training loads. In contrast, the Army faces a number of problems (as revealed in mobilization exercises) in conducting a balanced and timely reaction to the expanded training requirements during mobilization. The major constraints will be sufficient manpower, equipment, and facilities to train the increased number of trainees. The Army is identifying resource requirements to overcome these limitations.

b. Actions to Improve Army Capability

The FY 1982 budget contained a number of initiatives to enhance training capacity and has been followed by further initiatives in the FY 1983 Budget and accompanying Five-Year Defense Program. These include funds for 279,000 austere sets of individual clothing and equipment, and other equipment for training ranging from M-16 rifles to mortar carriers and howitzers. Funds are also included for maintenance of mobilization training equipment and for architectural work needed to prepare training sites for emergency construction. Additionally, the Army Mobilization and Operations Planning System has made significant progress in improving mobilization planning. A concept for CONUS-based replacement centers, located at major training centers, has been developed to process replacements to a theater of operations more efficiently.

To evaluate the material transportation system, the Army has developed a series of programs to ensure DoD requirements can be met during mobilization. Initiatives include continuing evaluation of ports, highways, railroads, and pipelines to optimize deployment capability. Other significant achievements include establishing a mobilization organization for water supply, improving installation outloading/receiving capability, planning the receipt and onward movement of conventional ammunition, and improving wartime asset redistribution.

We plan mobilization-related initiatives to provide a national training center for Army and Marine Corps units to practice vessel outloading of unit equipment. Units will be trained at the Sealift National Training Center to reduce deployment time by compressing embarkation time on roll-on/roll-off ships.

The Army is developing plans to place aviation maintenance equipment in POMCUS stocks to enable one aviation repair depot to deploy to NATO in the early stages of mobilization. This depot would straddle the aviation pipeline to Europe, acting as a focal point for deploying and evacuating aircraft, and providing back-up aviation maintenance to the Army in Europe.

c. Resources

We have included the following funds in this year's budget to improve the Army's ability to expand its training base during mobilization.

TABLE III.N.1

Funds to Improve Army Mobilization Base Capacity
($ Millions)

FY 1983	FY 1984	FY 1985	FY 1986	FY 1987
23.7	23.7	138.3	88.4	5.5

6. Conclusion

During the past year, we have made significant progress in our ability to mobilize rapidly. This progress is encouraging, but much work remains to be accomplished, particularly in interagency planning and preparedness. I expect the Military Mobilization Working Group to supply the needed, high-level focus to this effort. We will continue to improve and refine our mobilization plans, procedures, and systems as we evaluate these improvements in mobilization exercises.

O. Industrial Responsiveness

1. Introduction

The proclamation by the President to revitalize the U.S. economy and strengthen our national defense has breathed new life into a vital element of our national security by surfacing, for public scrutiny, the serious decline in our economic base and our leadership in the industrialized world. This vital element is our industrial base and the historic dependence we have placed on it in projecting our national strength. Our deficiencies in this area are clearly recognized and a consensus exists on the need for aggressive programs to restore the health and vitality of the American economy and to ensure the adequacy of our military strength for the 1980s and beyond.

Congress documented its concerns last year in a special report entitled: "The Ailing Defense Industrial Base: Unready for Crisis," prepared by the House Committee on Armed Services, which, as part of numerous findings, concluded that "the defense industrial base has deteriorated and is in danger of further deterioration." Although some of the problems pointed out in the Committee Report (bottlenecks and schedule delays) have abated, problems which remain in the defense industry are, in fact, a sub-set of our overall economic industrial problems. Our approach to the defense industrial base problems is, therefore, consistent with President Reagan's overall program to revitalize our economy and strengthen our national defense. We are concerned that:

- We are becoming increasingly dependent on imports of many scarce natural resources such as cobalt and rutile that are vital for defense. Some of our laws restrict us from sampling or exploring to determine if sources of scarce natural resources are available on U.S. public lands.

- Our vital strategic and critical material stockpiles are out of balance--many materials are excess to requirements and several are below inventory goals.

- Productivity in defense-supporting industries is too low. The United States ranks last in the rate of increase in productivity behind all other major industrialized nations, although total U.S. productivity per worker is still the highest in the world.

- Compared to other business, defense contracting is viewed by business as less stable, less predictable, and thus less attractive than commerical business.

-- There are potential shortages of some types of engineers, technicians, and skilled blue collar workers.

-- Defense industry has limited surge or rapid mobilization capability below the prime contractor level.

-- Supply constraints exist in some critical areas, e.g., forgings, large castings, bearings, etc.

2. Program Description and Status

In response to the decline in our industrial base we have developed a Department of Defense Action Plan for Improvement of Industrial Responsiveness. The action plan is structured to identify the problems, define our objectives, and set forth our ongoing and planned actions in three major areas. These areas include the National Resources Base, Defense Acquisition Process, and the Industrial Preparedness Program. It is not intended to replace or to substitute for Administration programs aimed at improving the American economy generally, nor is it meant to usurp private initiative in this area. National Resource Base objectives are to overcome near-term materials shortages and leadtime problems, improve self-sufficiency in critical raw materials, obtain sufficient skilled labor to meet the needs of industry, and improve industrial productivity.

Defense Acquisition Process objectives (discussed in detail in Part III.J) are:

-- to reduce acquisition cost;

-- to reduce acquisition time;

-- to increase program stability; and

-- to ensure coordination of acquisition systems decisions with industrial preparedness and planning, programming, and budgeting system (PPBS) decisions.

Industrial Preparedness objectives are:

-- to create an organizational environment conducive to industrial preparedness planning and mobilization; and

-- to maintain a defense industrial base which is responsive to surge and mobilization needs.

The following represent a few of the specific steps we have taken to enhance our ability to accomplish these objectives:

a. The Acquisition Process

In April 1981, we concluded an acquisition process study and are now aggressively implementing 32 recommendations and decisions for improvement of the acquisition process. This is referred to as the "DoD Acquisition Improvement Program;" the status and detailed description is contained in Part III.J.

b. The Defense Production Act

The Defense Production Act is the sole authority for programs specifically directed toward maintaining the national defense industrial base. For 30 years, we have relied on this Act to maintain ongoing defense contracting and preparedness programs to support our national security objectives. Using the Title I authorities provided, we have reduced the adverse impact on our program schedules that occur during periodic fluctuations of the business cycle and in periods of material shortage. Our objective is to maintain stable weapon system delivery schedules.

c. National Defense Stockpile

The purpose of the stockpile is to ensure that our Government will have the necessary raw materials available to support military requirements and the basic civilian economy during war.

(1) Critical Raw Material Status

Under the National Strategic and Critical Materials Policy, R&D Act of 1980 (P.L. 96-479), we are assessing our raw materials situation. In March 1981, the President approved the first National Defense Stockpile purchase program in more than 20 years, beginning with $100 million of purchases of which $70 million is for cobalt. At the same time, the President indicated additional purchases would be made in the future as revenues from sales of excess materials accumulated in the stockpile fund.

(2) Foreign Dependence

Although we are dependent upon foreign sources for many raw materials, we are also experiencing a significant decrease in domestic capabilities to process and manufacture industrial products. We are exploring methods for restoring a domestic industrial capability sufficient to maintain national security.

d. Manufacturing Technology Program

The Manufacturing Technology Program is a broad based program designed to improve the productivity and responsiveness of the U.S. industrial base. Investments made by this predominately procurement funded program have resulted in factory floor applications of productivity enhancing technology and will continue to receive priority emphasis.

e. Industrial Base Guidance and Funding

A key segment of our overall effort has involved the development of new defense guidance and funding support. The focus of guidance is on reducing lead-time and improving productivity by:

-- isolating key bottlenecks and constraints that are causing long procurement lead-times;

-- identifying resource requirements to reduce and/or eliminate bottlenecks; and

-- examining various industrial preparedness funding alternatives for prioritizing the allocation of resources.

The Services are taking steps to improve all areas of the Industrial Preparedness Program. A comparison of the current Five-Year Defense Program with the previous Five-Year Defense Program, reveals a 43 percent increase.

f. Government/Industry Relations

An explicit part of our overall approach to revitalizing our industrial base is to coordinate our efforts more closely with industry. We in the public sector have no chance of improving the acquisition system without working side-by-side with the private sector. For this reason we have placed a high priority on improved relations between the Defense Department and its contractors. In this regard, we are scheduling meetings with industry leaders and officials of state and local governments to insure clear understanding of the need to revitalize our industry; to publicize efforts taken by DoD to achieve this goal; to obtain industry reaction to DoD efforts; and to solicit industry assistance.

In August, the Deputy Secretary of Defense hosted a special meeting of the U.S Conference of Mayors. Mayors of 13 major cities attended the meeting which was keyed to establishing a critical communication link with the cities as part of this Administration's effort to revitalize American industry.

To assist us in communicating potential Defense requirements to industry, we have developed a Defense Economic Impact Modeling System to provide analysis for industry's use in planning to meet the demands of the Defense acquisition programs.

3. Conclusions

During the past year there have been substantial changes in philosophy and policy with respect to acquisition of defense items; the burden now is to assure that these changes are implemented to the fullest extent.

We are concerned about the defense industry--especially with respect to the fundamental strength of the base--its productivity, the quality and reliability of its products, leadtime, diminishing manufacturing sources, and its ability to respond to normal demands as well as surge and protracted emergency requirements. We believe, with the initiatives being pursued and the progress made so far, that U.S. industry can produce the planned increases in defense spending over the next few years. We must, however, continue to closely monitor the areas which have adversely affected production and meet those challenges as they arise. We believe that with prudent attention, and joint commitment by both government and industry, we will succeed.

P. MANAGEMENT

1. Introduction

The first management priority of the Department of Defense is to maintain modern, effective, and balanced military forces that are able to deter and, if deterrence fails, to defeat any attacks on the United States and its vital interests. Our second priority is to accomplish our assigned missions as efficiently as we can. Accordingly, organization and management reform are a matter of continuing priority within the Department. We have pursued and will continue to press management improvement action that will enable us to strengthen our military capabilities at the lowest possible cost by making our operations more efficient, thereby getting more for each dollar we spend.

The Defense Management System which we have initiated is designed to encompass five important objectives:

-- it will state the national military strategy necessary to support our foreign policy and provide security for our people,

-- it will help us achieve the integrated and balanced military forces determined to be necessary to accomplish our stated foreign and national security policies,

-- it will help ensure that we are ready to deter aggression or to succeed if the use of military force is required,

-- it will provide the framework necessary to manage DoD resources efficiently and to insure successful mission accomplishment consistent with national resource limitations, and

-- it will provide information to DoD management to insure that the role of military power is properly considered in the formulation of national objectives.

2. Major Management Systems Improvements

During this past year, we have acted to improve major management activities which we think will substantially improve our ability to manage the Department's programs and resources more efficiently. These initiatives include: major improvements to the Planning, Programming and Budgeting System (PPBS); a complete overhaul and streamlining of the defense acquisition process; strengthening our review and oversight system which will be the responsibility of the new Assistant to the Secretary of Defense (Review and Oversight); and establishment of the DoD Council on Integrity and Management Improvement. Other actions include continuing organizational improvements; improving program efficiencies; and implementing cost reduction actions.

Planning, Programming, and Budgeting System (PPBS)

The PPBS was originally designed to provide an integrated, participatory decision process for managing DoD. However, within recent years, PPBS has evidenced the need for change to insure its responsiveness to changing national security requirements and the internal management imperatives of the Department. By 1981:

-- the system had grown top heavy and congested with paperwork and detail;

-- planning was incompatible with fiscal realities;

-- there was an overemphasis on programming to the exclusion of strategic planning;

-- a proliferation of structures and data bases were working against the smooth flow of the PPBS cycle;

-- professional military advice on program and budget decisions was not well integrated into the PPB System; and

-- the system was not meeting objectives in the most effective and economical manner.

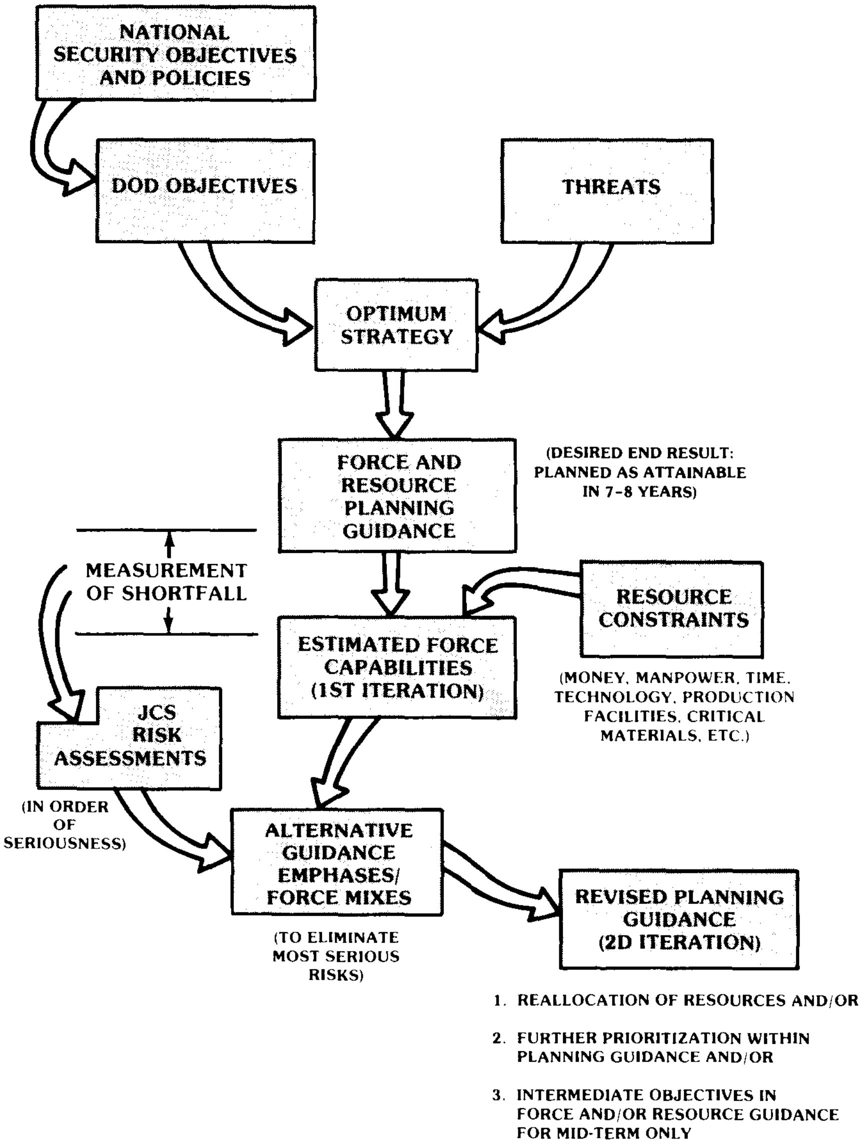
We initiated a comprehensive review of PPBS to improve, on the one hand, the match between our policies, strategy, and military capabilities; and, on the other, to streamline our decisionmaking process. Following careful study, both within and outside the Department, we have initiated a revised system, which incorporates the following features:

(1) A revitalized planning process. The most distinctive feature of the new DoD planning process (Chart III.P.1) is an increased emphasis on front-end planning through which ensuing programs and budgets are guided toward the goals and objectives of our strategic plans. The strengthened planning process is led by the Under Secretary of Defense for Policy. The new process enhances the participation of top OSD staff managers and Service line-managers, and ensures that the military advice of the Joint Chiefs of Staff and the Commanders of the Unified and Specified Commands is brought to bear throughout the process.

(2) Streamlining the program review process. During FY 1981, we established a goal of reducing the documentation associated with program review by 50 percent. We have met and exceeded that goal. Experience this far demonstrates that the reduced documentation provides adequate information to accomplish the major priority and cross-Service reviews that we require. Budget documentation has also been reduced and Congressional committees

CHART III.P.1

(U) THE DEFENSE PLANNING PROCESS



have been asked to review the paperwork requirements they have imposed.

(3) The Secretary's Performance Review. In recognition of the need for closely monitoring program execution, we have established the Secretary's Performance Review. During the review, we focus senior leadership attention on the key problems, issues, and programs through a series of regularly scheduled top-level review sessions. These meetings emphasize measuring progress toward important defense objectives, identifying problems that need to be resolved, and determining ways that performance can be improved. Among the programs reviewed to date are the Army's manpower program, the Navy's sealift program, the TRIDENT submarine missile program, and the Air Forces's airlift, readiness and sustainability programs.

(4) Clarifying management responsibilities. We emphasize centralized control of executive policy development and decentralized policy execution. The Secretary, the Chairman of the Joint Chiefs of Staff, and the Service Secretaries now concentrate on major policy decisions. The Services have been made responsible for the development and execution of the day-to-day management of the resources under their control. The OSD staff provides the technical cross-Service and major mission analyses necessary to integrate the capabilities of the Services and to meet the objectives identified by the President and Congress.

(5) Participatory Management. We draw upon the complete resources of the Department to encourage the full exchange of ideas as we formulate policy and design programs. To this end, we have enlarged the Defense Resources Board (DRB), the principal governing body of the Department's program review process, to include the Service Secretaries, and when appropriate, the CINCs. At the same time, we have directed that only major issues be raised before the DRB. Lesser issues are decided outside the DRB forum by the Services and the Office of the Secretary of Defense.

Taken together, these modifications are helping us to implement the efficiencies and economies we are all seeking in defense spending.

b. Streamlining the Defense Acquisition Process

The basis of our acquisition philosophy is drawn from PPBS and is reflected in several key objectives:

-- to improve long-range planning so that the Services, the Congress, and the contractors will know as far in advance as possible the full scope of each program;

-- to delegate responsibility, authority, and accountability to the program manager and to reverse the insidious tendency towards micro-management from above and from outside;

-- to give more serious attention to the improvement of military capability by using time-tested systems;

-- to achieve more economic production rates, which save money for us over the long run and make life more predictable, and thus defense business more attractive for our contractors and potential contractors. We must do this to restore a healthy, strong industrial base for military orders;

-- to use realistic cost, budget, and funding figures so that both we and the Congress understand early what the total life-cycle costs of a program will be;

-- to consider as a prime factor early in the decision process the combat readiness of a proposed weapon system once deployed, again recalling the primary objective: to be prepared to carry out our missions of deterrence and defense at any given moment; and

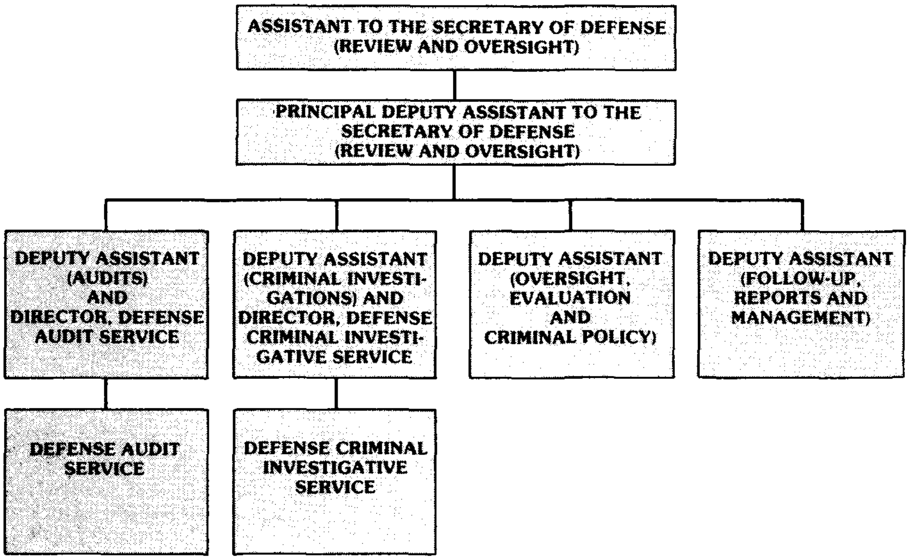
-- to do all the things necessary to rebuild and maintain a strong, flexible industrial base, both for peacetime production and for wartime surge and mobilization.

We have initiated 32 specific actions to reduce acquisition costs, shorten acquisition lead-time, improve weapons support and readiness, and to refine the acquisition process. Overall responsibility for translating these actions into implementable direction, and for insuring that management has visibility of actions taken, has been assigned to the Under Secretary of Defense (Research and Engineering) (USD[R&E]). An implementation steering group composed of representatives from the three Military Departments and OSD staff offices provides guidance and advice to the USD(R&E). We will continue to build upon this effort in future months.

C. Review and Oversight

CHART III.P.2

OFFICE OF THE ASSISTANT TO THE SECRETARY OF DEFENSE (REVIEW AND OVERSIGHT)



There is continuing need to combat fraud, waste, abuse, and mismanagement in the Department of Defense through careful audit, inspection, and evaluation of programs and operations. Accordingly, we have strengthened our anti-fraud and waste efforts and audit follow-up systems by establishing a new position, the Assistant to the Secretary of Defense (Review & Oversight) (ATSD[R&O]) (Chart III.P.2). This official is responsible for coordinating all activities within the Department concerned with the elimination of fraud, waste, and mismanagement. In carrying out these responsibilities, the ATSD(R&O):

-- develops policy, monitors, and evaluates program performance and provides guidance to all DoD activities on matters regarding criminal investigations programs;

-- conducts criminal investigations, as required, in the Office of the Secretary of Defense, the Organization of the Joint Chiefs of Staff, and the Defense Agencies;

-- monitors and evaluates the adherence of DoD auditors to internal audit, contract audit, and internal review policies and procedures; identifies areas where DoD components are not in compliance with DoD policies and programs, and recommends specific corrective action to the component head;

-- develops policy, evaluates program performance, and monitors follow-up actions taken by all DoD Components in response to General Accounting Office audits, internal audits and internal review reports; and evaluates whether audit or review recommendations could, if implemented, improve the effectiveness and efficiency of DoD programs and operations;

-- advises me of incidents involving fraud, waste, and mismanagement in DoD programs and operations that require my personal attention;

-- exercises authority, direction, and control over the Defense Audit Service (DAS) and the Defense Criminal Investigative Service (DCIS); and

-- operates the DoD Hotline for use as an information source in detecting fraud, waste, and mismanagement in DoD programs.

The ATSD(R&O) is working closely with the Service Audit Agencies, the Inspectors General, the Auditors General, the criminal investigation agencies, and the 16 civilian-agency Inspectors General. Through the use of these resources, the ATSD(R&O) has been and will continue to examine DoD programs and operations in the coming months. We expect these efforts to result in practical ways to improve management and reduce instances of fraud, waste, and abuse.

Within the past few months, we have focused significant attention on improving audit follow-up. We recently issued two directives on audit follow-up and began aggressive actions to resolve all disputed audit findings and recommendations within a six month period of the date of the final audit report. As of September 30, 1981, virtually all of the older findings and recommendations had been resolved throughout the DoD. We are implementing a computerized follow-up system to track General Accounting Office and Defense Audit Service recommendations to implementation. We are overseeing the development of compatible tracking and follow-up systems maintained by the Military Departments for their internal audits and reviews. We are also initiating a resolution, tracking and reporting system for the approximately 60,000 contract audit reports that are issued annually by the Defense Contract Audit Agency.

d. <u>DoD Council on Integrity and Management Improvement</u>

In an effort to expand the momentum of management improvement that was initiated with the announcement of the 32 initiatives to improve the acquisition process, we have established the DoD Council on Integrity and Management Improvement.

The objectives of the Council are to:

-- explore all areas of management improvement which can be identified in the Department of Defense and to pursue their timely implementation;

-- promulgate the results of review and oversight activities of the Department of Defense to assure that recommendations of the inspection, audit, and investigation activities of the Department to improve integrity, economy, and efficiency are recognized and implemented;

-- act as a forum to exchange information on what is being done to improve Defense operations and share such information; and

-- maintain a liaison with the President's Council on Integrity and Efficiency through the ATSD(R&O).

3. Organization of the Office of the Secretary of Defense

After careful study of the management structure, we have instituted a number of changes to improve the organizational responsiveness to current program priorities and management objectives. Chart III.P.3 displays the incorporation of these changes.

a. Legislative Affairs

DoD policies, programs, and budget priorities are undergoing a major revitalization and reorientation. Because the success of this effort hinges so substantially on establishing and maintaining positive and effective working relationships with Congress, we have upgraded the Assistant to the Secretary of Defense (Legislative Affairs) (ATSD[LA]) to Assistant Secretary of Defense (ASD) status. This action returned the position to the status it held prior to 1977. To provide the necessary ASD authorization, the Assistant Secretary of Defense (Program Analysis and Evaluation) (ASD[PA&E]) was redesignated as Director (PA&E). The functional responsiblities of the Director (PA&E) otherwise remain unchanged. The Director will continue to report directly to the Secretary and work closely with him on all program matters.

b. International Security Policy

In order to improve policy planning within DoD, coordination with other agencies, and the integration of defense policy and plans with overall national security objectives, the position of Assistant Secretary of Defense (International Security Policy) (ASD[ISP]) was established. To provide the necessary ASD authorization, the Assistant Secretary of Defense (Communications, Command, Control, and Intelligence) has been redesignated as a Deputy Under Secretary of Defense. He will report to the Under Secretary of Defense (Research and Engineering). The position's functional responsibilities remain unchanged.

c. Manpower, Reserve Affairs, and Logistics

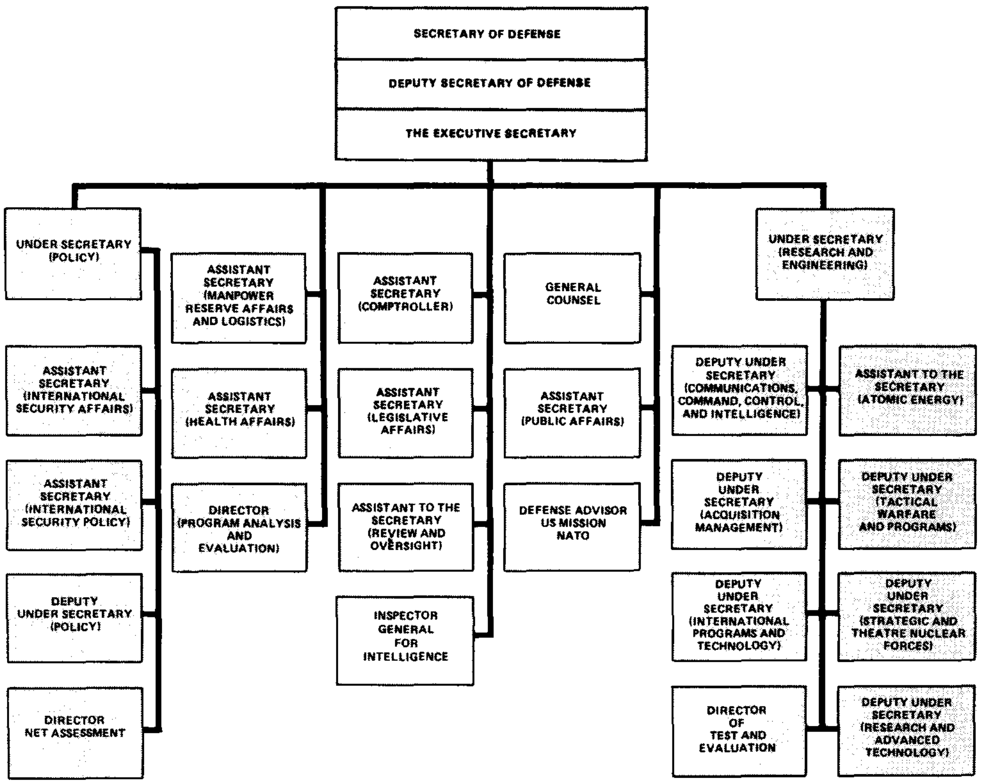
The Office of the Assistant Secretary of Defense (Manpower, Reserve Affairs, and Logistics) (ASD [MRA&L]) has been restructured to improve span of control and to promote organization coherence. The new structure encourages a more comprehensive, analytic policy focus on the major programs of the All Volunteer Force and on improving manpower and materiel readiness and sustainability. In addition, the organization changes are consistent with our philosophy of returning more authority and responsibility to the Service Secretaries. Our ability to engage in long-term planning and analysis in support of an expanded Defense program is thus enhanced. This action has reduced the number of Deputy Assistant Secretaries of Defense within the Office of the ASD (MRA&L) from nine to seven.

d. Restoration of Assistant Secretary Positions

We have asked the Congress to restore the five Assistant Secretary positions eliminated by a

CHART III.P.3

(U) OFFICE OF THE SECRETARY OF DEFENSE



reorganization order of the previous Administration. Although suited to the Defense policies of the time, this action has reduced the flexibility of the Department in adapting the Office of the Secretary of Defense and the Service Secretaries to changes in Defense priorities, policies, and program emphasis. During deliberations on the DoD proposal, the House Armed Services Committee decided to add a sixth position and designate it as the Assistant Secretary of Defense for Communications, Command, Control, and Intelligence (ASD[C^3I]).

In addition to the ASD(C^3I) position, current planning calls for using two Assistant Secretary of Defense positions to strengthen the Office of the Under Secretary of Defense (R&E). The position of Assistant Secretary of Defense for Development and Support will be established to provide increased management attention to the development of those military capabilities represented by deployed systems and equipment, and to focus on acquisition objectives to meet DoD needs, not solely Service needs. He will also serve as the Principal Deputy Under Secretary of Defense for Research and Engineering.

To insure the maintenance of a superior U.S. technology base vis-a-vis the USSR and to improve our approach in selecting the right technology programs to help achieve and maintain a qualitative lead in deployed systems, the position of Assistant Secretary of Defense for Research and Technology will be established. He will also serve as the Director, Defense Advanced Research Projects Agency (DARPA) to improve the integration of DARPA programs with Service programs.

Three of the requested Assistant Secretary positions will be used to streamline the organizational structure and enhance management of the Service Secretariats.

Approval of the legislation required to implement the above changes would bring the number of DoD executive level positions to 36. However, the FY 1982 DoD Appropriations Bill limits the use of DoD appropriations to fund 35 executive level positions, thus leaving a shortfall of one in funding for all six of the Assistant Secretary positions discussed above. We are hopeful for the favorable reconciliation of this problem by the Congress.

4. Program Improvements

a. Communications, Command, Control, and Intelligence (C^3I)

In an effort to improve the integration of C^3I with the weapon systems that they support, several management initiatives have been undertaken by the USD(R&E). First, staff members assigned to DUSD(C^3I) have been attached to the two warfare directorates in OUSDRE (i.e., DUSD (Strategic and Intermediate Range Nuclear Forces) and DUSD (Tactical Warfare Programs). These staff members function as C^3I systems architects who assist the resident deputates by integrating C^3I concepts, technology, and procedures into the design and acquisition of weapons systems. Second, within DUSD (C^3I), an Assistant Deputy Under Secretary of Defense for Systems Integration (ADUSD [SI]) has been established to take a total systems perspective of the C^3I--weapon system. That office will insure that mission area plans and system architectures are balanced and consistent with the needs of all users and oversee the implementation of investment strategies in the PPBS cycle.

New initiatives are being pursued to realize further program improvements. As examples, the rate of acquisition of previously developed communications equipment is being accelerated, e.g., the Army Tactical Communications Program and manpower requirements are being reduced through automation and improvements in equipment reliability and maintainability, e.g., the base and support communications program. In addition, in the area of electronic warfare and C^3 countermeasures, efforts are underway to procure sufficient quantities of equipment at economical rates to equip the tactical forces, e.g., self-protection jammers, and to obtain a balanced mix of countermeasures capabilities.

b. Security Assistance

As the responsible agency within DoD for security assistance and arms transfer management matters, the Defense Security Assistance Agency (DSAA) is pursuing several new initiatives for improving its ability to manage programs in these vital areas. Of particular importance is the establishment of the Advanced Procurement Planning System for Security Assistance (APPSSA) which is comprised of two essential components: the Special Defense Acquisition Fund (SDAF) and the Priority Defense Items Information System (PDIIS). The SDAF is a special account for procuring military equipment in anticipation of the requirements of allied and friendly nations. Among other things, its establishment will promote U.S. force readiness by minimizing the need for diversions from production and the drawdown of U.S. Service stocks. The PDIIS will provide information on sales, potential sales, production schedules, and logistics requirements for priority defense items. By allowing us to anticipate foreign military sales requests, the PDIIS and SDAF will facilitate the integration of procurement for DoD requirements with that for security assistance, thus cutting costs and lead times and resulting in smoother production runs.

c. Health and Medical

Health care management initiatives undertaken during the past year include improvements in the DoD wartime medical posture, including the Civilian-Military Contingency Hospital System (CMCHS) as explained previously in Part III.L., and further development of the Defense Enrollment/Eligibility Reporting System (DEERS), the Uniform Chart of Accounts, and the Uniform Staffing Methodology to more accurately measure and allocate health resources.

DEERS is a major effort currently underway to improve the management of DoD health resources and to help reduce waste, fraud, and abuse of Uniformed Services benefits. Through the compilation of demographic data on the beneficiary population, DEERS will provide a mechanism for verifying eligibility for benefits. Intensive enrollment of the beneficiary population is ongoing with the CONUS data base expected to be completed by FY 1982 and worldwide by FY 1983. Over six million people have been enrolled, more than half of the projected total.

(2) Uniform Chart of Accounts(UCA)/Uniform Staffing Methodology (USM). These related systems offer further evidence of our continuing effort to improve the management and allocation of our health care resources. The UCA provides a common measurement and reporting standard through the use of uniform cost and work centers. The USM applies similar uniformity to manpower allocation procedures. When fully operational, both systems will provide managers with productivity, cost, and workload data needed to effectively allocate medical resources.

d. Depot Maintenance Management

We have directed the establishment of a DoD Aeronautical Depot Maintenance Task Force to oversee our continuing efforts towards improving the capability and efficiency of both organic and contractual depot maintenance for aeronautical systems. The task force will assure that individual and joint service plans, and their implementation, adequately and promptly address mobilization requirements and capabilities, modernization of plant and equipment, full use of interservice capabilities, establishment of common management information systems, elimination of excess depot capacity, and an appropriate balance between organic and contract sources of repair.

e. Supply Management

In supply management, we are transferring wholesale inventory management responsibility for 200,000 consumable items from the separate Military Departments to the Defense Logistics Agency, where they will be centrally managed. This transfer is expected to enhance the management of consumable items and generate substantial savings. Further savings will be realized if follow-on reviews indicate that additional items should be similarly transferred.

f. Consolidation of Land and Ocean Transportation

We have approved actions which will culminate in the consolidation of the Military Traffic Management Command (MTMC) and the Military Sealift Command (MSC) into a single organization. This action represents a major opportunity for reducing logistics support costs while improving the wartime readiness of our deployment and transportation management systems.

g. Consolidation of Personal Property Shipping

We have approved the consolidation of 23 Personal Property Shipping Offices throughout the United States. This action will provide better service in shipping military members' personal property at reduced costs.

h. Civil Service Reform Implementation

We will continue to press our efforts to make full use of the opportunities afforded by the Civil Service Reform Act to improve the efficiency of Defense operations. The "pay for performance" features built into the Senior Executive Service and Merit Pay systems should stimulate management improvements. New performance appraisal systems for non-supervisory employees are now fully implemented and should contribute through better employee understanding of job requirements and less burdensome procedures for dealing with non-performers.

Implementation of the labor relations provisions of the Reform Act has proceeded without major incident and relationships with the labor organizations that represent nearly two-thirds of the Defense civilian workforce are generally constructive. We are concerned, however, about the rising costs of the program, particularly those stemming from Reform Act provisions dealing with the negotiation process and with the investigation and litigation of unfair labor practice allegations. We will continue to seek means of controlling and ameliorating this problem.

i. DoD Regulatory Reform

Several new initiatives have been implemented which broaden DoD's participation in the Government's overall regulatory reform activities including:

-- a joint DoD/OMB review of the Department's Regulatory Agenda prior to publication for public comment; and

-- participation in the Vice President's program for reviewing existing regulations which have significant impact upon the public.

In addition, the Department is continuing its efforts to implement the requirements of Public Law 96-511, "The Paperwork Reduction Act of 1980," which was enacted to control and improve the management of information resources throughout the Executive Branch of Government. The Department of Defense has designated the Assistant Secretary of Defense (Comptroller) to coordinate all activities required under the Act and is establishing an Information Resources Management Council (IRMC) which will be responsible for accomplishing the major policy objectives of the program; developing a DoD-wide series of Implementation Plans; and preparing a series of Triennial Review Schedules by each of the major components.

j. Credit Management and Debt Collection

We have undertaken an aggressive program to strengthen debt collection practices. We believe that the initiatives now in progress will produce significant improvements. We have highlighted within DoD the high level interest in credit management of the President and the Congress and we have designated the Assistant Secretary of Defense (Comptroller) as the DoD official responsible for credit management in the Department. The Military Departments and Defense Agencies have also designated officials to share credit management responsibility. We are pushing ahead to develop:

- -- uniform definitions and procedures for identifying, recording, aging, reporting, and writing off receivables;
- -- points of diminishing return criteria; and
- -- procedures for charging interest, using collection agencies, and reporting delinquents to credit bureaus.

Our detailed plan for implementing this program has been submitted to OMB, the government-wide monitor of this program.

k. Continuing Accounting Systems Approval

The Budget and Accounting Act of 1950 requires the submission of agency accounting systems to the U.S. Comptroller General for his approval.

There are currently 105 systems on the DoD inventory of accounting systems of which 80 have been approved by the Comptroller General. Of the 25 remaining systems, 12 are under long-term development; i.e., the design completion date is more than two years away.

The Comptroller General in his annual report to the Congress on the "Status, Progress, and Problems In Federal Agency Accounting During Fiscal 1980" noted that the Department of Defense had made good progress in obtaining approval of its accounting systems. In 1981, we have seven accounting systems and three major components of the Army's Program Budget and Accounting System approved. We are continuing to push ahead with the approval program and plan to have six additional systems approved by the end of FY 1982.

5. Efficiencies and Economies

In previous announcements and in testimony before the Congress, we have indicated that the additions requested for vital improvements in our Defense posture would be partially offset by savings resulting from improvements in our operations. In fact, last March we projected savings in the six fiscal years 1981-1986, totaling $31 billion. More than $17 billion was attributed to civilian and retirement pay restraints and changes in economic assumptions relative to policies of the previous Administration. This pay adjustment figure has now risen to over $23 billion with another $7 billion to be saved in FY 1987.

This difference is due to the somewhat lower pay raise assumptions than were previously forecast reflecting government-wide policy and new estimates of where the economy will take salary and wages. The balance of savings will come from implementing the many management improvements we have undertaken, which were addressed above.

Following is a summary of major categories in which savings and cost avoidances have been accomplished in FY 1981 and FY 1982 programs as a result of the transition to the present Administration. Also included is a projection of these savings extended to the program years through FY 1987.

	($Millions)		
	FY 1981	FY 1982	Projected FY 1983-1987
Acquisition:			
Eliminate/Reduce Marginal Systems	12	292	6,207
Multiyear Contracting	15	20	1,080
Economic Production Rates	29	472	2,279
Productivity Enhancements	-8	34	323
Other Acquisition Improvements	121	523	3,902
	169	1,341	13,791
Operation:			
Eliminate/Reduce Marginal Programs	37	206	939
Logistics Improvements	63	32	807
Base Support Efficiencies	-	51	302
Reduce Administrative Overhead	78	408	2,603
Increased Productivity	42	45	885
Other Operation Improvements	40	199	1,355
	260	941	6,891

These savings/cost avoidance represent what has already been accomplished or is programmed. By far the largest economy has been possible in the area of procurement efficiencies. The largest potential for even further economy seems also to be in this area, where much is dependent on spending more in order to save more through economies of scale. Through a multiyear contracting approach to several of our major weapon systems, we have identified procurement savings of nearly $1.1 billion through FY 1987. Through restructuring of planned order quantities to the most economical rate, procurement savings on the order of $2.3 billion will be realized. Further savings of $1.4 billion are expected to result from restructuring, redefining and rescoping many programs to provide lower cost alternative programs. These and similar efforts will continue in order to meet even higher savings goals we have imposed on ourselves.

In the operations area, the greatest category of savings has been in the reduction of programs and activities contributing to the overhead expense of conducting business. A reduction in administrative overhead of $2.6 billion is made up primarily from curtailments in administrative travel, audiovisual activities, and the use of consulting and management services contracts. Over $.8 billion has been saved through management improvements in logistics activities such as the centralization of consumable items management, establishing a single manager for transportation, application of automated marking and reading symbology, travel management improvements and other similar logistics activities. Good progress is being made in identifying and consolidating base support functions on a geographical basis, rather than two or more bases in the same area maintaining separate base support organizations. Savings targets have been established and budgets and financial plans reduced over $200 million. Increased productivity and efficiency measures, including better utilization of computer and ADP capabilities and changes in advertising and recruitment methods, will result in savings of more than $800 million.

The Department is proceeding on a wide range of fronts to achieve the maximum economy and efficiency in the Defense programs. There is reason to be proud of progress made to this point but we recognize that more needs to be done, and are confident that this can be achieved.

6. Conclusion

We will continue to refine the management initiatives undertaken during the past year and explore new approaches to organization and management improvement that offer the potential for more effective performance of the defense mission and greater efficiency in the use of existing resources.

THE DEFENSE BUDGET

A. SUMMARY

The aggregate funding required to support the Defense program is presented below. Section B. of this Chapter places the funding data in historical context with charts showing Defense budget trends from FY 1965 to FY 1983. Price level assumptions and the out-year projections arising from those assumptions and program plans are presented in Sections C. and D. Real growth rates are tabled in Section E., and Section F. is devoted to an analysis of the FY 1981, FY 1982, and FY 1983 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. The final section portrays Defense in the context of the National economy.

TABLE IV.A.1

Department of Defense - Military Functions
($ Billions)

Current Year Dollars	FY 1981	FY 1982	FY 1983
Total Obligational Authority (TOA)	176.1	214.2	258.0
Budget Authority (BA)	178.4	214.1	257.5
Outlays	156.1	182.8	215.9
Constant FY 1983 Dollars			
Total Obligation Authority (TOA)	202.2	227.8	258.0
Budget Authority (BA)	204.8	227.6	257.5
Outlays	182.4	195.4	215.9

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. Less than three-quarters of FY 1983 outlays will result from FY 1983 budget authority; the remainder will come from budget authority provided in FY 1982 and earlier years.

B. DEFENSE BUDGET TRENDS: FY 1965 TO FY 1983

CHART IV.B.1

TOA AND OUTLAYS IN CURRENT YEAR DOLLARS ($ BILLIONS)

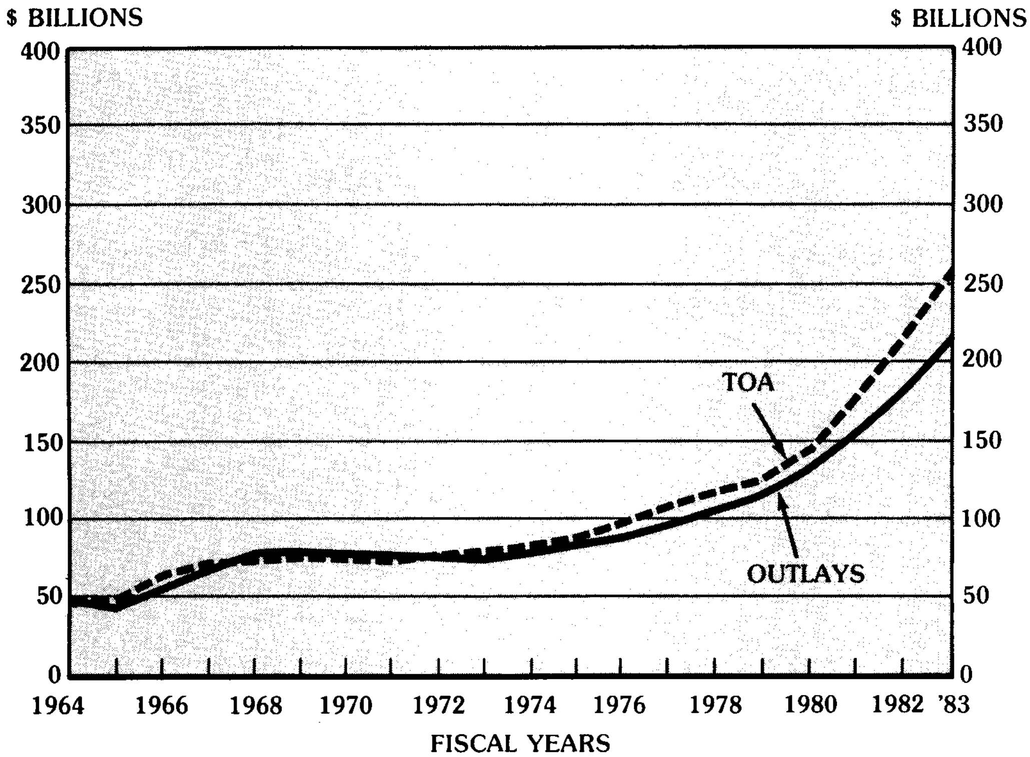
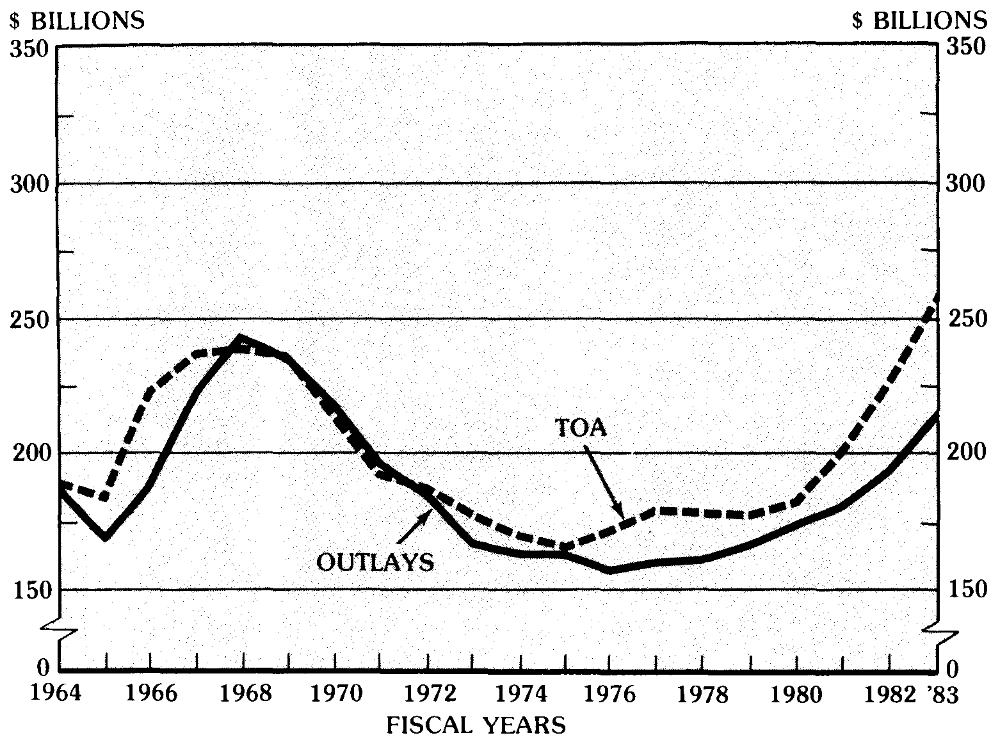


CHART IV.B.2

TOA AND OUTLAYS IN CONSTANT FY 1983 DOLLARS ($ BILLIONS)



C. PRICE LEVEL ASSUMPTIONS

Planning for future expenditure levels requires estimates of the future course of inflation. We prepare 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 for services and the Consumer Price Index (CPI). The CPI is used for the retired pay accounts and planned comparability pay increases are used for the military and civilian pay accounts. We then calculate the TOA rates and the composite outlay rates shown in Table IV.C.1. on the basis of the OMB guidance and the expenditure profiles characteristic of each account, e.g., Missile Procurement, Air Force.

TABLE IV.C.1

Price and Pay Raise Percentage Increases

	FY 81- FY 82	FY 82- FY 83	FY 83- FY 84	FY 84- FY 85	FY 85- FY 86	FY 86- FY 87
Military Pay	14.3	8.0	7.6	5.5	5.0	5.0
Other Military Personnel Expenses	9.2	7.0	5.1	4.7	4.5	4.4
TOTAL, Military Personnel	12.8	7.6	7.1	5.4	4.9	4.8
Civil Service	4.8	5.0	5.0	5.0	5.0	5.0
Wage Board	4.8	5.0	4.0	4.0	4.0	5.0
Foreign National Direct Hire	8.0	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	5.5	5.1	4.9	4.8	4.8	5.0
Military Retired Pay	6.6	6.5	4.3	3.3	2.9	2.9
Pay Composite	9.3	6.7	5.9	4.8	4.5	4.5
Industry Purchases:						
Outlays:						
Fuel	1.2	2.1	5.5	5.8	5.7	5.6
Non-Fuel	9.4	7.5	6.0	5.9	5.3	5.3
TOA:						
Fuel	1.2	2.1	5.5	5.8	5.7	5.6
Non-Fuel	7.7	6.4	5.8	5.5	5.4	5.2
Composite Total:	8.7	6.9	5.9	5.5	5.1	5.0
Outlays	8.0	6.3	5.8	5.3	5.1	5.0
TOA						

D. OUT-YEAR PROJECTIONS

The Defense budget projections in Table IV.D.1. are based on the purchase inflation and pay raise assumptions outlined in Section C.

Table IV.D.1

DoD Military Functions
($ in Billions)

	TOA	Outlays
FY 1982	214.2	182.8
FY 1983	258.0	215.9
FY 1984	285.5	247.0
FY 1985	331.7	285.5
FY 1986	367.6	324.0
FY 1987	400.8	356.0

E. Real Growth

By real growth we mean the positive or negative change after the effects of inflation are removed. Adjustments for inflation are made using indices constructed from actual or projected inflation rates such as those in Table IV.C.1. Table IV.E.1. presents the year-to-year real growth percentages for the period FY 1966 to FY 1987.

Table IV.E.1

Defense Real Growth Percentages

FY	TOA	Outlays	FY	TOA	Outlays
1966	21.7	11.2	1977	4.7	1.9
1967	6.5	17.8	1978	-0.3	0.5
1968	0.1	8.9	1979	-0.7	3.9
1969	-1.2	-2.8	1980	2.5	3.8
1970	-9.2	-7.9	1981	10.9	4.1
1971	-9.7	-9.3	1982	12.7	7.7
1972	-3.0	-6.4	1983	13.2	10.5
1973	-5.2	-9.2	1984	4.6	8.0
1974	-4.4	-2.0	1985	10.4	9.6
1975	-2.4	-0.1	1986	5.4	8.0
1976	3.7	-3.5	1987	3.8	4.6

F. ANALYSIS BY PROGRAM AREA

The budget is disaggregated by the major force programs in Tables IV.F.1. and IV.F.2. and by appropriation category in Tables IV.F.3. and IV.F.4. The second table of each pair (IV.F.2. and IV.F.4.) is in constant FY 1983 dollars.

TABLE IV.F.1.

DoD Budget Summary by Major Force Program
(TOA in Billions of Current Year Dollars)

Program	Total Obligational Authority FY 1981	FY 1982	FY 1983
Strategic Forces	12.7	16.2	23.1
General Purpose Forces	68.3	88.0	106.5
Intelligence & Communications	11.2	14.0	18.0
Airlift & Sealift	2.9	4.0	4.4
Guard & Reserve Forces	9.9	11.6	14.3
Research & Development	14.2	16.9	20.1
Central Supply & Maintenance	17.6	19.2	22.2
Training, Medical, Other General Personnel Activities	35.0	39.8	44.2
Administration & Associated Activities	3.4	3.6	4.3
Support of Other Nations [Excluding Military Assistance Programs (MAP)]	.9	1.0	.9
TOTAL	176.1	214.2	258.0

TABLE IV.F.2.

DoD Budget Summary by Major Force Program
(TOA in Billions of Constant FY 1983 Dollars)

Program	Total Obligational Authority FY 1981	FY 1982	FY 1983
Strategic Forces	14.6	17.2	23.1
General Purpose Forces	78.9	93.8	106.5
Intelligence & Communications	12.8	14.8	18.0
Airlift & Sealift	3.4	4.3	4.4
Guard & Reserve Forces	11.4	12.3	14.3
Research & Development	16.2	17.9	20.1
Central Supply & Maintenance	19.6	20.3	22.2
Training, Medical, Other General Personnel Activities	40.4	42.4	44.2
Administration & Associated Activities	3.8	3.8	4.3
Support of Other Nations [Excluding Military Assistance Programs (MAP)]	1.0	1.1	.9
TOTAL	202.2	227.8	258.0

TABLE IV.F.3.

DoD Budget Summary by Appropriation Category
(TOA in Billions of Current Year Dollars)

Appropriation Title	Total Obligational Authority FY 1981	FY 1982	FY 1983
Military Personnel	36.7	43.0	47.9
Retired Pay	13.7	15.0	16.5
Operation & Maintenance	55.2	63.0	70.4
Procurement	47.8	65.4	89.6
RDT&E	16.6	20.0	24.3
Military Construction	3.4	5.1	5.4
Family Housing	2.0	2.3	2.8
Revolving & Management Funds	.5	.5	.9
TOTAL	176.1	214.2	258.0

TABLE IV.F.4

DoD Budget Summary by Appropriation Category
(TOA in Billions of Constant FY 1983 Dollars)

Appropriation Title	Total Obligational Authority FY 1981	FY 1982	FY 1983
Military Personnel	44.6	46.3	47.9
Retired Pay	15.6	16.0	16.5
Operation & Maintenance	61.5	66.3	70.4
Procurement	54.8	69.8	89.6
RDT&E	18.9	21.2	24.3
Military Construction	3.8	5.3	5.4
Family Housing	2.3	2.4	2.8
Revolving & Management Funds	.6	.5	.9
TOTAL	202.2	227.8	258.0

(NOTE: Totals may not add due to rounding.)

G. DEFENSE AND THE AGGREGATE ECONOMY

Table IV.G.1. presents Defense outlays as percentages of various economic aggregates such as GNP and public employment. The trend is clear in the data of the table--the Nation has devoted a continually declining portion of its resources to defense.

TABLE IV.G.1

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	4.7	4.6	7.0	13.1
FY 80	22.9	5.2	15.9	61.3	16.7	2.8	4.8	4.9	7.4	13.1
FY 81	23.8	5.5	16.6	61.7	16.8	2.8	5.0	5.2	7.7	13.2
FY 82	25.2	5.9	18.1	61.8	16.9	2.8	5.2	5.2	7.7	13.3

APPENDICES

APPENDIX A

TABLE 1
Department of Defense
Financial Summary
(In Millions of Dollars)

	FY 1972	FY 1976	FY 1980	FY 1981	FY 1982	FY 1983
Summary by Budget Title						
Military Personnel	23,147	25,430	31,065	36,746	43,005	47,928
Retired Pay	3,889	7,326	11,920	13,724	15,036	16,511
Operation and Maintenance	21,242	28,848	46,605	55,245	62,990	70,434
Procurement	18,526	21,033	35,309	47,768	65,362	89,587
Research, Development, Test, & Evaluation	7,584	9,520	13,494	16,634	20,044	24,349
Special Foreign Currency Program	12	3	7	3	3	4
Military Construction	1,262	2,147	2,259	3,422	5,061	5,447
Family Housing & Homeowners Asst. Prog.	839	1,258	1,552	2,028	2,278	2,814
Revolving & Management Funds	-	135	-	525	456	910
Total-Direct Program (TOA)	76,502	95,699	142,211	176,094	214,235	257,983
Summary by Program						
Strategic Forces	7,158	7,155	11,116	12,647	16,174	23,099
General Purose Forces	25,518	32,851	52,394	68,269	87,976	106,488
Intelligence and Communications	5,451	6,671	9,120	11,207	13,983	17,988
Airlift and Sealift	1,114	1,262	2,121	2,930	4,036	4,352
Guard and Reserve Forces	3,255	5,374	7,879	9,922	11,560	14,345
Research and Development	5,756	8,645	11,794	14,195	16,903	20,147
Central Supply and Maintenance	8,663	9,714	15,314	17,552	19,232	22,187
Training, Medical, Other Gen. Pers. Activ.	15,198	21,502	29,301	35,000	39,755	44,235
Administration and Assoc. Activities	1,737	2,260	2,531	3,357	3,618	4,314
Support of Other Nations	2,652	264	641	915	995	852
Total-Direct Program (TOA)	76,502	95,699	142,211	176,094	214,235	257,983

TABLE 1 (Cont'd)
Department of Defense
Financial Summary
(In Millions of Dollars)

	FY 1972	FY 1976	FY 1980	FY 1981	FY 1982	FY 1983
Summary by Component						
Department of the Army	22,094	23,759	34,567	42,244	53,012	61,199
Department of the Navy	24,041	31,360	47,084	57,468	69,665	88,559
Department of the Air Force	23,834	28,432	41,690	52,425	65,757	78,614
Defense Agencies/OSD/JCS	1,745	3,487	5,268	6,763	7,961	9,731
Defense-wide	4,788	8,661	13,603	16,194	17,840	19,880
Total-Direct Program (TOA)	76,502	95,699	142,211	176,094	214,235	257,983
Financing Adjustments	-1,496	-288	412	2,529	92	-526
Budget Authority (BA)	75,006	95,508	142,621	178,353	214,327	257,457
Outlays	75,076	87,891	132,840	156,096	182,800	215,900

Note: In the FY 1982 and FY 1983 columns, 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 BUDGET
DEFENSE BUDGET TOTALS

($ BILLIONS)

CURRENT DOLLARS	FY 1981 ACTUAL	FY 1982 ESTIMATE	FY 1983 ESTIMATE	INCREASE FY 1982-1983
TOTAL OBLIGATIONAL AUTHORITY (TOA)	176.1	214.2	258.0	43.7
BUDGET AUTHORITY (BA)	178.4	214.1	257.5	43.4
OUTLAYS	156.1	182.8	215.9	33.1
CONSTANT FY 1983 DOLLARS				
TOTAL OBLIGATIONAL AUTHORITY (TOA)	202.2	227.8	258.0	30.2
BUDGET AUTHORITY (BA)	204.8	227.6	257.5	29.8
OUTLAYS	181.4	195.4	215.9	20.5

PRESIDENTS BUDGET
PAY AND INFLATION RATE ASSUMPTIONS

FY 1981 - FY 1987
ANNUAL PERCENTAGE CHANGE

CATEGORY	1981 TO 1982	1982 TO 1983	1983 TO 1984	1984 TO 1985	1985 TO 1986	1986 TO 1987
PAY						
MILITARY	14.3	8.0	7.6	5.5	5.0	5.0
GENERAL SCHEDULE	4.8	5.0	5.0	5.0	5.0	5.0
WAGE BOARD	4.8	5.0	4.0	4.0	4.0	5.0
MILITARY RETIRED PAY	6.6	6.5	4.3	3.3	2.9	2.9
INDUSTRY PURCHASES (NON-PAY)	8.3	7.0	5.9	5.9	5.4	5.3
COMPOSITE, DoD	8.7	6.9	5.9	5.5	5.1	5.0

LONG-RANGE FORECASTS AND PAY/PRICE ASSUMPTIONS

	FY 1982	FY 1983	FY 1984	FY 1985	FY 1986	FY 1987
TOA ($ BILLIONS)						
MILITARY RETIRED PAY	15.0	16.5	17.7	18.9	20.0	21.1
OTHER MILITARY FUNCTIONS	199.2	214.5	267.8	312.8	347.6	379.7
TOTAL, CURRENT PRICES	214.2	258.0	285.5	331.7	367.6	400.8
TOTAL CONSTANT (FY 1983) PRICES	227.8	258.0	269.8	297.8	314.0	325.9
PERCENT CHANGE	12.7%	13.2%	4.6%	10.4%	5.4%	3.8%
OUTLAYS ($ BILLIONS)						
MILITARY RETIRED PAY	15.0	16.5	17.7	18.8	19.9	21.1
OTHER MILITARY FUNCTIONS	167.8	199.4	229.3	266.7	304.1	334.9
TOTAL, CURRENT PRICES	182.8	215.9	247.0	285.5	324.0	356.0
TOTAL CONSTANT (FY 1983) PRICES	195.4	215.9	233.2	255.6	276.0	288.7
PERCENT CHANGE	7.7%	10.5%	8.0%	9.6%	8.0%	4.6%
COMPOSITE PAY/PRICE ASSUMPTIONS OUTLAYS (FY 1983=100)	93.6	100.0	105.9	111.7	117.4	123.3

DEPARTMENT OF DEFENSE BUDGET FINANCIAL SUMMARY

($ BILLIONS)

CURRENT DOLLARS
TOTAL OBLIGATIONAL AUTHORITY

APPROPRIATION TITLE	FY 1981	FY 1982	FY 1983	CHANGE FY 1982-1983
MILITARY PERSONNEL	36.7	43.0	47.9	4.9
RETIRED PAY	13.7	15.0	16.5	1.5
OPERATION AND MAINTENANCE	55.2	63.0	70.4	7.4
PROCUREMENT	47.8	65.4	89.6	24.2
RDT&E	16.6	20.0	24.3	4.3
MILITARY CONSTRUCTION	3.4	5.1	5.4	0.4
FAMILY HOUSING	2.0	2.3	2.8	0.5
REVOLVING & MANAGEMENT FUNDS	0.5	0.5	0.9	0.5
TOTAL MILITARY FUNCTIONS	176.1	214.2	258.0	43.7

Note: Totals may not add due to rounding

DEPARTMENT OF DEFENSE BUDGET FINANCIAL SUMMARY

BY APPROPRIATION CATEGORY - CONSTANT PRICES

($ BILLIONS)

APPROPRIATION TITLE	FY 1981	FY 1982	FY 1983	CHANGE FY 1982-1983
	CONSTANT FY 1983 DOLLARS TOTAL OBLIGATIONAL AUTHORITY			
MILITARY PERSONNEL	44.6	46.3	47.9	+1.6
RETIRED PAY	15.6	16.0	16.5	+0.5
OPERATION AND MAINTENANCE	61.5	66.3	70.4	+4.2
PROCUREMENT	54.8	69.8	89.6	+19.8
RDT&E	18.9	21.2	24.3	+3.1
MILITARY CONSTRUCTION	3.8	5.3	5.4	+0.1
FAMILY HOUSING	2.3	2.4	2.8	+0.4
REVOLVING & MANAGEMENT FUNDS	0.6	0.5	0.9	+0.4
TOTAL MILITARY FUNCTIONS	202.2	227.8	258.0	+30.2

TOTALS MAY NOT ADD DUE TO ROUNDING

DEPARTMENT OF DEFENSE BUDGET

FINANCIAL SUMMARY BY MAJOR PROGRAM

(BILLIONS OF $)

	CURRENT DOLLARS TOTAL OBLIGATIONAL AUTHORITY			
MILITARY PROGRAM	FY 1981	FY 1982	FY 1983	CHANGE FY 1982-1983
STRATEGIC FORCES	12.7	16.2	23.1	+ 6.9
GENERAL PURPOSE FORCES	68.3	88.0	106.5	+ 18.5
INTELLIGENCE AND COMMUNICATIONS	11.2	14.0	18.0	+ 4.0
AIRLIFT AND SEALIFT	2.9	4.0	4.4	+ 0.3
GUARD AND RESERVE FORCES	9.9	11.6	14.3	+ 2.8
RESEARCH AND DEVELOPMENT	14.2	16.9	20.1	+ 3.2
CENTRAL SUPPLY AND MAINTENANCE	17.6	19.2	22.2	+ 3.0
TRAINING, MEDICAL, OTHER GEN. PERS. ACTIV.	35.0	39.8	44.2	+ 4.5
ADMINISTRATIVE AND ASSOC. ACTIVITIES	3.4	3.6	4.3	+ 0.7
SUPPORT OF OTHER NATIONS	0.9	1.0	0.9	—0.1
TOTAL MILITARY FUNCTIONS	176.1	214.2	258.0	43.7

Note: May not add due to rounding.

DEPARTMENT OF DEFENSE BUDGET
FINANCIAL SUMMARY
BY MAJOR PROGRAM—CONSTANT PRICES

(BILLIONS OF $)

MILITARY PROGRAM	CONSTANT FY 1983 DOLLARS TOTAL OBLIGATIONAL AUTHORITY FY 1981	FY 1982	FY 1983	CHANGE FY 1982-1983
STRATEGIC FORCES	14.6	17.2	23.1	+ 5.9
GENERAL PURPOSE FORCES	78.9	93.8	106.5	+ 12.7
INTELLIGENCE AND COMMUNICATIONS	12.8	14.8	18.0	+ 3.2
AIRLIFT AND SEALIFT	3.4	4.3	4.4	+ 0.1
GUARD AND RESERVE FORCES	11.4	12.3	14.3	+ 2.1
RESEARCH AND DEVELOPMENT	16.2	17.9	20.1	+ 2.2
CENTRAL SUPPLY AND MAINTENANCE	19.6	20.3	22.2	+ 1.9
TRAINING, MEDICAL, OTHER GEN. PERS. ACTIV.	40.4	42.4	44.2	+ 1.8
ADMINISTRATIVE AND ASSOC. ACTIVITIES	3.8	3.8	4.3	+ 0.5
SUPPORT OF OTHER NATIONS	1.0	1.1	0.9	−0.2
TOTAL MILITARY FUNCTIONS	202.2	227.8	258.0	30.2

Note: May not add due to rounding.

DEPARTMENT OF DEFENSE BUDGET
DEFENSE EMPLOYMENT OUTLOOK

(END-YEAR-IN-THOUSANDS)

	FY 64	FY 68	FY 75	FY 81	FY 82	FY 83	CHANGE FY 82-83
CIVILIANS							
ARMY	453	542	401	372	383	386	+3
NAVY/MARINE CORPS	346	433	326	321	319	321	+2
AIR FORCE	338	357	278	246	247	243	-4
DEFENSE AGENCIES	37	74	73	80	84	86	+1
TOTAL CIVILIANS	1,174	1,405	1,078	1,019	1,033	1,035	+2
MILITARY (ACTIVE)							
ARMY	972	1,570	784	781	784	784	-1
NAVY[a]	667	765	535	540	553	569	+16
MARINE CORPS	190	307	196	191	192	195	+3
AIR FORCE	856	905	613	570	581	600	+19
TOTAL MILITARY	2,685	3,547	2,128	2,082	2,110	2,148	+37
TOTAL MILITARY AND CIVILIANS	3,859	4,952	3,206	3,101	3,143	3,183	+40
DEFENSE RELATED INDUSTRY	2,280	3,174	1,800	2,230	2,515	2,862	+347
TOTAL DEFENSE MANPOWER	6,139	8,126	5,006	5,331	5,658	6,045	+387

[a] REFLECTS TRANSFER OF 12,000 FULL TIME END STRENGTH TO RESERVE PERSONNEL, NAVY IN FY 1983

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	1,118	5.4
1981	1,073	5.2
Programmed		
1982	1,119	5.3
1983	1,119	5.3

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
1981	285	6.3
Programmed		
1982	290	6.2
1983	298	6.2

1/ Includes all officers on extended active duty.

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
1981	2,082	1,019	3,101
Programmed			
1982	2,110	1,033	3,143
1983	2,148	1,035	3,183

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.

* 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/	1983
Active Duty Military								
Army	972	1,570	811	779	777	781	784	784
Navy	667	765	588	525	527	540	553	569
Marine Corps	190	307	198	192	188	191	192	195
Air Force	856	905	726	585	558	570	581	600
Total	2,685	3,547	2,322	2,081	2,050	2,082	2,110	2,148
Reserve Components (Selected Reserve)								
Army National Guard	382	389	388	362	367	389	398	417
Army Reserve	269	244	235	195	207	225	252	269
Naval Reserve	123	124	124	97	87	88	94	106
Marine Corps Reserve	46	47	41	30	35	37	39	40
Air National Guard	73	75	89	91	96	98	100	102
Air Force Reserve	61	43	47	48	59	62	64	67
Total	953	922	925	823	851	899	946	1,000
Direct Hire Civilian								
Army 3/	360	462	367	329	312	318	322	323
Navy	332	419	342	311	298	310	308	309
Air Force 3/	305	331	280	248	231	233	233	229
Defense Agencies	38	75	61	72	75	79	84	86
Total 3/	1,035	1,287	1,050	960	916	940	947	947

1/ Numbers may not add to total due to rounding.
2/ FY 1982 column of the FY 1983 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 1/
(End Year -- In Thousands)

	1964	1968	1972	1976	1978	1979	1980	1981
Germany	263	225	210	213	234	239	244	248
Other Europe	119	66	62	61	61	61	65	64
Europe, Afloat	54	23	26	41	35	25	22	25
South Korea	63	67	41	39	42	39	39	38
Japan and Ryukyus	89	79	64	45	46	46	46	46
Other Pacific	27	37	25	27	16	15	15	15
Pacific Afloat (including Southeast Asia)	52	94	51	24	26	22	15	25
Thailand	4	48	47	1	—	—	—	—
South Vietnam	16	534	47	—	—	—	—	—
Miscellaneous Foreign	68	27	22	8	12	11	42	39
Total	755	1,200	595	460	472	458	489	502

1/ Numbers may not add to totals due to rounding.

APPENDIX C

ACRONYMS

AAA:	Anti-Aircraft Artillery
AAH:	Advanced Attack Helicopter
AAO:	Authorized Acquisition Objective
AAP:	Affirmative Actions Program
AAW:	Anti-Air Warfare
ABL:	Armored Box Launchers
ABM:	Anti-Ballistic Missile
ACCS:	Air Command and Control System
ACDA:	Arms Control and Disarmament Agency
ACIP:	Aviation Career Incentive Pay
ACR:	Armored Cavalry Regiment
ACS:	Artillery Computer System
AD:	Destroyer Tender
ADCAP:	Advanced Capability
ADM:	Atomic Demolition Munitions
ADP:	Automatic Data Processing
AEW&C:	Airborne Early Warning and Control
AFAP:	Artillery-fired Atomic Projectile
AFCEA:	Armed Forces Communications and Electronics Association
AFLC:	Air Force Logistics Command
AFRes:	Air Force Reserve
AFSATCOM:	Air Force Satellite Communications
AGM:	Air-to-Ground Missile
AH:	Attack Helicopter
ALCM:	Air-Launched Cruise Missile
ALCS:	Airborne Launch Control System
ALOC:	Air Line of Communication
ALWT:	Advanced Lightweight Torpedo
AMCM	Airborne Mine Countermeasure
AMHS:	Automated Message Handling System
AMRAAM:	Advanced Medium-Range Air-to-Air Missile
ANG:	Air National Guard
ANZUS:	Australia-New Zealand-U.S.
AOE:	Multi-Purpose Stores Ship
APPSSA:	Advance Procurement Planning System for Security Assistance
ARS:	Salvage Ship
ASARS	Advanced Synthetic Aperture Radar System
ASAS:	All Source Analysis System
ASAT:	Anti-Satellite
ASCM:	Anti-Ship Cruise Missile
ASM:	Air-to-Surface Missile
ASPJ:	Airborne Self-Protection Jammer
ASROC:	Anti-Submarine Rocket
ASW:	Anti-Submarine Warfare
ATB:	Advanced Technology Bomber (Stealth)
ATMG:	Arms Transfer Management Group
AUTODIN:	Automated Digital Network
AVF:	All Volunteer Force
AWACS:	Airborne Warning and Control System

BA:	Budget Authority
BAS:	Basic Allowance for Subsistance
BAQ:	Basic Allowance for Quarters
BB:	Battleship
BCS:	Battery Computer System
BDS:	Battlefield Data System

BETA:	Battlefield Exploitation and Target Acquisition
BFVS:	Bradley Fighting Vehicle System
BLSS:	Base Level Supply Sufficiency
BMD:	Ballistic Missile Defense
BMEWS:	Ballistic Missile Early Warning System
C^3:	Command, Control, and Communications
C^3CM:	Command, Control, and Communications Countermeasures
C^3I:	Command, Control, Communications, and Intelligence
CAMDS:	Chemical Agent Munitions Disposal System
CASW/SOW:	Common ASW Standoff Weapon
CAT:	Conventional Arms Transfer
CBAC:	Combt Brigade Air Cavalry
CCP:	Consolidated Cryptologic Program
CEP:	Circular Error, Probable
CEWI:	Combat Electronics Warfare Intelligence
CFV:	Cavalry Fighting Vehicle
CG:	Guided-Missile Cruisers
CGN:	Nuclear-Powered Guided Missile Cruisers
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 Command
CINCPAC:	Commander-in-Chief, Pacific Command
CIS:	Combat Identification System
CIWS:	Close-In Weapon System
CMC:	Cruise Missile Carrier (Aircraft)
CMCHS:	Civilian-Military Contingency Hospital System
CMMS:	Congressionally Mandated Mobility Study
CNI:	Communications/Navigation/Information
COB:	Collocated Operating Bases
COCOM:	Coordinating Committee for Multi-lateral Export Controls
COI:	Community of Interest
COMINT:	Communications Intelligence
COMSEC:	Communications Security
CONUS:	Continental United States
COOP:	Continuity of Operation Plan
CORE:	Contingency Response Program
COTS:	Container Over-the-Shore
CPA:	Continuous Patrol Aircraft
CPI:	Consumer Price Index
CPX:	Command Post Exercise
CRAF:	Civil Reserve Air Fleet
CSEC:	Computer Security Evaluation Center
CSOC:	Consolidated Space Operations Center
CSS:	Combat Service Support
CSWS:	Corps Support Weapon System
CUCV:	Commercial Utility and Cargo Vehicle
CV:	Aircraft Carrier
CVBG:	Aircraft Carrier Battle Group
CVN:	Aircraft Carrier, Nuclear-powered
CVV:	Aircraft Carrier, Medium-sized
CW:	Chemical Warfare
CY:	Calendar Year or Current Year

DARPA:	Defense Advanced Research Projects Agency
DAS:	Defense Audit Service
DB:	Deep Underground Basing
DCA:	Dual-Capable Aircraft
DCIS:	Defense Criminal Investigative Service
DCS:	Defense Communications System
DD:	Destroyer
DDG:	Guided Missile Destroyer
DDGX:	Guided Missile Destroyer
DEB:	Digital European Backbone
DECM:	Defense Electronic Countermeasures
DEERS:	Defense Enrollment/Eligibility Reporting System
DEW:	Distant Early Warning (Line)
DLA:	Defense Logistics Agency
DMSP:	Defense Meteorological Satellite Program
DNA:	Defense Nuclear Agency
DoD:	Department of Defense
DoE:	Department of Energy
DOPMA:	Defense Officer Personnel Management Act
DPC:	Defense Planning Committee
DPEM:	Depot Purchased Equipment Maintenance
DPS:	Defense Priorities System
DRB:	Defense Resources Board
DRSP:	Defense Reconnaissance Support Program
DSAA:	Defense Security Assistance Agency
DSARC:	Defense Systems Acquisition Review Council
DSB:	Defense Science Board
DSCS:	Defense Satellite Communication System
DSP:	Defense Support Program

EAM:	Emergency Action Message
ECCCS:	European Command and Control Console System
ECCM:	Electronic-Counter-Countermeasure
ECIP:	Energy Conservation Investment Program
ECM:	Electronic Countermeasures
EHF:	Extremely High Frequency
ELINT:	Electronic Intelligence
EMP:	Electromagnetic Pulse
EMPB:	Emergency Mobilization Preparedness Board
ENSCE:	Enemy Situation Correlation Element
ENTPS:	Expanded Near-Term Prepositioning Ships
EOC:	Engineered Operating Cycle
EOH:	Equipment on Hand
ER:	Enhanced Radiation
ER/RB:	Enhanced Radiation/Reduced Blast
ESF:	Economic Support Funds
ETS:	European Telephone System
EUCOM:	European Command
EW:	Electronic Warfare

FAAD:	Forward Area Air Defense
FBM:	Fleet Ballistc Missile
FDP:	Funded Delivery Period
FEMA:	Federal Emergency Management Agency
FFB:	Federal Finance Bank
FFG:	Guided Missile Frigate
FLIR:	Forward-Looking Infrared
FLTSATCOM:	Fleet Satellite Communications System

FMS:	Foreign Military Sales
FMSCR:	Foreign Military Sales Credit Financing
FOC:	Full Operational Capability
FRS:	Fleet Readiness Squadron
FTX:	Field Training Exercise
FVS:	Fighting Vehicle System
FWE:	Foreign Weapons Evaluation
FY:	Fiscal Year
FYDP:	Five-Year Defense Program
GDIP:	General Defense Intelligence Program
GDP:	Gross Domestic Product
GLCM:	Ground-Launched Cruise Missile
GLLD:	Ground Laser Locator Designator
GMCC:	Ground Mobile Command Center
GME:	Greater Middle East
GMF:	Ground Mobile Forces
GNP:	Gross National Product
GPS:	Global Positioning System
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
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
INF:	Intermediate-Range Nuclear Forces
ING:	Inactive National Guard
IOC:	Initial Operational Capability
IONDS:	Integrated Operational Nuclear Detection System
IO/PG:	Indian Ocean/Persian Gulf
IR:	Infrared
IRBM:	Intermediate-Range Ballistic Missile
IRETS:	Infantry Remote Targeting System
IRMC:	Information Resource Management Council
IRR:	Individual Ready Reserve
ITAR:	International Traffic in Arms Regulations
ITEP:	Interim Tactical ELINT Processor
ITSS:	Integrated Tactical Surveillance System
IUS:	Inertial Upper Stage
JCMC:	Joint Crisis Management Capability
JCS:	Joint Chiefs of Staff
JINTACCS:	Joint Interoperability of Tactical Command and Control Systems
JLSP:	Joint Logistics Support Plan

JOT&E:	Joint Operational Test and Evaluation
JTFP:	Joint Tactical Fusion Program
JTIDS:	Joint Tactical Information Distribution System

LAMPS:	Light Airborne Multipurpose System
LAV:	Light Armored Vehicle
LCAC:	Landing Craft, Air Cushion
LEASAT:	Leased Satellite System
LF:	Low Frequency
LGB:	Laser-Guided Bomb
LHA:	Amphibious Assault Ship
LHD:	General Purpose Amphibious Assault Ship
LLLGB:	Low Level Laser-Guider Bomb
LOAD:	Low Altitude Defense Program
LOC:	Line of Communication
LPD:	Amphibious Transport, Dock
LPH:	Landing Platform Helicopter
LRTNF:	Long-Range Theater Nuclear Force
LSD:	Amphibious Ship, Dock
LST:	Amphibious Ship, Tank
LTDP:	Long-Term Defense Program
LVT:	Tracked-Landing Vehicles

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
MASF:	Military Assistance Service Funded Grant Program
MAU:	Marine Amphibious Unit
MC:	Mission Capable
MCM:	Mine Countermeasures
MCP:	Military Construction Program
MCTL:	Military Critical Technology List
MFO:	Multi-National Force Observers
MGT:	Mobile Ground Terminals
MIDS:	Multi-functional Information Distribution System
MIFASS:	Marine Integrated Fire and Air Support System
MILCON:	Military Construction
MILES:	Multiple Integrated Laser Engagement System
MILSTAR:	Military Strategic, Tactical and Relay Program
MIRV:	Multiple Independently-Targetable Reentry Vehicle
MLRS:	Multiple Launch Rocket System
MMP:	Master Mobilization Plan
MODFLIR:	Modular Forward-Looking Infrared Seeker
MOU:	Memorandum of Understanding
MPS:	Maritime Prepositioning ships
MPS:	Multiple Protective Shelter
MRBM:	Medium-Range Ballistic Missile
MRR:	Materiel Readiness Report
MSC:	Military Sealift Command
MSH:	Minesweeper Hunter Vessels
MSO:	Ocean-Going Minesweeper
MTMC:	Military Traffic Management Command
MULE:	Modular Universal Laser Equipment
MX:	Missile, Experimental

NADGE:	NATO Air Defense Ground Environment
NAEW:	NATO Airborne Early Warning
NAPR:	NATO Armaments Planning Review
NARF:	Naval Air Reserve Force or Naval Air Rework Facility
NATO:	North Atlantic Treaty Organization
NBC:	Nuclear, Biological, and Chemical
NCA:	National Command Authority
NCO:	Noncommissioned Officer
NCS:	National Communications System
NDRF:	National Defense Reserve Fleet
NEARTIP:	Near-Term Torpedo Improvement Program
NEXRAD:	Next Generation Weather Radar
NFAF:	Navy Fleet Auxiliary Force
NFCS:	Nuclear Forces Communications Satellite
NFIP:	National Foreign Intelligence Program
NICS:	NATO Integrated Communications System
NMCC:	National Military Command Center
NMCS:	National Military Command System
NORAD:	North American Air Defense Command
NPG:	Nuclear Planning Group
NPS:	Non-Prior Service
NRF:	Naval Reserve Force
NSA:	National Security Agency
NSSMS:	NATO Sea Sparrow Surface Missile System
NTC:	National Training Center
NTPS:	Near-Term Prepositioning Ships
NUDET:	Nuclear Detonation
NWSM:	Nuclear Weapons Stockpile Memorandum

O&M:	Operations and Maintenance
OAD:	Official Development Assistance
OAS:	Offensive Avionics System
OASD:	Office of the Assistant Secretary of Defense
OECD:	Organization for Economic Cooperation and Development
OED:	Operational Effectiveness Demonstration
OJCS:	Office of the Joint Chiefs of Staff
OMB:	Office of Management and Budget
OPEVAL:	Operational Evaluation
OPM:	Office of Personnel Management
OSD:	Office of the Secretary of Defense
OTH:	Over-the-Horizon
OTH-B:	Over-the-Horizon Backscatter
OWRM:	Other War Reserve Material

P^3I:	Pre-planned Product Improvement Program
PAA:	Primary Aircraft Authorized
PACOM:	Pacific Command
PAL:	Permissive Action Link
PAPS:	Periodic Armaments Planning System
PARCS:	Perimeter Acquisition Radar Attack Characterization System
PAVE PAWS:	Phased-Array Radars
PCS:	Permanent Change of Station
PDIIS:	Priority Defense Items Information System
PIF:	Productivity Investment Fund
PKO:	Peace-Keeping Operations
PLRS:	Position Location Reporting System

PLSS:	Precision Location Strike System
PMALS:	Prototype Miniature Air-launched System
PMR:	Primary Mission Readiness
POC:	Programs of Cooperation
POL:	Petroleum-Oil-Lubricants
POMCUS:	Prepositioned Materiel Configured to Unit Sets
POST:	Passive Optical Seeker Technique
PPBS:	Planning, Programming, and Budgeting System
PWRMS:	Prepositioned War Reserve Materiel Stocks

R&D:	Research and Development
RAM:	Rolling Airframe Missile
RAP:	Rocket-Assisted Projectile
RCM:	Reliability Centered Maintenance
RD&A:	Research, Development, and Acquisition
RDF:	Rapid Deployment Forces
RDJTF:	Rapid Deployment Joint Task Force
RDT&E:	Research, Development, Test, and Evaluation
REIS:	Reconstitutable and Enduring Intelligence System
RFP:	Request for Proposal
ROCC:	Region Operational Control Center
ROK:	Republic of Korea
RO/RO:	Roll-On/Roll-Off
RPMA:	Real Property Maintenance Activities
RPV:	Remotely Piloted Vehicle
RRF:	Ready Reserve Fleet
RSC:	Reinforcement Support Category
R/S/I:	Rationalization/Standardization/Interoperability
RV:	Reentry Vehicle
RWR:	Radar Warning Receivers

S&T:	Science and Technology
SAC:	Strategic Air Command
SACEUR:	Supreme Allied Commander, Europe
SACLANT:	Supreme Allied Commander, Atlantic
SAGE:	Semi-Automatic Ground Environment
SALT:	Strategic Arms Limitation Treaty
SAM:	Surface-to-Air Missile
SATCOM:	Satellite Communications
SCF:	Satellite Control Facility
SAW:	Squad Automatic Weapon
SCN:	Ship Construction - Navy
SCT:	Single-Channel Transponder
SDAF:	Special Defense Acqusition Fund
SDS:	Satellite Data System
SEA:	Southeast Asia
SEAD:	Suppression of Enemy Air Defenses
SES:	Senior Executive Service
SGLI:	Serviceman's Group Life Insurance
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
SM:	Standard Missile

SNA:	Soviet Naval Aviation
SNF:	Short-Range Nuclear Forces
SNM:	Special Nuclear Material
SOTAS:	Standoff Target Acquisition System
SOW:	Standoff Weapon
SRAM:	Short-Range Attack Missile
SSBN:	Ballistic Missile Submarine, Nuclear-powered
SSGN:	Cruise Missile Submarine
SSIP:	Ship Support Improvement Project
SSN:	Submarine, Nuclear-powered
STANAG:	Standard NATO Agreement
SUBACS:	Submarine Advanced Combat System
SURTASS:	Surveillance Towed Array Sensor System
SWA:	Southwest Asia

TAA:	Total Aircraft Authorized
TAC:	Tactical Air Command
TACFIRE:	Tactical Fire
TACAMO:	Airborne Strategic Communications System
TACJAM	Tactical Jamming
TACTAS:	Tactical Towed Array Sonar
TARPS:	Tactical Air Reconnaissance Pod System
T-AFS:	Stores Ship
T-AGM:	Range Instrumentation Ship
T-AGS:	FBM Support Ship
T-AK:	Cargo Ship
T-ALS:	Barge Cargo Ship
T-AO:	Fleet Oiler
T-ARC:	Cable Ship
TCDF:	Temporary Container Discharge Facility
TCP:	Tactical Cryptologic Program
TCS:	Television Control Set
TENCAP:	Tactical Exploitation of National Space Capabilities
TIARA:	Tactical Intelligence and Related Activities
TOA:	Total Obligational Authority
TOW:	Tube-Launched Optically-Tracked Wire-Guided
TRAM:	Target Recognition Attack Multi-Sensor
TRI-TAC:	Joint Tactical Communications Program

UCA:	Uniform Chart of Accounts
USM:	Uniform Staffing Methodology
UH:	Utility Helicopter
UHF:	Ultra-High Frequency

VHF:	Very High Frequency
VLF:	Very Low Frequency
VLS:	Vertical Launch System
VP:	Navy Fixed Wing Patrol Squadron
V/STOL:	Vertical/Short Take-off and Landing

WAAM:	Wide Area Anti-Armor Munition
WARMAPS:	Wartime Manpower Program System
WIN:	WWMCCS Intercomputer Network

WIS:	WWMCCS Information Systems
WRM:	War Reserve Munitions
WRS:	War Reserve Stocks
WRSK:	War Readiness Supply Kits
WSR:	Weapon System Reliability
WWMCCS:	Worldwide Military Command and Control System

SOVIET MILITARY POWER

SOVIET MILITARY POWER

"The more constructive East-West relationship which the Allies seek requires tangible signs that the Soviet Union is prepared to abandon the disturbing buildup of its military strength, to desist from resorting to force and intimidation and to cease creating or exploiting situations of crisis and instability in the Third World."

From the Communique of the
NATO Foreign Ministers Meeting
May 1981

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The illustrations of new Soviet weapons systems introducing each chapter are derived from various U.S. sources; while not precise in every detail, they are as authentic as possible.

PREFACE

The Soviet Armed Forces today number more than 4.8 million men. For the past quarter century, we have witnessed the continuing growth of Soviet military power at a pace that shows no signs of slackening in the future.

All elements of the Soviet Armed Forces—the Strategic Rocket Forces, the Ground Forces of the Army, the Air Forces, the Navy and the Air Defense Forces—continue to modernize with an unending flow of new weapons systems, tanks, missiles, ships, artillery and aircraft. The Soviet defense budget continues to grow to fund this force buildup, to fund the projection of Soviet power far from Soviet shores and to fund Soviet use of proxy forces to support revolutionary factions and conflict in an increasing threat to international stability.

To comprehend the threat to Western strategic interests posed by the growth and power projection of the Soviet Armed Forces it is useful to consider in detail the composition, organization and doctrine of these forces, their ideological underpinning, and their steady acquisition of new, increasingly capable conventional, theater nuclear and strategic nuclear weapons systems. It is equally important to examine the USSR's industrial base, military resource allocations, and continuing quest for military/technological superiority which contribute to the effectiveness of its armed forces and proxy forces, and which support the Soviets' position as a world leader in arms exports.

The facts are stark:

- The Soviet Ground Forces have grown to more than 180 divisions—motorized rifle divisions, tank divisions and airborne divisions—stationed in Eastern Europe, in the USSR, in Mongolia, and in combat in Afghanistan. Soviet Ground Forces have achieved the capacity for extended intensive combat in the Central Region of Europe.
- The Soviets have fielded 50,000 tanks and 20,000 artillery pieces. The Soviet divisions are being equipped with the newer, faster, better armored T-64 and T-72 tanks. Some artillery units, organic to each division, include new, heavy mobile artillery, multiple rocket launchers and self-propelled, armored 122-mm and 152-mm guns.
- More than 5,200 helicopters are available to the Soviet Armed Forces, including increasing numbers of Mi-8 and Mi-24 helicopter gunships used in direct support of ground forces on the battlefield.
- More than 3,500 Soviet and Warsaw Pact tactical bombers and fighter aircraft are located in Eastern Europe alone. In each of the last eight years, the Soviets have produced more than 1,000 fighter aircraft.
- Against Western Europe, China and Japan, the Soviets are adding constantly to deliverable nuclear warheads, with the number of launchers growing, with some 250 mobile, SS-20 Intermediate Range Ballistic Missile launchers in the field, and with three nuclear warheads on each SS-20 missile.

• The Soviets continue to give high priority to the modernization of their Intercontinental Ballistic Missile (ICBM) force and their Submarine Launched Ballistic Missile (SLBM) force stressing increased accuracy and greater warhead throwweight. The Soviet intercontinental strategic arsenal includes 7,000 nuclear warheads, with 1,398 ICBM launchers, 950 SLBM launchers and 156 long-range bombers. This does not include some 150 nuclear-capable BACKFIRE bombers.

• The Soviets have eight classes of submarines and eight classes of major surface warships, including nuclear-powered cruisers and new aircraft carriers, presently under construction. This growing naval force emerging from large, modern shipyards is designed to support sustained operations in remote areas in order to project Soviet power around the world.

• The Soviet Air Defense Forces man 10,000 surface-to-air missile launchers at 1,000 fixed missile sites across the Soviet Union.

• The growth of the Soviet Armed Forces is made possible by the USSR's military production base which continues to grow at the expense of all other components of the Soviet economy. There are 135 major military industrial plants now operating in the Soviet Union with over 40 million square meters in floor space, a 34 percent increase since 1970. In 1980, these plants produced more than 150 different types of weapons systems for Soviet forces and for export to client states and developing countries.

• Today, the Soviets have more than 85,000 men fighting in Afghanistan. Soviet naval forces are deployed in the major oceans of the world. The USSR is gaining increased access to military facilities and is supporting proxy conflicts in Africa, Southwest Asia, Southeast Asia and the Western hemisphere.

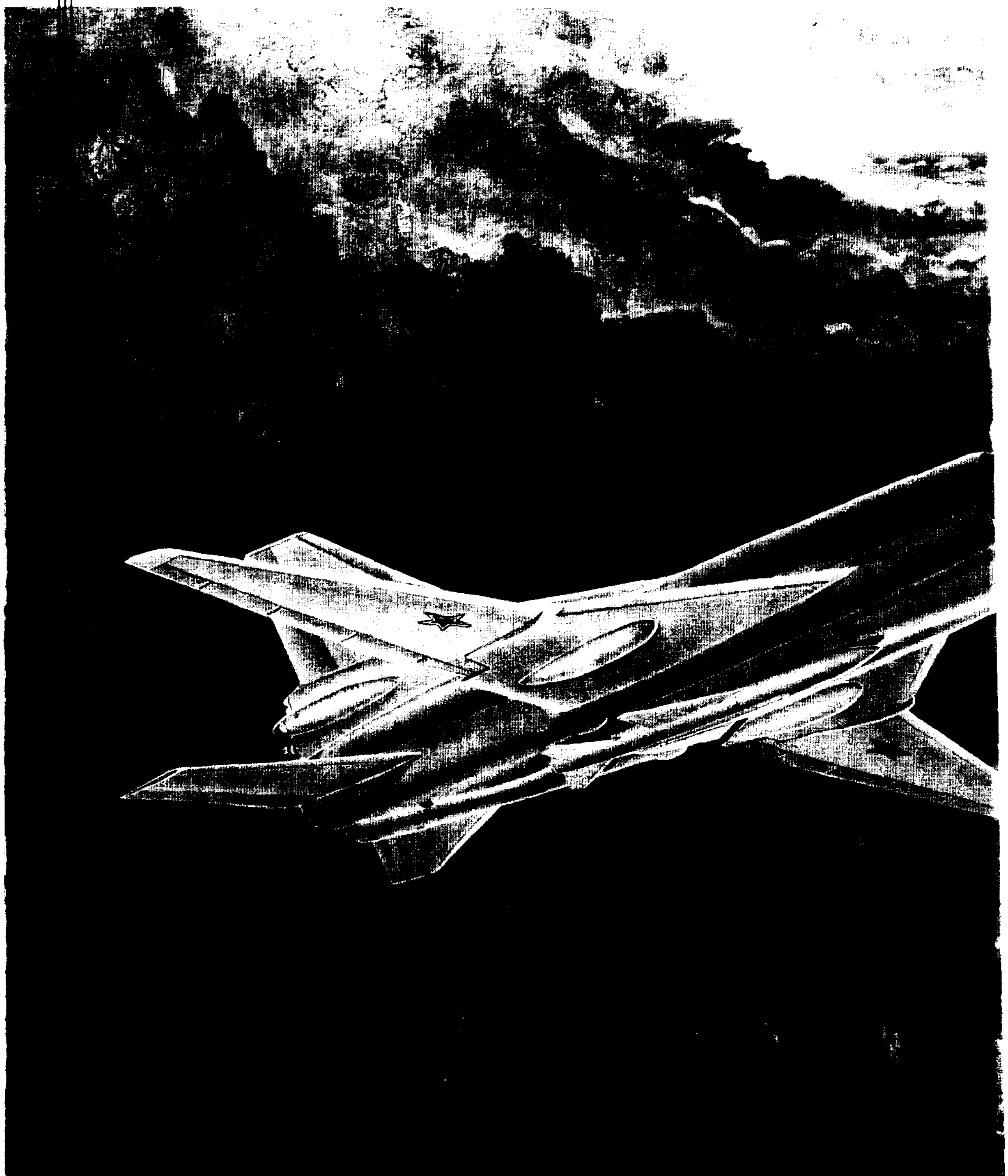
There is nothing hypothetical about the Soviet military machine. Its expansion, modernization, and contribution to projection of power beyond Soviet boundaries are obvious.

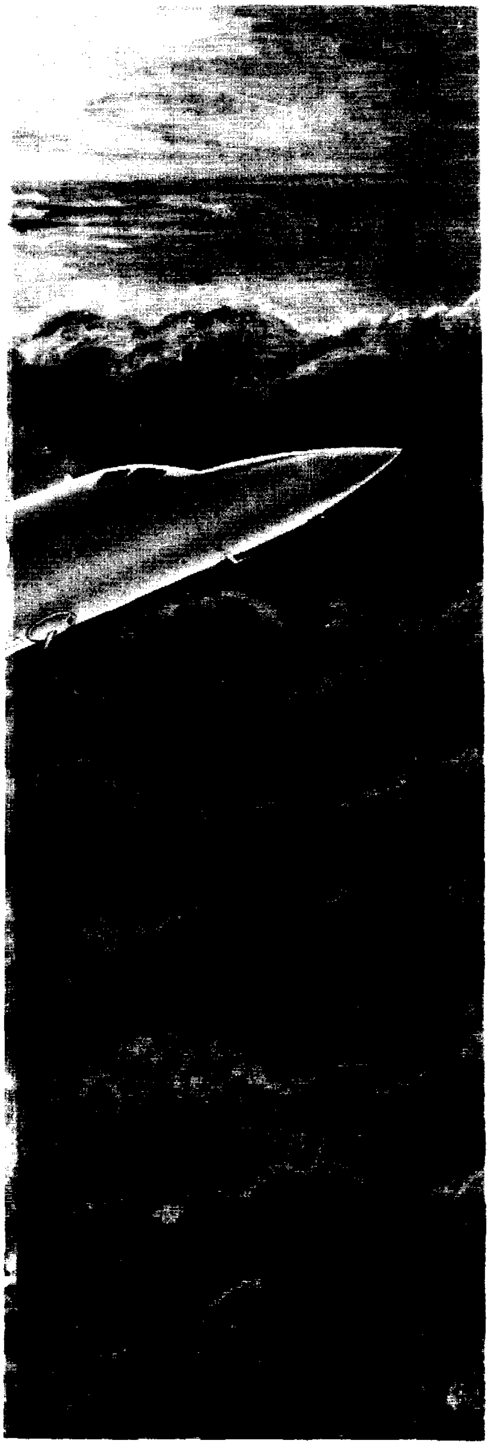
A clear understanding of Soviet Armed Forces, their doctrine, their capabilities, their strengths and their weaknesses is essential to the shaping and maintenance of effective U.S. and Allied Armed Forces.

The greatest defense forces in the world are those of free people in free nations well informed as to the challenge they face, firmly united in their resolve to provide fully for the common defense, thereby deterring aggression and safeguarding the security of the world's democracies.

Caspar W. Weinberger
Secretary of Defense

I SOVIET MILITARY PO





This document, which is a distillation of briefings provided to the NATO Ministers of Defense, describes the totality of the Soviet military buildup in some detail. Free people can better determine the challenges they face and the decisions required if armed with adequate factual knowledge of the threat. For this reason, the Secretary of Defense has had this document prepared and published.

Soviet Military Power presents a factual portrayal of the Soviet Armed Forces, a review intended to be as informative as possible on an issue of the utmost importance to the United States and its Allies.

The chart "Soviet Military Forces," on pages six and seven of Chapter I, depicts the size, composition and deployment of the USSR's Strategic Nuclear Forces, Ground Forces, Air Forces, Air Defense Forces and Naval Forces.

Chapter II, Military Resource Allocation, examines the Soviet and non-Soviet Warsaw Pact military industrial base, the world's largest in facilities and physical size.

Chapter III, Organization of Soviet Armed Forces, describes the USSR's strategic command structure, command and control, logistic support and combat doctrine.

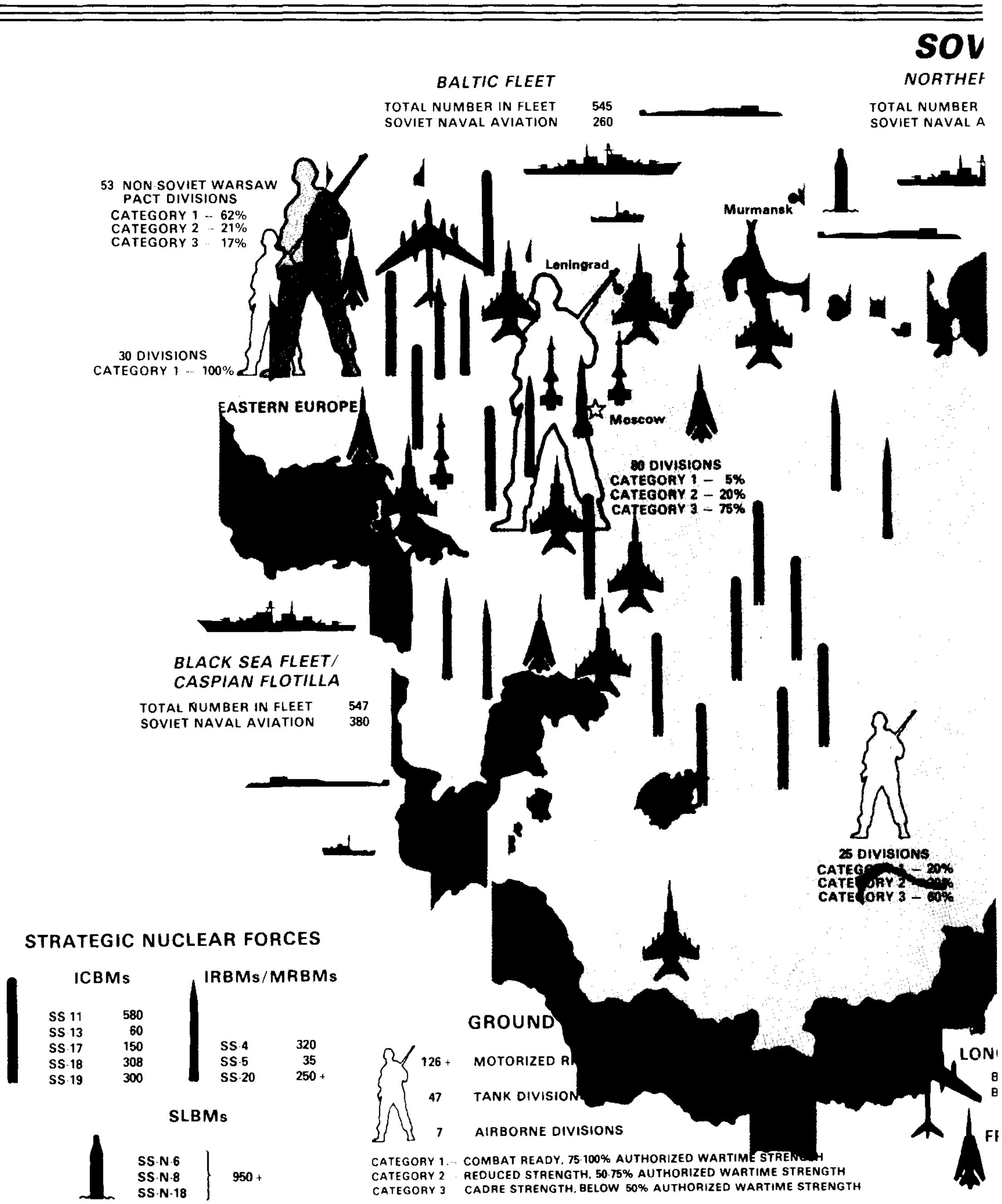
Chapter IV reviews those Soviet Armed Forces designated for theater operations, nuclear and conventional land, sea and air forces — forces geared to fast-paced offensive operations, forces arrayed against the nations of Western Europe.

Chapter V describes the increasing capabilities of the Soviet Strategic Forces, including the SS-17, SS-18, and SS-19 missiles of the ICBM forces, and the continuing modernization of the submarine launched ballistic missile forces.

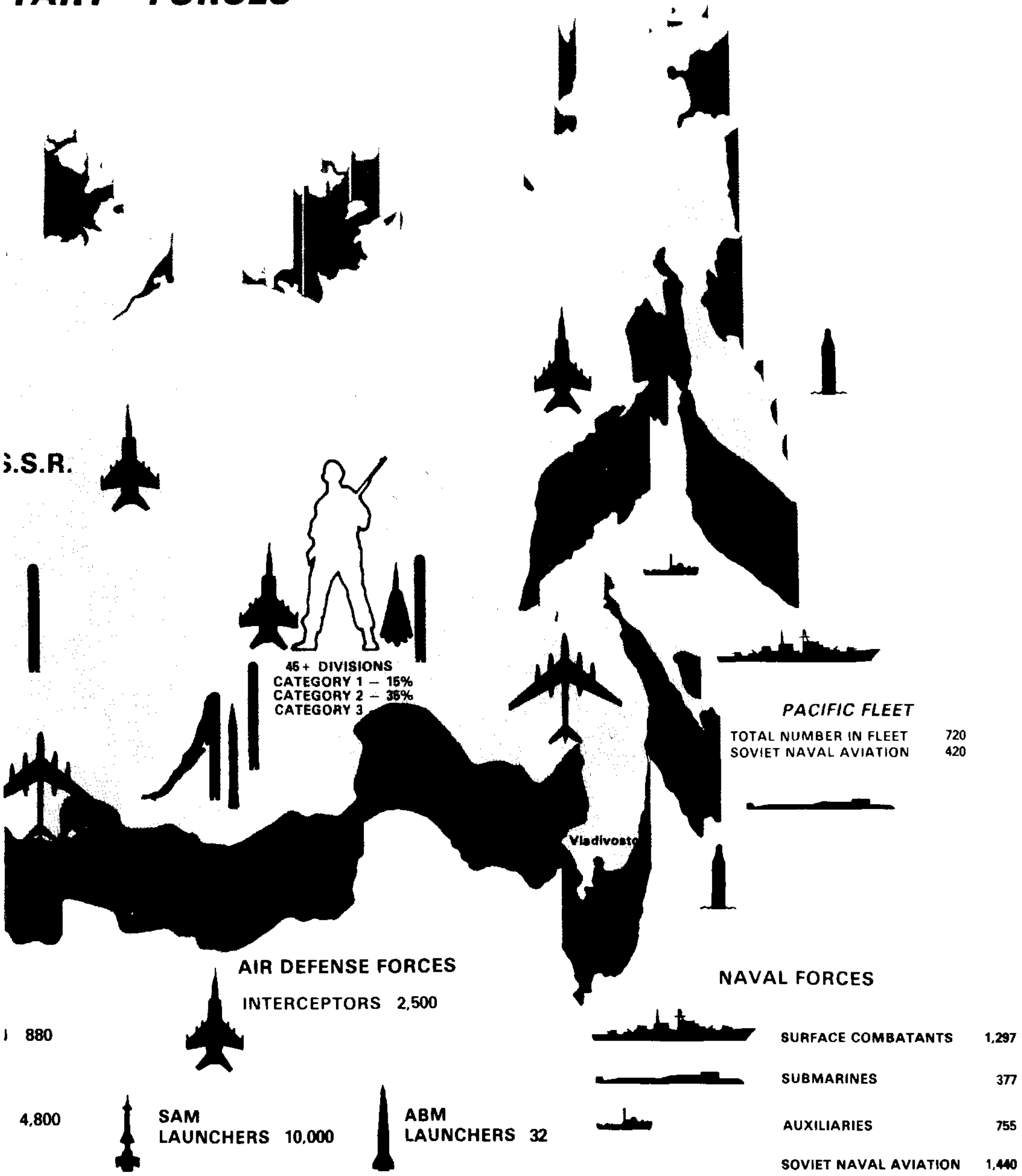
Chapter VI reports on the Research and Development effort behind the USSR's drive for modern military technology.

Chapter VII reviews the application of Soviet military power today, and Chapter VIII summarizes the challenge posed by the Soviet Armed Forces.

The Tupolev BACKFIRE, swing-wing, turbofan powered bomber capable of carrying free-fall bombs or air-to-surface missiles entered service in the mid-1970s. Thirty new BACKFIRES are being built each year in the continuing expansion and modernization of Soviet military power.

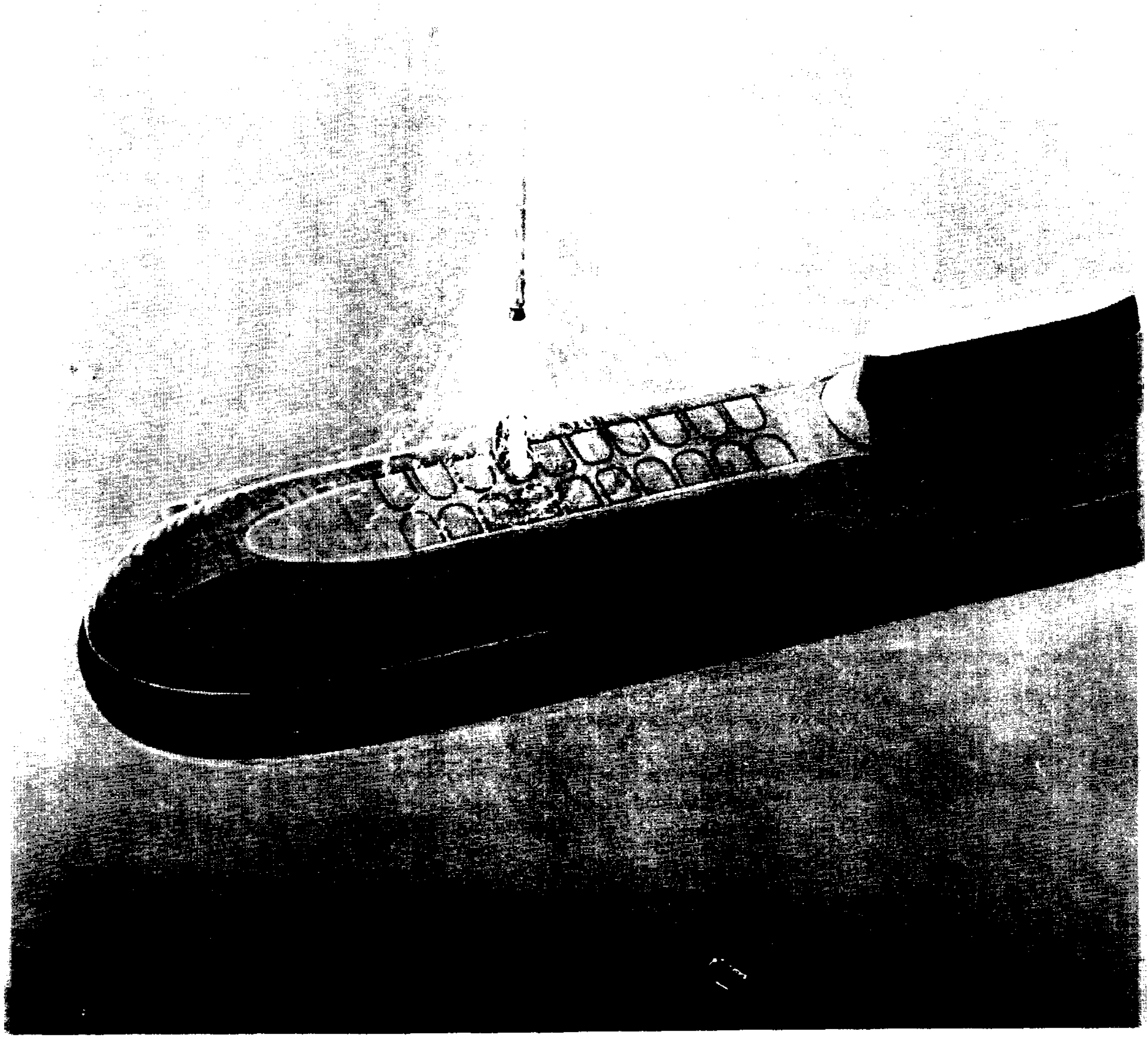

BALTIC FLEET
TOTAL NUMBER IN FLEET 545
SOVIET NAVAL AVIATION 260
TOTAL NUMBER
53 NON SOVIET WARSAW PACT DIVISIONS
CATEGORY 1 – 62%
CATEGORY 2 – 21%
CATEGORY 3 – 17%
Murmansk
Leningrad
30 DIVISIONS
CATEGORY 1 – 100%
Moscow
80 DIVISIONS
CATEGORY 1 – 5%
CATEGORY 2 – 20%
CATEGORY 3 – 75%
BLACK SEA FLEET/ CASPIAN FLOTILLA
TOTAL NUMBER IN FLEET 547
SOVIET NAVAL AVIATION 380
25 DIVISIONS
STRATEGIC NUCLEAR FORCES
ICBMs
SS 11 580
SS 13 60
SS 17 150
SS 18 308
SS 19 300
IRBMs/MRBMs
SS 4 320
SS 5 35
SS 20 250 +
SLBMs
SS-N-6
SS-N-8
SS-N-18
950 +
GROUND
126 + MOTORIZED
47 TANK
7 AIRBORNE DIVISIONS
CATEGORY 1 – COMBAT READY, 75-100% AUTHORIZED WARTIME
CATEGORY 2 – REDUCED STRENGTH, 50-75% AUTHORIZED WARTIME STRENGTH
CATEGORY 3 – CADRE STRENGTH, BELOW 50% AUTHORIZED WARTIME STRENGTH

'TARY FORCES

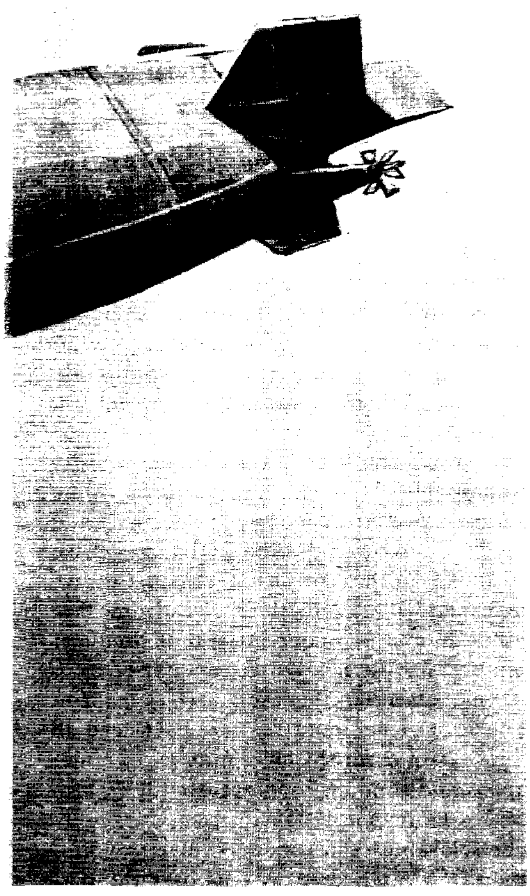


;.S.R.
45+ DIVISIONS
CATEGORY 1 – 15%
CATEGORY 2 – 35%
CATEGORY 3
Vladivost
PACIFIC FLEET
TOTAL NUMBER IN FLEET 720
SOVIET NAVAL AVIATION 420
AIR DEFENSE FORCES
INTERCEPTORS 2,500
880
4,800
SAM LAUNCHERS 10,000
ABM LAUNCHERS 32
NAVAL FORCES
SURFACE COMBATANTS 1,297
SUBMARINES 377
AUXILIARIES 755
SOVIET NAVAL AVIATION 1,440

II MILITARY RESOURC[illegible]



LLOCATION



In 1980, the first of the Soviets' TYPHOON-Class 25,000-ton strategic ballistic missile submarines was launched from a newly completed construction hall at the Severodvinsk Shipyard on the White Sea. Earlier in the year the same shipyard launched the first of the extremely large OSCAR-Class guided missile nuclear submarines, a submarine capable of firing 24 long-range, antiship cruise missiles while remaining submerged.

In 1980, some 2,400 kilometers southeast of Severodvinsk, the mammoth Nizhniy Tagil Railroad Car and Tank Plant, an industrial facility covering 827,000 square meters of floorspace, manufactured 2,500 T-72 tanks.

To support the continuing growth and modernization of the armed forces, the Soviet Union over the past quarter century has increased military expenditures in real terms, devoting an average of 12-to-14 percent of its Gross National Product each year to the Soviet military. The estimated dollar costs of Soviet military investment exceeded comparable US spending by 70 percent in 1979. The defense sector is the first priority of Soviet industrial production.

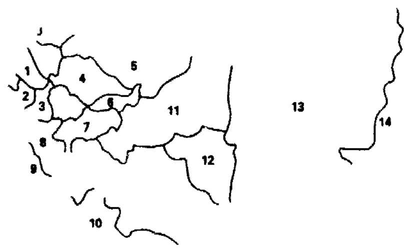
The Soviet and non-Soviet Warsaw Pact military industrial base is by far the world's largest in number of facilities and physical size. The Soviet Union alone produces more weapons systems in greater quantities than any other country.

The Soviet military industry has grown steadily and consistently over the past 20-to-25 years. Its physical growth and the commitment of large quantities of financial and human resources is its most dynamic aspect, but its

The TYPHOON 25,000-ton strategic ballistic missile submarine was launched from the Severodvinsk Naval Shipyard in 1980. Severodvinsk, one of five Soviet yards building submarines, has produced seven different classes in the last decade.

cyclical production is its most important. Production plants remain at work. As old weapons programs are phased out, new ones are begun, leaving no down times or long periods of layoffs and inactivity. The cyclical process, the continuing facility growth and the high rates of production keep the arms industry in a high state of readiness to meet any contingency and any demand for new weapons. The military production industry includes 135 major final assembly plants involved in producing weapons as end products. Over 3,500 individual factories and related installations provide support to these final assembly plants.

Major Soviet Manufacturing Areas



1. Strategic and Defensive Missiles
   Missile Engines and Motors
   Major Surface Combatants
2. Strategic Aircraft
   Aircraft Engines
   Major Surface Combatants
3. Armored Vehicles
   Tanks
4. Tactical Aircraft
   Aircraft Engines
   Strategic and Defensive Missiles
   Missile Engines and Motors
5. Major Surface Combatants
   Submarines
   Tanks
   Aircraft Engines
   Missile Engines and Motors
   Defensive Missiles
6. Submarines
   Tactical Aircraft
   Armored Vehicles
7. Major Surface Combatants
   Strategic and Tactical Aircraft
   Aircraft Engines
   Strategic Missiles
   Missile Engines and Motors
   Armored Vehicles
   Artillery, SP Guns and Multiple Rocket Launchers
8. Tactical Aircraft
   Missile Engines and Motors
9. Tactical Aircraft
10. Strategic Aircraft
11. Aircraft Engines
    Strategic Missiles
    Defensive Missiles
    Armored Vehicles
    Artillery, SP Guns and Multiple Rocket Launchers
    Tanks
12. Tactical Aircraft
    Aircraft Engines
    Missile Engines and Motors
    Armored Vehicles
    Tanks
    Artillery, SP Guns and Multiple Rocket Launchers
13. Strategic Missiles
    Tactical Aircraft
14. Major Surface Combatants
    Submarines
    Strategic Missiles
    Tactical Aircraft

Construction at the Severodvinsk Naval Shipyard illustrates the growth of Soviet facilities over time. Over the past decade seven classes of submarines have been produced, and during this time, floor space has increased by several hundred thousand square meters, or approximately three-quarters again the yard's size ten years earlier. The new large construction hall used to assemble the TYPHOON and OSCAR submarines accounted for about 25 percent of this increase. Moreover, Severodvinsk is only one of five Soviet yards producing submarines.

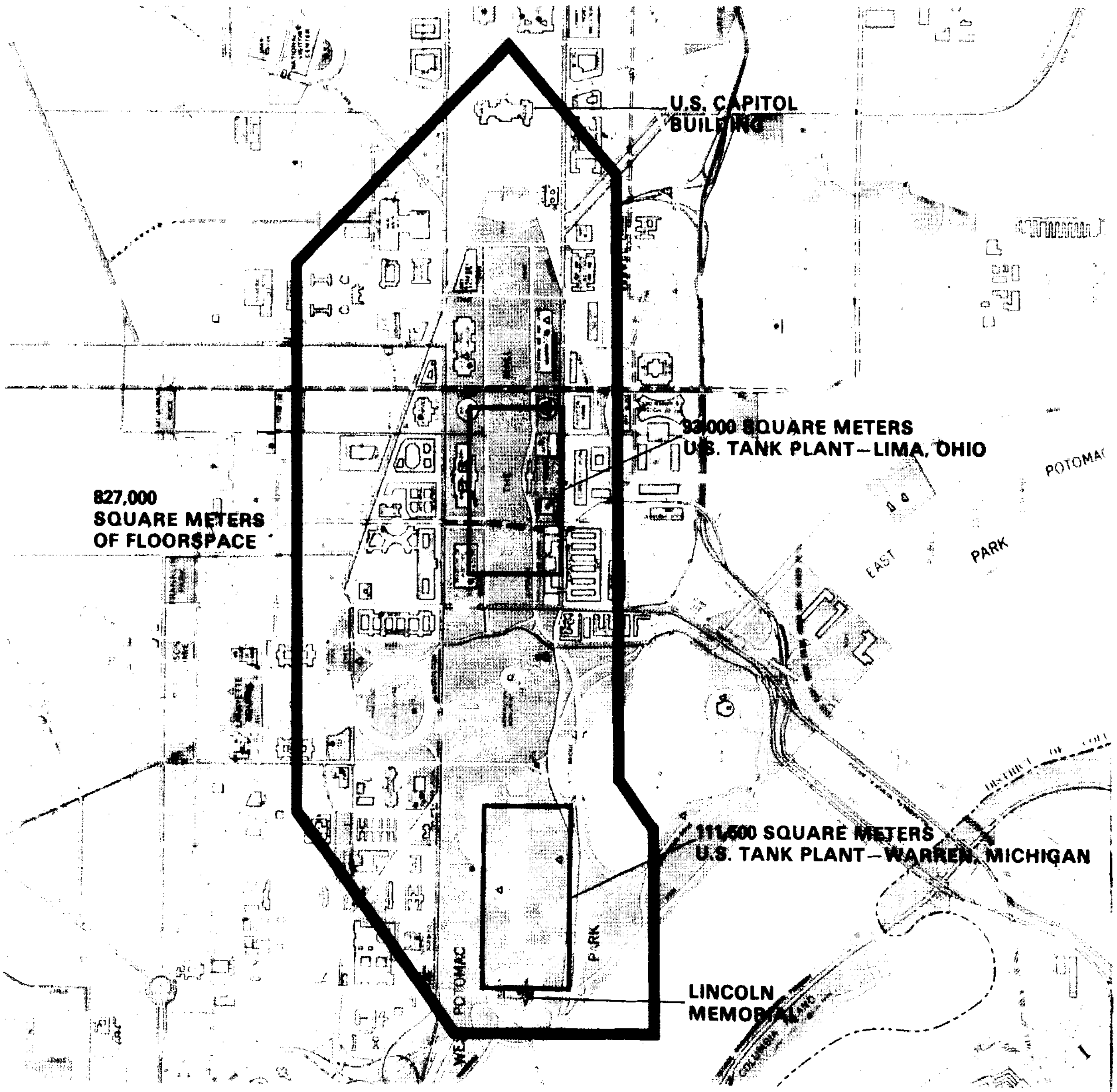
In the aerospace industry, even though there has been significant construction in recent years including a number of new large final assembly buildings at established plants, the Soviets have revealed that they are constructing a wholly new, large aircraft plant at Ulyanovsk. This plant, when completed, will be well-suited for the fabrication and assembly of large aircraft – transports or bombers – underscoring the Soviets' continuing drive to improve further their industrial base. Qualitative improvements in production technology, which typically accompany new and more sophisticated aircraft, have paralleled the physical growth of the industry.

The Army's sector of Soviet military industry is traditionally large to support the growing Ground Forces. Army industrial floorspace has expanded by over ten percent in the late 1970s. All segments of the Army's industrial base have been expanded despite their already massive size. For instance, a major Soviet tank producer which was already nearly five times as large as the US manufacturers, has again been expanded.

The Soviet Union and Warsaw Pact need all of these facilities for the large number of major weapons and support systems currently in production – more than 150 in all.

The following tables show estimates of production by weapon systems type over the past

AREA OF NIZHNIY TAGIL TANK PLANT
(Superimposed on Washington, D.C.)



Production of Ground Forces Materiel
USSR and Non-Soviet Warsaw Pact

	1976		1977		1978		1979		1980	
	USSR	NSWP	USSR	NSWP	USSR	NSWP	USSR	NSWP	USSR	NSWP
Tanks	2500	800	2500	800	2500	800	3000	800	3000	750
T-55	500	800	500	800	500	800	500	800	—	750
T-64	500	—	500	—	500	—	500	—	500	—
T-72	1500	—	1500	—	1500	—	2000	—	2500	—
T-80	—	—	—	—	—	—	Trial Output	—	Trial Output	—
Other Armored Fighting Vehicles	4500	1800	4500	1900	5500	1700	5500	1600	5500	1200
Towed Field Artillery	900	50	1300	50	1500	100	1500	100	1300	100
Self-Propelled Field Artillery	900	—	950	—	650	—	250	50	150	50
Multiple Rocket Launchers	500	250	550	200	550	150	450	150	300	150
Self-Propelled AA Artillery	500	100	500	100	100	50	100	50	100	50
Towed-AA Artillery	500	300	250	250	100	200	—	200	—	150
Infantry Weapons	250,000	140,000	350,000	120,000	450,000	200,000	450,000	115,000	400,000	100,000

five years. A five year period was selected to demonstrate the Soviet ability to sustain high rates of production.

Aircraft Production
USSR

Aircraft Type	1976	1977	1978	1979	1980
Bombers	25	30	30	30	30
Fighters/ Fighter-Bombers	1,200	1,200	1,300	1,300	1,300
Transports	450	400	400	400	350
Trainers	50	50	50	25	225
ASW	5	10	10	10	10
Helicopters	1,400	900	600	700	750
Utility	125	100	100	100	100
Total	3,255	2,690	2,490	2,565	2,765

The most important aspect of aircraft production is the sustained high rates of fighter aircraft production. Helicopter production shows a decline at midpoint, but then a gradual build-up probably indicating a phase-out/phase-in of a new system, or increased orders for helicopters.

Missile Production
USSR

Missile Type	1976	1977	1978	1979	1980
ICBMs	300	300	200	200	200
IRBMs	50	100	100	100	100
SRBMs	100	200	250	300	300
SLCMs	600	600	600	700	700
SLBMs	150	175	225	175	175
ASMs	1,500	1,500	1,500	1,500	1,500
SAMs	40,000	50,000	50,000	50,000	50,000

Missile production shows the wide range of missiles in production. Every class of missiles, from Surface-to-Air to ICBMs, is produced in significant quantities.

Naval ship construction demonstrates the USSR's capability to sustain high rates throughout. Moreover, the number of auxiliary ships produced in Eastern Europe has freed Soviet building ways for other projects.

Naval Ship Construction USSR

	1976	1977	1978	1979	1980
Submarines	10	13	12	12	11
Major Combatants	12	12	12	11	11
Minor Combatants	58	56	52	48	52
Auxiliaries	4	6	4	7	5

Ground Forces Materiel Production USSR

	1976	1977	1978	1979	1980
Tanks	2,500	2,500	2,500	3,000	3,000
T-55	500	500	500	500	–
T-64	500	500	500	500	500
T-72	1,500	1,500	1,500	2,000	2,500
T-80				Trial Output	Trial Output
Other Armored Vehicles	4,500	4,500	5,500	5,500	5,500
Self-Propelled Field Artillery	900	950	650	250	150

Soviet Army materiel production shows a jump in the output of tanks and other armored vehicles in 1979 and 1980. The production of self-propelled artillery, however, exhibits a steady decline since 1977. This probably represents the phasing out of production of an old weapon and the introduction of a new one. Such transition is fairly common in Soviet production practices. The evolutionary introduction of new systems continues. Overall, Soviet Ground Forces materiel production has increased over the past five years.

An even greater increase is evident when Soviet Ground Forces materiel production is combined with that of the Warsaw Pact allies.

These weapons systems are produced to equip Soviet and Warsaw Pact forces and for export. In recent years, in addition to being the world's largest producer, the USSR has become the world's largest exporter of major items of military equipment to the Third World.

To provide nuclear weapons for their Armed Forces, the Soviets have an adequate number of plutonium and uranium production facilities to ensure a sufficient quantity of necessary material for those forces, and to ensure the provision of material for other high priority needs as well.

What impact does this massive dedication of resources to military products have on the USSR? The Soviet Union and the countries of the Warsaw Pact have, over the past decade, faced deteriorating economies while at the same time sustaining high levels of military equipment production for an across-the-board force modernization. The Soviets' own economy is in difficulty and facing competing priorities for scarce resources as it begins the 11th Five Year Plan. The problems include food shortages, low labor productivity, transportation disruptions and energy constraints which have all combined to bring industrial growth to a post-1945 low. Externally, the high costs of supporting other communist regimes, also in difficulty, such as Cuba, Vietnam, Afghanistan and Poland have created an additional burden. These difficulties have grown at the end of a decade during which Moscow's policy has been to stress guns over butter. Throughout the 1970s the Soviets have consistently allocated from 12-to-14 percent of Gross National Product to military programs in spite of a marked downward trend in the rate of economic growth. If this trend continues, the percentage allocated to the military will increase. There are no signs of a deemphasis of military programs.

The economic burden of defense spending, as viewed in the West, is viewed differently in the Soviet Union. To the Soviets, defense spending is a necessity and a priority above all else. Productivity might continue to decline and the Soviets might have to face a negative growth rate, but the system of fostering massive military industrial production will continue.

III ORGANIZATION OF

VIET ARMED FORCES

Marshal of the Soviet Union and Warsaw Pact Commander-in-Chief Kulikov has written that the traumatic experience of World War II has taught the Soviets the necessity of having a fully operational strategic command structure in being prior to the onset of hostilities. To this end, the Soviets have created a wartime management structure which provides a unified system of command capable of exerting centralized direction, but designed to permit decentralization of functions to lower levels as necessary.

Immediate control of the Soviet land, sea and air forces is exercised by the Minister of Defense. Within the Soviet Government, the Minister of Defense is a member of the Council of Ministers, appointed by and technically answerable to the Supreme Soviet or to its Presidium. In practice he is responsible to the Central Committee of the Communist Party of the Soviet Union (CPSU) and its Politburo. The current Minister of Defense, Marshal of the Soviet Union Ustinov, is a member of the Politburo, as was his predecessor. The Defense Council, a subset of the Politburo chaired by the General Secretary of the CPSU, in effect functions as the controlling authority. In 1976, General Secretary Leonid Brezhnev was awarded the highest military rank, that of Marshal of the Soviet Union, possibly indicating that ultimate operational—as well as policymaking—control of the Soviet Union's Armed Forces was being vested in the Defense Council.

The combined arms army, the basic Soviet field army, includes four motorized rifle divisions, a tank division, an artillery brigade, missile units, frontal air support, and intelligence, chemical, engineer and signal units. There are more than 180 divisions in the Soviet Armed Forces today.

The key point to understand about the Soviet military control structure is that the reins of the instruments of state policy and power — not just the purely military — are in the hands of a tested political leadership supported by very experienced and long-established staffs. President Brezhnev and his key colleagues have been at the center of power for decades. Ustinov has guided the Soviet armaments industry since the early 1940s and has proven to be an able and decisive leader. These men, aided by such others as KGB Chief Andropov, Premier Tikhonov, Foreign Minister Gromyko, the ageless ideologue Suslov, Chief of General Staff Ogarkov, Warsaw Pact Commander Kulikov and lesser but equally experienced subchiefs of the military and industry, know how the Soviet military machine runs and what they want to achieve. They are able to marshal all available Soviet resources toward their strategic objective. They exercise absolute control of all instruments of Soviet power.

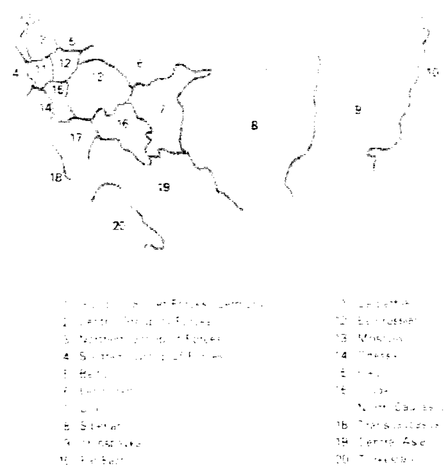
At the apex of the Soviet wartime strategic command structure is the State Defense Committee or GKO. The Defense Committee serves to unify the highest military and civilian leadership to insure centralized political direction of the entire war effort. This committee appears to consist of the permanent members of the peacetime Defense Council. Just as in World War II, the Defense Committee and its subordinate managerial entities would play a critical role in wartime economic mobilization and in overseeing sustained wartime production. Beneath the Defense Committee and its component elements is the vast ministerial structure of the Soviet government.

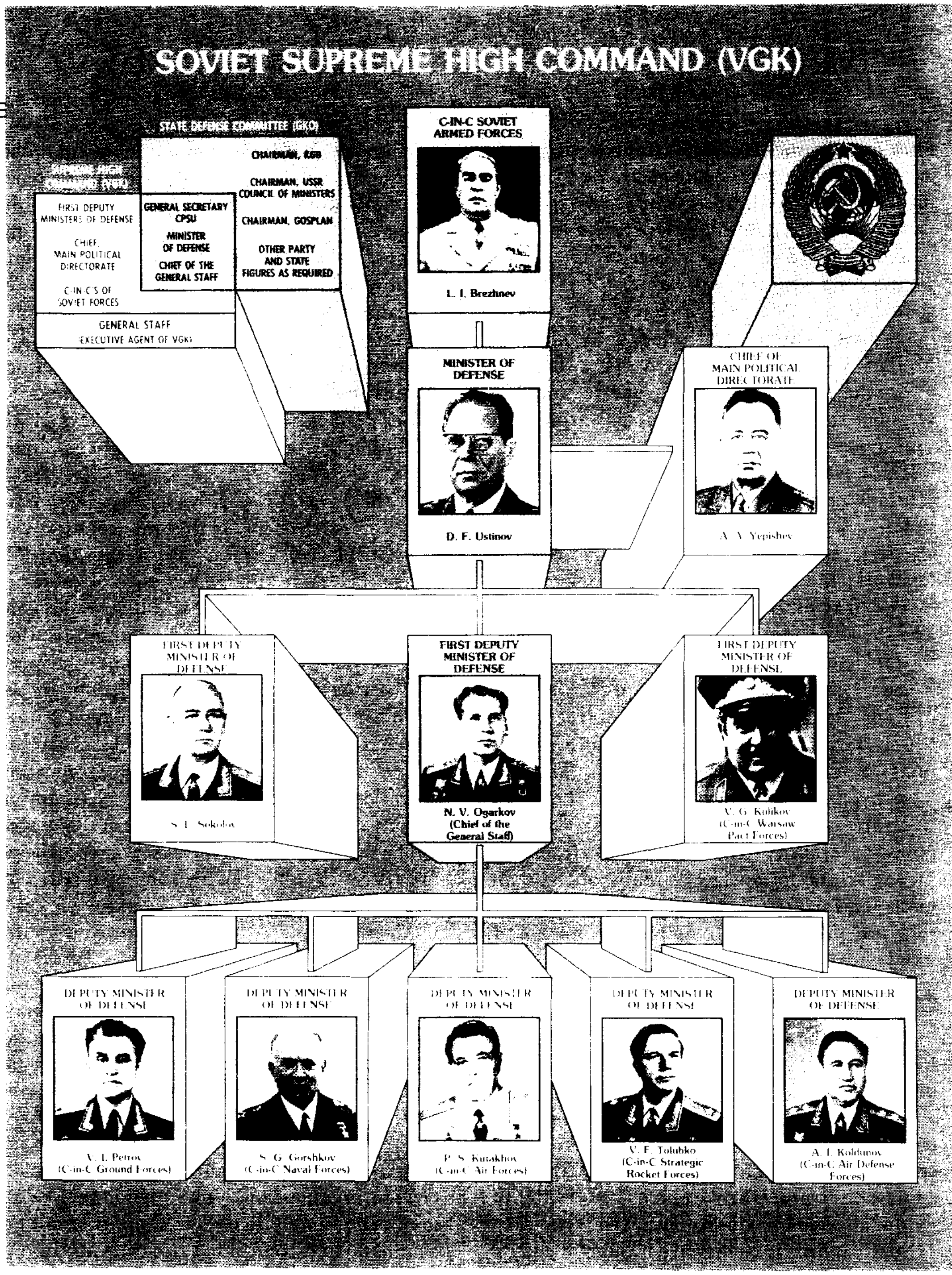
Under the guidance of the Defense Committee, a Supreme High Command (VGK) would serve as the highest organization of strategic military leadership. The Supreme High Command apparently includes the CPSU General Secretary, the Minister of Defense, the first Deputy Ministers of Defense, the Chief of the Main Political Directorate, and the Commanders in Chief of each of the five services. The contribution of the General Staff, serving as an executive agent for the VGK, would be to insure the development and execution of a unified military strategy for the operational commands.

In order to simplify the planning for war, the Soviets have divided the world into 13 Theaters of Military Operations, or TVDs. The Theater of Military Operations is a geographical concept used to denote an area within which their armed forces would function in wartime. There appear to be possibly five continental TVDs, four maritime or naval TVDs, and four intercontinental TVDs.

Recognizing that the Soviet Supreme High Command would find it difficult to exercise the direction of multi-theater operations without an intermediate command echelon, the Soviets have apparently established intermediate-level high commands. This Soviet conceptual frame-

Soviet Military Districts and Groups of Forces




SOVIET SUPREME HIGH COMMAND (VGK)
STATE DEFENSE COMMITTEE (GKO)
CHAIRMAN, USSR COUNCIL OF MINISTERS
CHAIRMAN, GOSPLAN
OTHER PARTY AND STATE FIGURES AS REQUIRED
GENERAL SECRETARY CPSU
MINISTER OF DEFENSE
CHIEF OF THE GENERAL STAFF
FIRST DEPUTY MINISTERS OF DEFENSE
CHIEF MAIN POLITICAL DIRECTORATE
C-IN-C'S OF SOVIET FORCES
GENERAL STAFF (EXECUTIVE AGENT OF VGK)
C-IN-C SOVIET ARMED FORCES
L. I. Brezhnev
MINISTER OF DEFENSE
D. F. Ustinov
CHIEF OF MAIN POLITICAL DIRECTORATE
A. A. Yepishev
FIRST DEPUTY MINISTER OF DEFENSE
S. L. Sokolov
FIRST DEPUTY MINISTER OF DEFENSE
N. V. Ogarkov (Chief of the General Staff)
FIRST DEPUTY MINISTER OF DEFENSE
V. G. Kulikov (C-in-C Warsaw Pact Forces)
DEPUTY MINISTER OF DEFENSE
V. I. Petrov (C-in-C Ground Forces)
DEPUTY MINISTER OF DEFENSE
S. G. Gorshkov (C-in-C Naval Forces)
DEPUTY MINISTER OF DEFENSE
P. S. Kutakhov (C-in-C Air Forces)
DEPUTY MINISTER OF DEFENSE
V. F. Tolubko (C-in-C Strategic Rocket Forces)
DEPUTY MINISTER OF DEFENSE
A. I. Koldunov (C-in-C Air Defense Forces)

work for intermediate-level strategic leadership is intended to accommodate centralized strategic planning with decentralized battle management.

The Theaters of Military Operations not only include the terrain upon which the *Fronts* would conduct their operations, but include those Military Districts that would support such operations. Thus, while forces may depart a Military District as battlefield operations progress, the Military District structure would be retained to serve as a principal wartime administrative entity.

The Soviets have carefully thought out and continue to develop the details of the system of strategic leadership. The system required for war fighting and war survival is now in place. Central to this system is the establishment of the means to ensure the survival of state control. The Soviets have, for years, been building an infrastructure of facilities and procedures which is geared to the survival of the means of control for the Communist Party of the Soviet Union during even the worst of conflict situations—a nuclear war. Alternative locations have been established for virtually the entire structure of the Soviet leadership—political, military, security and industrial—from the highest to the lowest levels. Many of these are bunkered facilities and certain levels of leadership are provided with mobile equipment as well.

COMMAND AND CONTROL

Utilizing the General Staff of the Ministry of Defense as its agent, the Soviet Defense Committee controls its military commands. To achieve this goal the Soviets have developed extensive and modern command, control and communications (C^3) systems. Soviet doctrine emphasizes centralized control, survivability, redundancy and flexibility within the system.

Survivability is achieved through dispersal, redundancy, hardness, concealment and mobility. Survivability is also enhanced by airborne command posts, which can be deployed to different locations to serve as alternate communications hubs in the event of war, hedging against the destruction of groundbase facilities.

Redundancy includes multiple command centers to assure continuity of the control of armed forces, and a wide variety of communications means and modes. Redundancy of Soviet C^3 facilities is also achieved through the establishment of main and alternate command posts.

In the Soviet Union, the strategic command and control system maintains contact with widespread civil and military authorities. The system includes extensive networks of cable and open-wire lines, radio-relay links, radio-communications stations, and communications satellites. Modern Soviet telecommunications engineering concepts stress the flexibility, survivability and reliability of the system to meet national military command and control requirements for continuous telecommunications operations. The major national telecommunications complex is known as the unified communications system. In the event of war, the entire system could be readily converted into a nationwide military communications network.

Automation of Soviet command and control is evolving. The Soviet Air Defense Forces and the Moscow antiballistic missile system employ automation most extensively. The major strength of the Soviet/Warsaw Pact automation program is that systems are being developed specifically for military requirements rather than adapting other systems to military use.

Soviet satellites provide communications support to military, diplomatic, intelligence, and civilian organizations. The predominant communications satellite used in support of military command and control has been the MOLNIYA

I system. Since the mid-1960s, when the first MOLNIYA I was launched, the Soviet Union has continued to improve its communications satellite program. The Soviet Union has launched the improved MOLNIYA II and MOLNIYA III systems which can be used for military command and control. The MOLNIYA I and II military ground sites are deployed at major headquarters throughout the Soviet Union, and stations are beginning to be deployed in Eastern Europe.

The Soviets are maintaining vigorous research and development programs to upgrade their C^3 systems emphasizing the use of cable as the primary means of communication when practicable, and increasing use of satellite and point-to-point systems operating in a number of frequency ranges.

The Soviets can be expected to increase their use of automated systems which will increase their data handling capabilities as well as increase reaction times. As in the past, Soviet command and control systems will continue to employ redundancy, hardness and mobility to enhance survivability.

LOGISTIC SUPPORT OF THE SOVIET ARMED FORCES

The Deputy Defense Minister who is Chief of the Rear of the Soviet Armed Forces (NTVS) has management responsibility for the overall system of rear service support to the armed forces.

The Deputy Minister and his staff are located at Ministry of Defense Headquarters in Moscow. The first deputy to the NTVS serves as Chief of the Main Staff of the Rear, which plays a key role in the logistic establishment. From the Ministry headquarters, the Staff administers the fuel, food, clothing, military trade and technical supply organizations, the military medical and veterinary organizations, and other directorates and departments. This centralized system also includes a large number of Rear Services brigades, regiments and battalions as well as installations, bases, depots, arsenals, repair plants and other support assets for all armed forces components. All aspects of the movement of military supplies received from the national economy are managed by the Rear Services staff. In this management capacity, the Rear Services staff coordinates the activities of the deputy commanders for Rear Services of each of the branches as well as at the Military District, groups of forces and tactical levels.

Soviet wartime logistic planning is carried on at three general levels: strategic, operational and tactical. The NTVS is the principal controller of the numerous and diverse logistic organizations and assets comprising what Soviet planners call the "central Rear Services." There is a Rear Services counterpart at each subordinate echelon down to regiment. This officer, who is designated a deputy commander as well as the Chief of the Rear, is directly subordinate to his unit or formation commander, and in addition carries out the policies and guidelines of Rear Service representatives at higher levels.

The entire Rear Services establishment is designed to support military operations of all the Armed Forces with consumable supplies, weapon system stocks, maintenance assets, transportation resources, local security and a variety of logistic services deemed integral to the successful conduct of combat operations. In wartime, central logistic units, resources and command/control entities, in addition to serving as a USSR-based resource pool, may be moved into Theaters of Military Operations directly to support operational formations and organize the use of theater resources. Military command post complexes are present at all tactical and operational echelons.

The Soviets, and their Warsaw Pact military allies, conceived a system for automating Pact

Rear Service command and control in the early 1960s. Variations of this system have been field tested over the last decade. The system is designed principally to enable the Chief of the Rear at operational/strategic levels rapidly to evaluate his resources and assets in light of an envisioned operation; to formulate a Rear Service plan which optimally supports the commander's concept of operations; and to respond to the support requirements generated by rapidly changing battlefield situations.

Today, in the European Theater, for example, the Rear Services of the Soviet Armed Forces already have in place vast stocks of all the logistic supplies—from fuel, to ammunition, to weapon systems stocks—required for sustained combat.

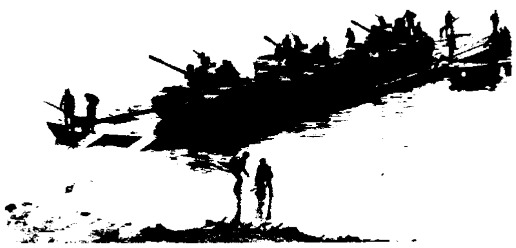
COMBINED ARMS WARFARE

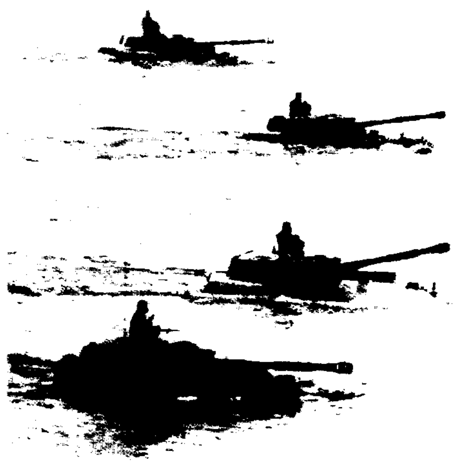
At the heart of Soviet combat doctrine is the concept of combined arms operations. To the Soviets, combined arms operations are more than the joint use of weapon systems and forces. The concept involves the bringing to bear of all systems and forces as needed in a unified and effective manner.

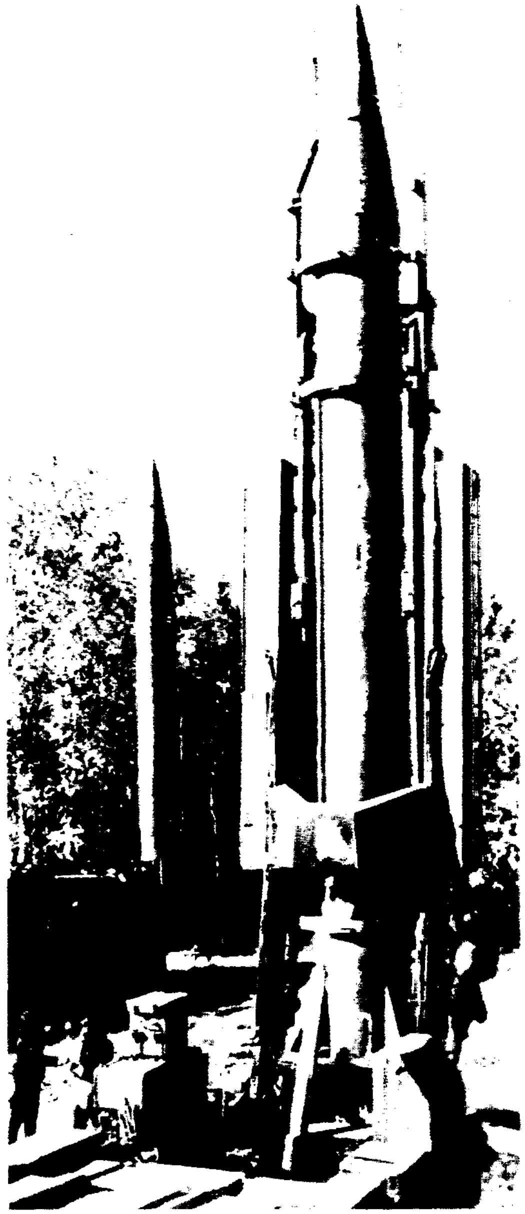
The Soviet Union's concept of combined arms operations, particularly at *Front* or theater levels, is much broader and more structured organizationally than the Western combined arms concept envisioning the joint and cooperative employment of ground, air and, if applicable, naval forces to achieve an objective. The operational definitions as provided by the Soviets in their combat doctrine permit a fuller understanding of the combined arms warfare concept.

- The Combined Arms Battle is a battle fought by a combined arms formation or unit together with attached formations or units of other service branches and aviation; and in maritime sectors, with naval forces as well. The use of nuclear weapons and the participation of the various service branches or forces, in conjunction with the great mobility of the troops, impart an especially decisive and maneuver-oriented character to combined arms battle.
- The Combined Arms Commander is the sole commander of a combined arms formation, unit, or subunit. He organizes the combined arms combat of the forces subordinated to him, and leads them in battle. He makes the decision to engage the enemy, assigns combat missions to subunits, coordinates the actions of his own combined armed troops with those of neighboring troops, and directs his staff, and the commanders of the service branches and Services.
- The Combined Arms Staff is the staff of a major field force or of a formation or unit which includes formations, units or subunits of various service branches. The combined arms staff ensures coordination between the staffs of the subordinated and cooperating troops, and those of the service branches, special troops, services and rear. The combined arms staff takes all measures necessary to ensure the comprehensive preparation of the troops for their combat missions, and to ensure constant command and control of the troops during the course of battle (or operation).

At the *Front* level the Soviets are organized to control and employ coordinated ground, air, missile, air defense and, if appropriate, naval formations. The combined military power of all weapon systems is applied in a fully integrated plan. To insure the control of activities, the *Front* has a combined arms commander who is responsible for carrying out missions approved







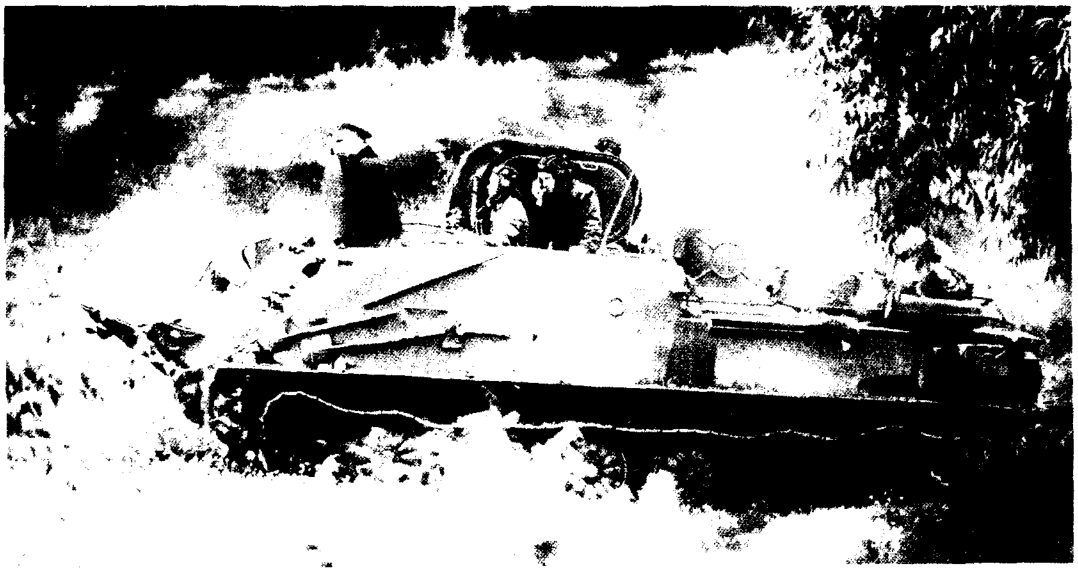
Combined Arms Warfare, at the heart of Soviet combat doctrine, brings units from the different services, such as the tank, infantry, self-propelled artillery and missile units shown here, under one Combined Arms Commander.

by the General Staff Plan. It is his responsibility to oversee and coordinate the operations of his subordinate units and the commanders of the other services subordinated under his command. If the *Front* is operating near or in a maritime sector, naval forces will be under his command. As stated in the definition, he must also coordinate his activities with neighboring troops, most probably another *Front*.

The *Front* is the largest field formation in wartime. It is a tactical and administrative unit with size and composition subject to considerable variation depending upon the situation. A *Front* could be composed of three-to-five combined arms armies, one or two tank armies, plus aviation, air assault, diversionary, artillery, missile, air defense, engineer, signal, intelligence, reconnaissance and rear service units.

A combined arms army might include three or four motorized rifle divisions and a tank division, plus artillery, missile, air defense, engineer, chemical defense, signal, intelligence, reconnaissance and rear service units.

The role of the tank army, a heavily armored force of tanks and motorized rifle troops, is to rupture and penetrate enemy defenses and to exploit breakthroughs deep into the enemy's rear areas. This army is a tactical and administrative unit capable of independent operations, although its normal employment, like that of the combined arms army, is as a component of a *Front*. The size of the army and its force composition are dependent upon the mission, the situation and the area of operations. There are three different types of maneuver divisions in the field forces: motorized rifle, tank, and airborne. The motorized rifle and tank divisions are the major combat and maneuver elements of the ground combat forces. Divisions are organized on a triangular basis. The motorized rifle division has three motorized rifle regiments, one tank regiment, one artillery



Armored Command Vehicle

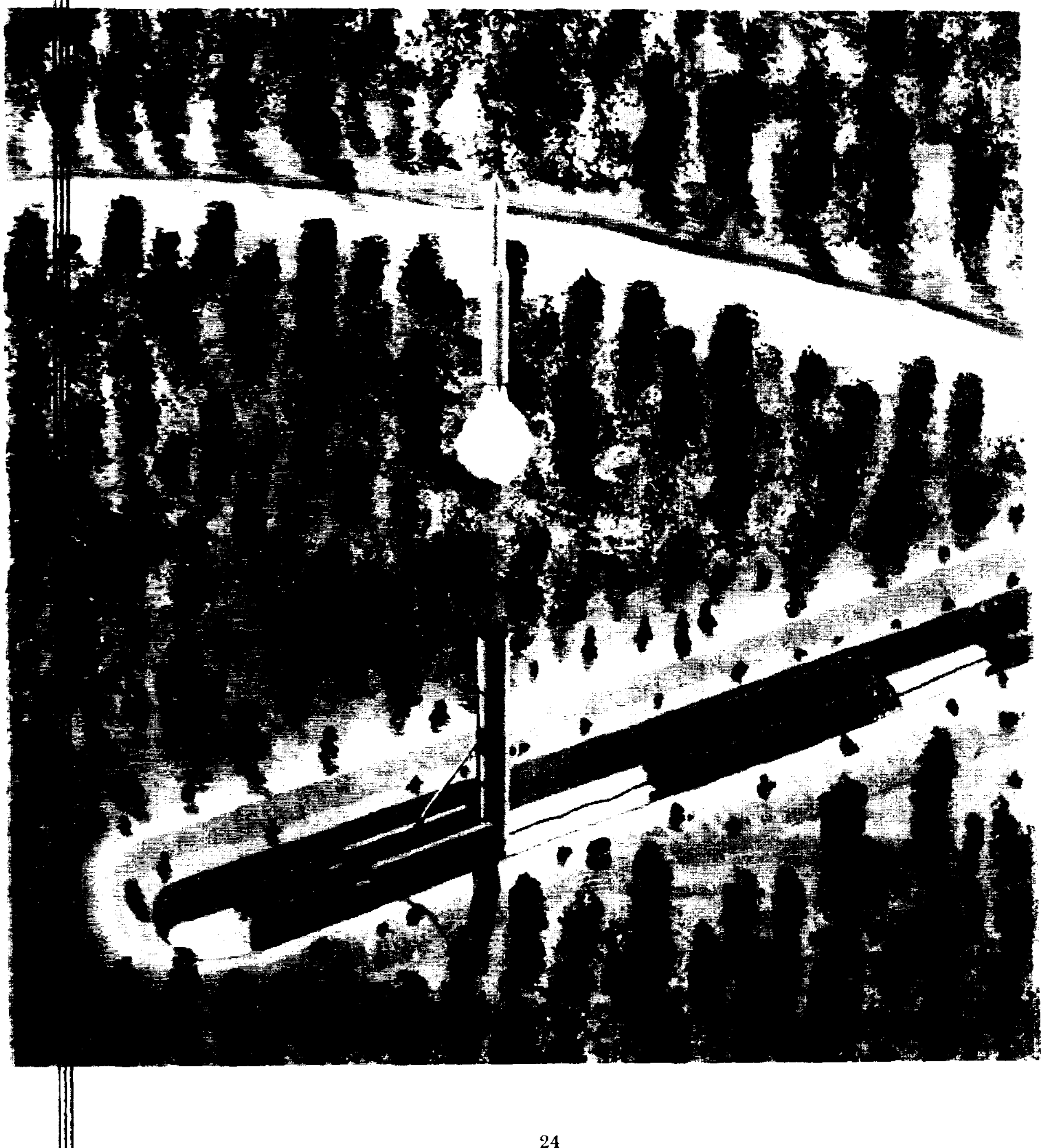
Mi-24/HIND A Assault Helicopter

regiment, one air defense regiment and other support elements. The tank division forms around three tank regiments, one motorized rifle regiment, one artillery regiment, one air defense regiment and other support elements. Three airborne rifle regiments are the nucleus of the airborne division.

As few as one *Front* and as many as five may exist in a Theater of Military Operations (TVD). A High Command of Forces in a TVD is commanded by at least a three star general who is directly responsible to the Soviet General Staff. The commander is supported by a combined arms staff with the responsibility for overseeing and coordinating the activities of the various strategic formations. At the theater level the commander insures that the plans of the General Staff for his forces in the theater are carried out.

The General Staff controls the operations of the five services, while individual service chiefs are responsible for the training and support of troops, the development of tactics and the acquisition of weapons systems for their respective services. The services function under the General Staff to assure the mutual supportiveness of their training, tactics, and weapons acquisitions. In a wartime situation, the same system would apply, but the General Staff would operate as the executive agent of the national leadership and would adopt plans for control of the forces. The Soviets have organizationally structured their forces to form a unified command structure under the General Staff. This provides the Soviets with the command structure to apply the totality of their military power in warfare so that the whole of the operation is greater than the sum of its parts.

IV SOVIET THEATER F



CES

Over the past 15 years the Soviets have steadily expanded and upgraded their military forces designated for theater operations with particular attention directed toward the European theater. During this period, the Soviet objective for this modernization has been the conversion of the Red Army from a balanced offensive-defensive force to one geared to fast-paced offensive operations. A key aim appears to have been the provision in peacetime of a standing Army at the leading edge of the potential battlefield such that it could begin operations with minimal mobilization and, thereby, with little warning.

The forces are highly mobile, and they are organized and supplied for a rapid initial push from a peacetime posture. At the outset of a war, the Soviets plan to move quickly slicing through NATO forces in the Central Region and driving to the English Channel while concurrently securing the northern and southern flanks. During the initial operations, necessary additional forces would be mobilized and moved to the battlefield. All of this the Soviets aim to accomplish before the full weight of NATO reinforcements could be brought to bear. The Soviets have given priority attention to all elements of their Armed Forces with a role to play in the sweep across Europe. Modernization and upgrading is underway in each of the following elements of Soviet Theater Forces:

Long Range Missile and Air Forces
Ground Forces
Frontal Aviation
Military Transport Aviation
Special Purpose Forces
Navy

Soviet theater nuclear forces are being deployed in increasing numbers against Western Europe and Asia. Some 250 SS-20 mobile, MIRVed nuclear warhead, Intermediate Range Ballistic Missiles have been deployed. Three warheads per missile greatly increase Soviet firepower; mobility increases survivability.

LONG-RANGE THEATER MISSILES

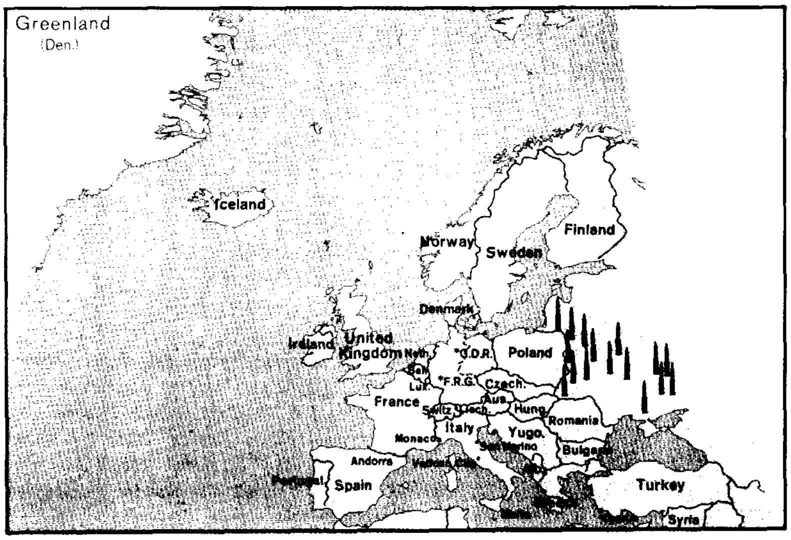
Since the advent of the nuclear-tipped ballistic missile, the Soviets have dedicated significant numbers of nuclear, land-based missiles to theater warfare missions. No theater has been neglected, but the European theater has always commanded the greatest attention. The first medium-range ballistic missiles (MRBMs — 1,000-to-3,000 kilometers) were fielded in the late 1950s, followed by improved MRBMs and new intermediate-range ballistic missiles (IRBMs — 3,000-to-5,000 kilometers) in the early 1960s.

Soviet MRBM/IRBM Characteristics

	Warhead	Range	Propellant	Mobility
MRBM				
SS-4 SANDAL	1	2,000	Liquid	Fixed
IRBM				
SS-5 SKEAN	1	4,100	Liquid	Fixed
SS-20	3	5,000	Solid	Mobile

More than 700 fixed launchers for these systems — the SS-3 and SS-4 MRBMs and the SS-5 IRBM — were operational at peak deployment in the mid-1960s. All but approximately 100 were directed at targets in or related to the European theater. The remainder were directed against the Middle East, South Asia and the Western Pacific littoral. China was not then a target. In the late 1960s, the Soviets began to draw down these, by then, obsolescent missiles, replacing them with ICBMs and adding coverage of the new enemy — China.

This situation remained unchanged until 1977 when the SS-20 IRBM first reached operational status. Previously, the theater-dedicated strategic nuclear missiles were based at fixed, vulnerable sites, and each missile carried only one warhead — although provisions for force reconstitution and refire were made. The SS-20 eliminated most of these weaknesses. Its launchers are highly mobile, and each SS-20 is fitted with three, very accurate and independently targetable (MIRVed) warheads. Moreover,

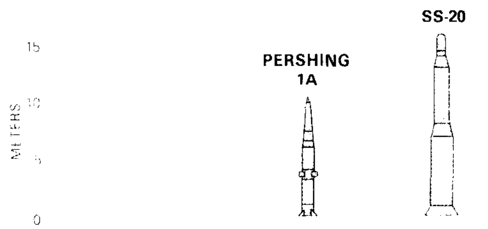


As the number of SS-20 missile launch sites in the Western USSR continues to grow, the Soviets intensify their tactical nuclear strike capability specifically targeted against Western Europe — SS-20 range and coverage extend beyond the shaded area.

Soviet Medium and Intermediate Range Ballistic Missiles

each SS-20 unit is equipped with refire missiles—one per launcher—and each refire missile is fitted with three warheads. Thus the firepower of the theater strategic nuclear missile forces is being greatly multiplied, even though the Soviets are withdrawing older SS-4s and SS-5s from the forces as the SS-20s are deployed.

As of July 1981, some 250 SS-20 launcher/missile sets equipped with a total of 750 nuclear warheads had been deployed. Of these, 175 with 525 warheads are deployed opposite the NATO countries. There is no sign that the deployment is slackening. Since January 1981, the pace of SS-20 base construction has increased, particularly opposite the NATO nations. At bases known to be under construction, another 65 launchers with some 195 warheads will be deployed. Perhaps as many as 100-to-150 additional launchers—300-to-450 warheads—could be fielded before the deployment program reaches its conclusion. While this modern nuclear force will continue to exhibit the full coverage of theater targets around the Soviet Union's periphery, it will be concentrated primarily against the European theater.



	PERSHING 1A	SS-20
INTRODUCED	1969	1977
RE-ENTRY VEHICLES	1	3
RANGE	160-740 KM	5000 KM
MODE	MOBILE	MOBILE
PROPELLANT	SOLID	SOLID
GUIDANCE	GYRO-AUTO-REFERENCE	INERTIAL
REACTION TIME (MAX.)	LESS THAN 1 HOUR	1 HOUR +

Characteristics of Primary US & Soviet Theater Missiles

THE SOVIET GROUND FORCES

The Ground Forces, with a strength of 1,825,000, constitute the largest of the five major components of the Soviet Armed Forces. Traditionally, Imperial Russian and Soviet armies have been characterized by great numbers. Today, the Ground Forces are highly modernized and well equipped, possessing great firepower and mobility. Manpower and materiel combine to make the present Soviet Ground Forces the most powerful land army in the world.

Soviet leaders view an upgrading of the Soviet Ground Forces, in concert with an expanded Navy and improved strategic air transport capabilities, as adding a desirable flexibility to the exercise of Soviet military power on a global basis. The addition of some 30 divisions since about 1967 also reflects the Soviet view that war without resort to nuclear weapons, or at least without resort to strategic nuclear exchange, may be possible. To achieve these aims Soviet doctrine calls for clear-cut superiority at the outset of a conflict. Increased availability of helicopters, armored vehicles, amphibious vehicles, self-propelled artillery weapons and surface-launched guided missiles has provided the Ground Forces with unprecedented flexibility, mobility and firepower.

Strength and Disposition: The Soviet Ground Forces currently contain more than 180 divisions at various stages of combat readiness. Of this total, 71 percent are motorized rifle divisions, 25 percent are tank divisions and four percent are airborne divisions.

These divisions are disposed as follows:

79 percent of the total are stationed inside the Soviet Union.

16 percent are stationed in Eastern Europe (East Germany, Poland, Czechoslovakia, and Hungary).

3 percent are stationed in Mongolia.

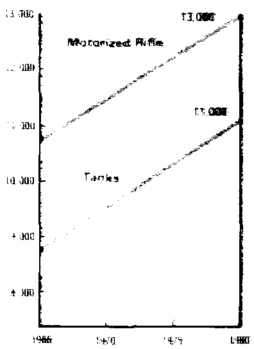
2 percent are engaged in combat operations in Afghanistan.

There are four basic deployment groupings: against NATO, against China, against the Middle East, and a strategic reserve. The largest, best-equipped and most combat ready of these is the Ground Forces group deployed against NATO.

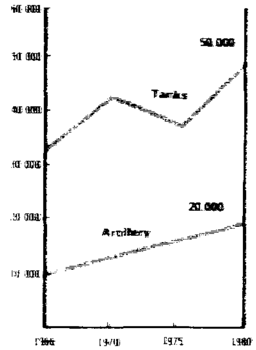
Modernization Program: The following graphs show the changes in manpower by type of division and the changes in the number of deployed tanks and artillery since 1966. Increases in personnel to 11,000 men in a tank division and almost 13,000 men in a motorized rifle division have resulted in an increase in the number of tanks and mobile combat vehicles per division.

Since the mid-1960s, the Soviets have engaged in a program of modernizing and upgrading ground forces to ensure a capability for carrying out offensive doctrine. Comprehensive in scope, this program has involved large-scale improvements in mobility, fire power, shock action, command and control, obstacle crossing capability, air defense, electronic warfare and logistical support. New and advanced equipment has been introduced. Highlights of this program, which has resulted in formidable and increasingly capable ground forces that now

Soviet Manpower by Type of Division 1966-1980



Soviet Tanks and Artillery 1966-1980



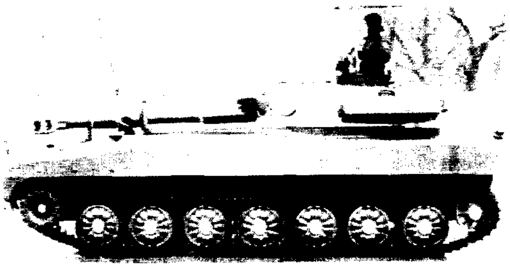
face NATO Europe and other areas contiguous to the USSR, include:

- Deployment of T-64 tanks in the Group of Soviet Forces, Germany (GSFG); fielding of T-72 tanks into Soviet units in the Western Military Districts; introduction of small numbers of T-72s in most non-Soviet Warsaw Pact armies; and continued development of a new tank, designated the T-80.
- Expansion of both division and non-division artillery units and some replacement of older, towed guns by self-propelled 122- and 152-mm weapons.
- Upgrading tactical capabilities by deployment of nuclear-capable heavy artillery brigades equipped with 203-mm howitzers and 240-mm mortars, and the introduction of the more accurate, longer-range and more mobile SS-21 and SS-X-23 tactical surface-to-surface missiles (SSMs) in ground forces as replacements for older FROGs and SCUDs.
- Replacement of the 900 kilometer SS-12 SCALEBOARD tactical missile with the more accurate SS-22.
- Replacement of older air defense gun

systems by a new family of surface-to-air missiles, some of which could have capabilities against enemy tactical ballistic missiles.

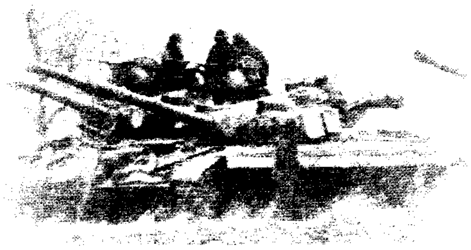
- Introduction of advanced radio systems and communications satellite equipment, airborne command posts and the gradual development of automated systems to enhance command, control and communications.
- Introduction of infantry combat vehicles into Soviet motorized rifle units, and the use of airborne assault vehicles and newly identified variants in airborne units.
- Introduction of Air Assault Brigades at the *Front* level.

Each of these deployments increases the Ground Forces' capability to launch a rapid thrust through Europe, the central theme of Soviet military thought.



122mm Self-Propelled Howitzer

152mm Self-Propelled Howitzer



T-64A Main Battle Tank

T-72 Main Battle Tank

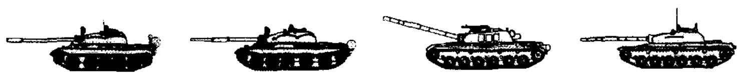
The evolution of Soviet tanks illustrates the extent of Soviet Ground Forces modernization. Beginning in the late 1960s, the Soviets fielded the first and most sophisticated of their modern family of main battle tanks, the T-64A incorporating a number of unique and innovative features including:

- A 125-mm smoothbore gun and an automatic loader which allows reduction in crew size from four to three.
- Unconventional frontal armor and the inclusion of movable armored plates along the side of the hull.
- A compact, turbocharged diesel engine with a high horsepower-to-ton ratio.

The T-64A began deployment to the Group of Soviet Forces, Germany in 1976, and, since 1980, has been deployed to the Southern Group of Forces in Hungary.

The T-72, a high production tank complementary to the T-64A, entered operation in the

Main Battle Tanks



	T-54/55	T-62	T-64	T-72
WEIGHT (TONS)	36	37	35	41
SPEED (KM/HR)	50	50	50	60
MAIN ARMAMENT	100mm TANK GUN	115mm SMOOTHBORE	125mm SMOOTHBORE	125mm SMOOTHBORE
MUZZLE VELOCITY (MPS)	1,400	1,600	1,750	1,750

mid 1970s. This tank incorporates many of the features of the T-64A such as the 125-mm smoothbore gun and automatic loader and unconventional armor in the form of layered or laminate armor in the upper hull.

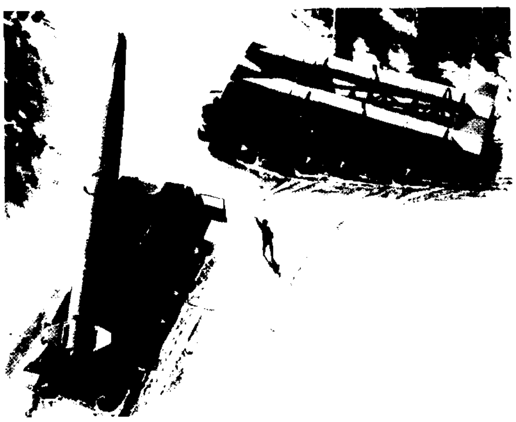
The direct fire range for the 125-mm gun is 2,000 meters firing the kinetic energy round. This means that at all ranges out to 2,000 meters, the gunner merely places a crosshair on the target and fires. In the 125-mm gun the automatic loader allows a rate of fire up to eight rounds per minute. For mobility, the 41 metric ton T-72 is powered by a 780 horsepower diesel which allows a top road speed of 60 kilometers per hour, and a cross country trail speed of up to 45 kilometers per hour.

While the T-64A and T-72 are formidable systems, the Soviets are nearing production of an even newer tank, the T-80.

Simultaneously with modernization activities, Soviet ground divisions also are undergoing a personnel and equipment expansion program. Major aspects involve the addition of an artillery battalion to the tank regiments of tank and motorized rifle divisions; expansion of the motorized rifle company to a battalion within tank regiments of tank divisions; and the addition of medium tanks to the reconnaissance battalions of both types of divisions. The expansion program has included the Group of Soviet Forces, Germany.

TACTICAL NUCLEAR WEAPONS

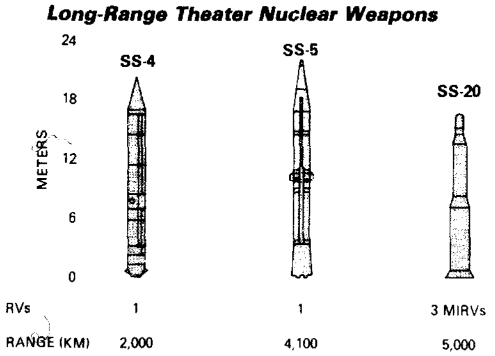
The Soviets have deployed large numbers of tactical nuclear delivery systems, and we believe they have stockpiled reloads for these systems. The Soviets rely on dual-capable systems for most of their shorter-range theater nuclear delivery capability and have adapted some of their 203-mm and 240-mm artillery pieces deployed in the USSR to fire nuclear projectiles. Towed 203-mm and 240-mm weapons are being re-



FROG Tactical Nuclear Surface-to-Surface Missile

placed with self-propelled models. 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). An increase in the number of nuclear-capable systems combined with modernization of these systems give the Warsaw Pact improved nuclear options. A *Front* normally has tactical rockets, such as the free-rocket-over-ground (FROG), and operational-tactical missiles (SCUDs) to complement nuclear-capable artillery, aviation and other longer-range missiles.

Long-Range Theater Nuclear Weapons



The follow-on to the FROG, the SS-21, has improved accuracy and range. Initial operational capability for the SS-21 was attained in 1976; however, only a few have been deployed.

Until recently, the West relied extensively upon the qualitative superiority of its forces to offset the numerical superiority of the USSR and its allies. That margin of quality is rapidly diminishing in the face of a massive Soviet effort to modernize its forces and those of its Warsaw Pact allies. Modern tanks, armored fighting vehicles, artillery, rocket launchers, antiaircraft artillery, surface-to-air and surface-to-surface missiles, and other weapons now being fielded in large quantities are the direct result of an intensive, multi-year Soviet investment program. This program is expected to continue in spite of predicted Soviet economic problems. The Soviet advantage in tanks, presently about three to one in the European theater alone, will grow throughout the decade.

THEATER BOMBERS

BADGER, BLINDER and BACKFIRE aircraft assigned to both Soviet Long Range Aviation and Soviet Naval Aviation could be used to carry out missions covering all of NATO Europe. While the BEAR and BISON bombers also could perform theater roles, they are reserved primarily for intercontinental strike missions. The most notable feature of the theater bomber force is its age: fully three quarters of the aircraft are over ten years old, and only the BACKFIRE remains in production.

These medium bombers have a primary land attack role, intended for either a nuclear or a conventional war scenario. In their nuclear use, the bombers would complement strikes by the Soviets' medium and intermediate range ballistic missiles. The primary objective in either case would be to free the Strategic Rocket Forces to concentrate on highest priority, time-urgent NATO targets.

FRONTAL AVIATION

The Soviet Air Force is separated into three distinct air arms to include: Long Range Aviation, Frontal or Tactical Aviation and Military Transport Aviation.

Frontal Aviation is the largest component of the Soviet Air Force and is organized into Tactical Air Armies consisting generally of fighter, fighter-bombers, transports, helicopters and reconnaissance units as well as miscellaneous support units. Tactical Air Armies are located in 12 Soviet Military Districts and with the Groups of Soviet Forces in East Germany, Poland, Czechoslovakia and Hungary. These tactical air armies account for some 4 800 fixed wing combat aircraft, 250 transports and 3,500 helicopters.

Since the early 1970s, the introduction of modern aircraft such as the FENCER, FITTER C&D, FOXBAT and FLOGGER has steadily improved the offensive capabilities of Frontal Aviation, turning the Soviets' Tactical Air Forces from a force basically defensively-oriented to one now with significantly enhanced offensive capabilities for theater warfare. These aircraft carry loads of bombs, rockets and guided munitions, 2,000-to-8,000 kilograms in weight, to radii between 350 and 1,500 kilometers. The counterair fighters carry improved air-to-air missiles to ranges in excess of 900 kilometers. These aircraft also incorporate upgraded avionics. The entire counterair and about 75 percent of the ground attack force are comprised of aircraft introduced in the past decade.

Frontal Aviation possesses five basic aircraft in support of ground force operations.

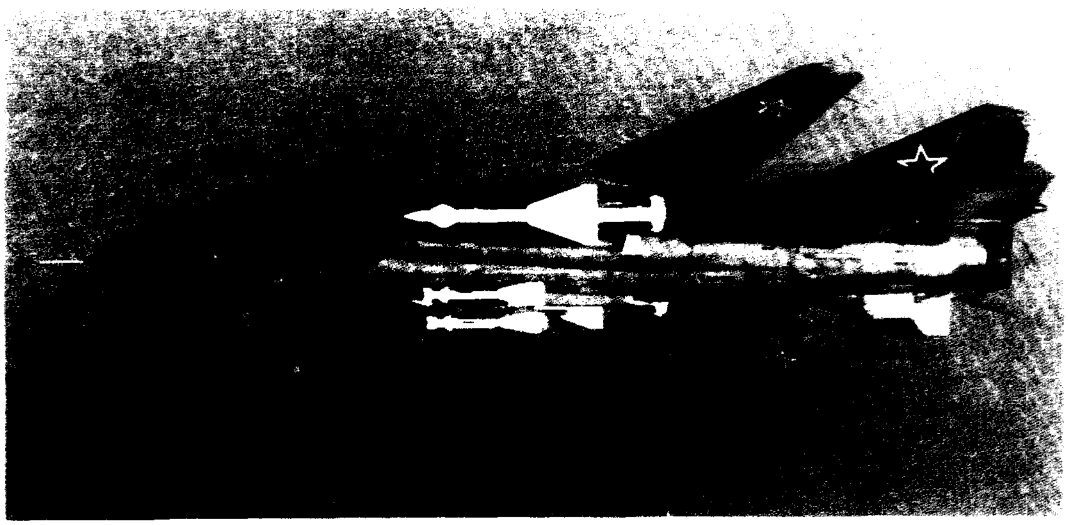
FLOGGER

Currently 1,400 FLOGGER B D G J are operational in Frontal Aviation.

FLOGGER B G – all weather counterair fighter
FLOGGER D J – all weather ground attack aircraft
FLOGGER E – export version of FLOGGER B
FLOGGER F – export version of FLOGGER D
FLOGGER H -- export version of FLOGGER D

Flogger

	FLOGGER B/G	FLOGGER D/J
Max Payload (kg)	6xAAMs	3,500
Combat Radius (km)	900-1,200	550-800
Service Ceiling (m)	18,000	16,000



MiG-23/FLOGGER B All-Weather Counterair Fighter

FISHBED

Some 1,300 FISHBED can be found in Soviet units, although the FLOGGER is replacing the FISHBED as the standard combat fighter in the Soviet Air Force.

FISHBED E — short-range, clear-air fighter
FISHBED D through N — (except H and M) all-weather counterair fighters
FISHBED H — reconnaissance platform

Fishbed

	FISHBED E	FISHBED L/N
Max Payload (kg)	2xAAMs	4xAAMs
Combat Radius (km)	350-650	550-900
Service Ceiling (m)	17,000	18,000

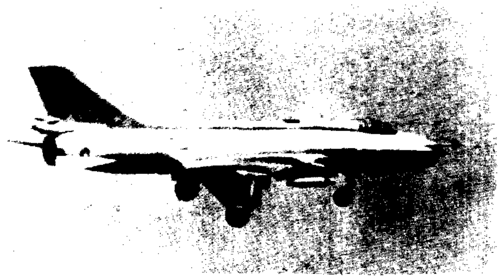
MiG-21/FISHBED N All-Weather Interceptor

FITTER

There are four ground attack and one reconnaissance variants of the FITTER operationally deployed with Warsaw Pact Forces, with only FITTER A and C in the national air arms thus far.
FITTER A — swept wing clear-air ground attack aircraft (200 operational with Soviet units)
FITTER C/D/H — swing-wing all-weather ground attack aircraft (650 operational in Soviet units)

Fitter

	FITTER A	FITTER C/D/H
Max Payload (kg)	2,000	3,500-4,000
Combat Radius (km)	250-350	550-900
Service Ceiling (m)	15,000	18,000



Su-17/FITTER C Swing-Wing Ground Support Fighter

FOXBAT

Two variants of the FOXBAT are deployed in operational service with Soviet frontal aviation; both are reconnaissance platforms.

Foxbat B/D

Max Payload:	Reconnaissance package only
Combat Radius (km)	1,100
Service Ceiling (m)	27,000

MiG-25/FOXBAT High Altitude Supersonic Interceptor

FENCER

The FENCER, operational since 1974, was the first modern Soviet aircraft designed specifically for a ground attack role and the first to carry a weapons system officer. There are 400 FENCERs operational.

Fencer	
Max Payload (kg)	**8,000**
Combat Radius (km)	**1,800**
Service Ceiling (m)	**17,500**

Su-24/FENCER Ground Support Aircraft

Replacing the old Yak-28/BREWER tactical bomber with the FENCER gives Frontal Aviation the ability to strike targets throughout most of NATO Europe from home bases in the USSR. The addition of this aircraft along with the latest ground attack variants of FLOGGER and FITTER greatly increases the tonnage which can be delivered over a far greater range.

To complement the growing inventory of modern aircraft, the Soviets are developing new types of armament which should greatly increase the effectiveness of sorties against hardened ground targets.

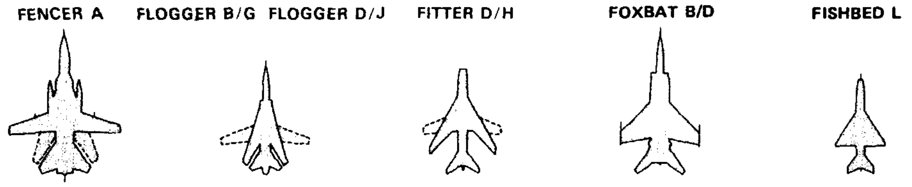
HELICOPTERS

The majority of the Soviet helicopter forces are assigned to Frontal Aviation units to be employed near the forward edge of a battle area.

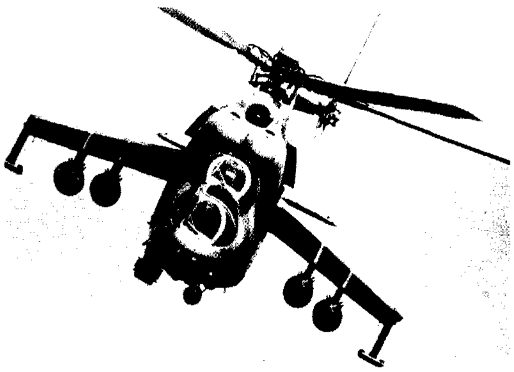
During the 1950s and early 1960s, Soviet helicopter design and production was limited to medium and heavy lift aircraft intended for use as transports only. During the late 1960s and early 1970s, the Soviets began to experiment with the use of the helicopter in the assault and attack roles. The Soviets installed 128x57 mm rockets on the Mi-8/HIP C to be employed as an assault helicopter. Later, the Mi-8/HIP E was identified. It remains the world's most heavily armed helicopter. The HIP E helicopter has 192x57-mm rockets, four AT-2/SWATTER Antitank Guided Missiles (ATGM), and a 12.7-mm nose gun. The Mi-8/HIP F is an export version of the HIP E with the major change that six AT-3/SAGGER ATGMs replace the four SWATTERs.

While the Mi-8/HIP was undergoing modification to improve its assault capabilities, the

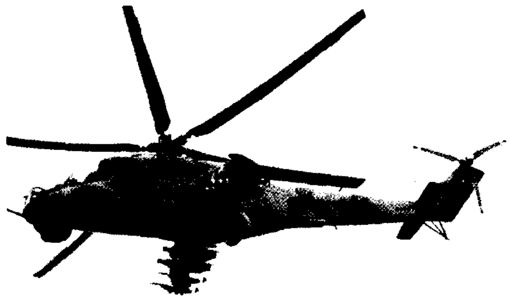
Frontal Aviation Ground Attack Aircraft



	Su-24 FENCER A	MiG-23 FLOGGER B/G	MiG-27 FLOGGER D/J	Su-17 FITTER D/H	MiG-25 FOXBAT B/D	MiG-21 FISHBED L
SPEED (KTS)	540	1,350	540	540	1,625	1,205
RADIUS (KM)	1,800	1,300	1,200	700	900	900
ARMAMENT	2,500 KG Bombs	6 AAMs	3,000 KG Bombs	3,000 KG Bombs	—	4 AAMs
WINGSPAN (M)	10.2 (swept)	8.1 (swept)	8.1 (swept)	9.9 (swept)	13.4	7.2



Mi-24/HIND E with Tube-Launched Anti-Tank Guided Missiles



Mi-24/HIND D with Turreted Gatling Gun

Soviets were developing the Mi-24/HIND, an attack helicopter and the first Soviet helicopter to be produced that has an integral weapon system and retractable landing gear. The HIND A is armed with 128x57-mm rockets, four AT-2/SWATTER ATGMs, and a 12.7-mm machine gun in the nose. The helicopter also has a small cargo bay that is used to transport up to eight troops. The Mi-24/HIND D is a streamlined variant of HIND A with the pilot seated above and behind the co-pilot gunner. The 12.7 mm nose gun has been replaced with a turreted Gatling-type gun, but other armament remains unchanged from the HIND A. The latest version of the HIND E is similar to the HIND D except that it has the tube-launched AT-6/SPIRAL.

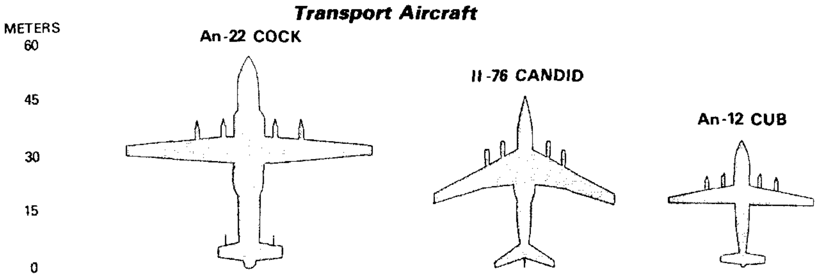
TRANSPORT AVIATION

Soviet Military Transport Aviation (VTA) is charged with the primary responsibility for providing airlift services for the Soviet Airborne Troops and air assault brigades.

VTA also operates an air logistics system to supply other deployed Soviet and allied armed forces and to support other Soviet political and economic interests.

Over 600 medium and long-range cargo transports are currently assigned to VTA airlift units. Il-76/CANDID long-range jet transports, which are replacing CUBs, now number over

Transport Aircraft



	An-22 COCK	Il-76 CANDID	An-12 CUB
MAX PAYLOAD (MT)	80	40	20
TROOP/PARATROOP CAPACITY	175/175	140/140	90/60
RANGE (MAX PAYLOAD) (KM)	4,200	5,300	1,400

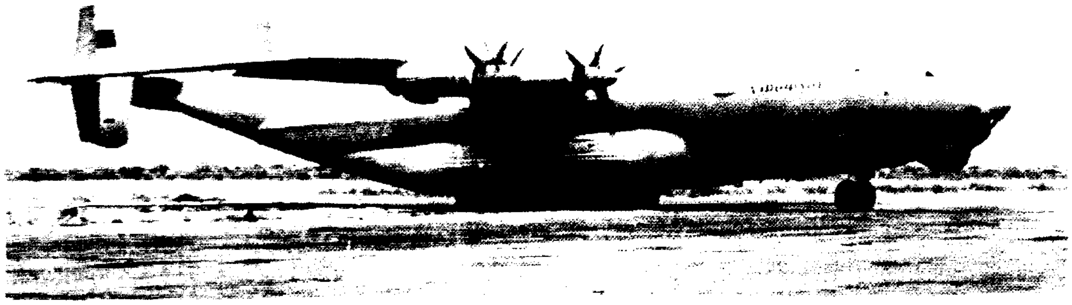
Il-76/CANDID Long Range Jet Transport

130. Over 50 An-22/COCK long-range turboprop transports are in the VTA inventory. The COCK and CANDID units are based in the western USSR, as are most of the remaining CUB units, although some VTA CUB units are stationed along the southern and far eastern periphery of the Soviet Union. This concentration in the western USSR places the main VTA assets near the airborne divisions they would support, as well as positioning the force opposite NATO. Nevertheless, VTA is capable of quickly concentrating its aircraft to support an operation anywhere along the Soviet periphery, as demonstrated in the December 1979 Soviet invasion of Afghanistan.

The CUB continues to be the mainstay of VTA. It is a four-engine turboprop which can carry up to 90-to-100 troops or cargo up to a maximum payload of 20 metric tons. It first entered VTA in the late 1950s.

In the mid-1970s, CANDID transports were introduced to meet VTA's increasing worldwide airlift requirements. The CANDID is comparable to the U.S. C-141, and can airlift up to 140 troops or 40 metric tons of cargo. Its main asset, however, is its greatly improved radius/range over that of the CUB it is replacing. A CANDID can thus theoretically lift twice the payload weight to five times the radius/range of the CUB.

During times of military emergency, VTA



An-22/COCK Long Range Turboprop Transport

can call upon the considerable reserve offered by Soviet civil aviation, Aeroflot. The civil fleet is equipped with about 200 CUBs and CANDIDs, about 1,100 medium- and long-range passenger transports and several thousand short-range transports and helicopters.

ELECTRONIC WARFARE

The Soviets continue to improve their capability to conduct Electronic Warfare (EW) and Signals Intelligence (SIGINT). Technical advancements in both Electronic Counter Measures (ECM) and Electronic Warfare Support Measures are noted in all Soviet forces. The air forces have numerous aircraft devoted to EW as escort and standoff jammer platforms. Additionally, since 1979, there has been increased emphasis on Soviet offensive, penetrating air forces equipped with ECM and accompanied by dedicated EW aircraft. The USSR has made a major investment in Electronic Counter Countermeasures (ECCM), as well as lethal and nonlethal countermeasures. Ground forces continue to introduce new jammers, as well as a new series of improved SIGINT vehicles. Strategic fixed jammers are located throughout the Soviet Union.

The Soviets have developed their EW capabilities into an integrated system called Radioelectronic Combat, combining all forms of intelligence, direction finding, intensive jamming, deception and suppressive fires from ground, air and seabased platforms to attack enemy organization and systems through their electronic means of control. Its purpose is to limit, delay or nullify the enemy's use of his command and control systems while protecting Soviet systems by ECCM. An estimated goal of the system is to destroy or disrupt a significant proportion of the enemy's command, control and weapon system communications, either by jamming or by destructive fire.

The Soviet ECCM objective is the satisfactory operation of USSR electronic equipment in the face of enemy disruption. Thus, physical protection of the equipment is included as well as other practices beyond the scope of western ECCM. Modern ECCM features have been designed into the newer air defense equipment. The greatest emphasis, however, has been on individual and organizational techniques that can be applied in the field.

To cite one example, the Soviets use antiradar camouflage to conceal military equipment against detection by ground, airborne and shipborne radars. Depending on the radar visibility of the objects to be camouflaged, antiradar camouflaging is achieved by the creation of false targets or by blending into the terrain background those objects that might serve for orientation. Equipment may be concealed behind local features or by making use of the camouflaging properties of the ground relief.

In addition to natural cover, timber, brush wood, metallic nets and angle reflectors are used by Soviet forces for radar camouflage. Mockups of military equipment can also be used as antiradar reflectors.

CHEMICAL WARFARE

The armed forces of the Soviet Union in particular and the Warsaw Pact forces in general are better equipped, structured and trained than any other military force in the world to conduct offensive and defensive chemical warfare operations. Their capabilities are steadily improving.

The Soviets have deployed a variety of modern agents and multiple delivery systems, and have the tactical doctrine for large-scale employment of chemical weapons. A significant portion of all Soviet delivery systems—including missile and rocket systems, aerial bombs and artillery—are chemical-weapon capable. Warsaw Pact forces are well-trained, organized and equipped for offensive CW operations.

In Soviet military doctrine, toxic chemicals are associated primarily with theater warfare. The basic principle is to achieve surprise by using massive quantities of chemical agents against unprotected troops or against equipment or on terrain to deny its use.

A large chemical warfare organization is *organic to the Soviet service structure.* Throughout the Warsaw Pact each combat unit down to regimental level has a sizable contingent for chemical defense. Chemical specialists are also assigned at the company level. All Warsaw Pact combat and combat support forces are well equipped and realistically trained to insure their survivability and to increase their operational effectiveness in toxic environments.

SPECIAL PURPOSE FORCES AND UNCONVENTIONAL WARFARE

In the context of Special Purpose Forces, Soviet unconventional warfare is defined as a variety of military and paramilitary operations including partisan warfare, subversion, and sabotage, conducted during periods of peace and war, and including other operations of a covert or clandestine nature.

The Soviets have used unconventional forces and methods in the past:

- Bolsheviks employed partisan guerrilla units against the Czarists and other opponents during the Russian Civil War of 1917 to 1920.
- Soviet partisan forces were extensively used against the Germans during World War II.
- Special purpose troops were used to crush resistance to Soviet domination over Eastern Europe.
- Soviet special purpose forces were used in the Soviet invasion of Czechoslovakia in 1968 to arrest Czech leadership and secure key objectives in Prague.
- Soviet special purpose forces played an important role in the invasion of Afghanistan and the elimination of President Amin.

Soviet unconventional warfare activities are managed at the highest level of government authority. The Committee for State Security (KGB) and the Main Intelligence Directorate (GRU) of the General Staff can be assumed to plan and execute Soviet unconventional warfare operations. These activities are protected by stringent security measures.

The Soviet leadership has a variety of elite forces for conducting unconventional warfare missions: special units of the KGB, GRU, Airborne and Ground and Naval Forces. The KGB special purpose units have a sabotage mission, and are thought to be targeted primarily against the civilian sector. Their tasks would be to create general panic among the civilian population, to disrupt civil government and public utilities, and to damage or destroy key production facilities.

The regular Soviet Armed Forces maintain elite airborne units, special sabotage/reconnaissance units and special long-range reconnaissance units for missions. The most powerful and numerous are the airborne troops under the direct control of the General Staff in Moscow. Some of these airborne units are designated as "special purpose" troops and are intended to operate in small groups against key political, military, command and control, transportation and industrial targets in the enemy rear area.

Soviet unconventional warfare units receive very intensive training. Small groups of men are trained as teams. Each team has an officer in charge who speaks the language of the target country fluently; a senior sergeant serves as second in command. Other members of the group are trained as radio operators, weapons and demolition experts. In addition to the normal military training, the following special skills are emphasized:

- tactics of infiltrating and exfiltrating the target area
- night operational linkups
- sabotage methods using explosives, incendiaries, acids and abrasives
- parachute training
- clandestine communications
- hand to hand combat and silent killing techniques
- language/customs of target country
- survival behind enemy lines
- identifying and locating targets.

To make training as realistic as possible, the Soviet training centers are equipped with realistic models of key targets such as enemy facilities and weapon systems.

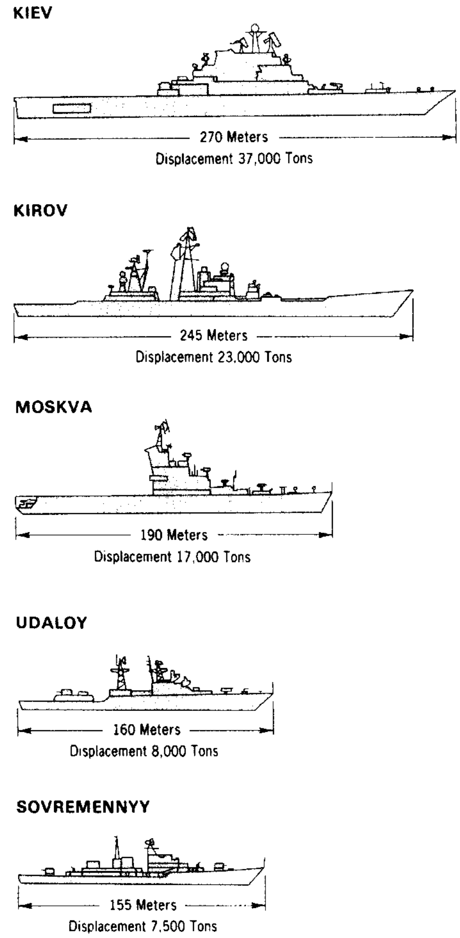
Soviet writings point out the effectiveness of UW units and record the accomplishments in World War II:

"During the war the partisans killed, wounded or took prisoner hundreds of thousands of German troops, collaborators and officials of the occupation administration. They derailed more than 18,000 trains, and destroyed or damaged thousands of locomotives and tens of thousands of railway cars and cisterns. The partisan war affected the morale of the German Army, keeping the German troops in a constant state of fear."

Use of unconventional warfare is a basic element of Soviet doctrine, and Soviet capabilities in this respect constitute a formidable threat.

THE SOVIET NAVY

Major Surface Ships



Over the last two decades the Soviet Navy has been transformed from a basically coastal defense force into an ocean-going force designed to extend the military capability of the USSR well out to sea and to perform the functions of tactical, theater and strategic naval power in waters distant from the Soviet Union. The Soviets have a larger array of general purpose submarines, surface warships and combat naval aircraft than any other nation. The submarines, about 70 of which carry antiship cruise missiles, constitute the most serious threat to US and Allied naval forces and the worldwide sea lines of communication upon which we and our Allies depend. In the mid-1960s the Soviets had 260 major surface warships and amphibious ships. Today they have 362.

In the European theater, Soviet naval forces would have a variety of key missions. These would include securing vital areas of the sea and strategic passages such as the waters north of the Greenland/Iceland/United Kingdom Gap, the Gap itself, the Baltic Sea, the Gulf of Finland, the passages on either side of Denmark, the Bosporus and Dardenelles and the Mediterranean Sea. Additionally, the Soviet Navy would seek to interdict the sea lanes to Europe, and would mount operations on the high seas against NATO carrier task forces, other surface warships and submarines.

The largest Soviet surface warship is the KIEV-Class aircraft carrier. At present, two KIEVs are deployed and two more are under construction. The KIEVs are armed with anti-ship cruise missiles, antisubmarine and over-

Soviet Navy Order of Battle

Submarines—Nuclear Powered

*SSBN	Ballistic Missile Submarines (YANKEE, DELTA classes)	62
SSBN	Ballistic Missile Submarines (HOTEL class)	7
*SSGN	Cruise Missile Submarines	50
*SSN	Torpedo-Attack Submarines	60

Submarines—Diesel-electric Powered

SSB	Ballistic Missile Submarines	18
SSG	Cruise Missile Submarines	20
*SS	Torpedo-Attack Submarines	160

Aircraft Carriers and Aviation Cruisers

CVHG	VSTOL Carriers (KIEV class)	2
CHG	Aviation Cruisers (MOSKVA class)	2

Cruisers

*CGN	Guided Missile Cruiser (Nuclear) (KIROV class)	1
*CG	Guided Missile Cruisers (SAM/SSM)	26
CL	Light Cruisers (SVERDLOV class)	9

Destroyers

*DDG	Guided Missile Destroyers (SAM/SSM)	38
DD	Destroyers	30

Frigates (Escorts)

*FFG	Guided Missile Frigates (KRIVAK class)	28
*FF/FFL	Frigates/small frigates	140

Small Combatants

*Missile Craft	145
*Patrol/ASW/Torpedo Craft	395
*Minesweepers	395

Amphibious Ships

*LPD	Amphibious Assault Transport Dock (IVAN ROGOV class)	1
LST	Amphibious Vehicle Landing Ships (ALLIGATOR, ROPUCHA classes)	25
LSM	Medium Landing Ships (POLNOCNY/MP-4 classes)	60

Auxiliary Ships

*Mobile Logistics Ships	150
*Other Auxiliaries	605

* Indicates additional units under construction in these categories.

the-horizon target acquisition helicopters, anti-aircraft missiles, anti-submarine rockets and missiles, believed to be nuclear-capable, and the FORGER vertical- and short-takeoff and landing (VSTOL) jet aircraft.

The principal surface warships which the Soviets are building today have greater range, firepower and electronics capabilities than in the past. The modern ships of the Soviet Navy are among the fastest and most heavily armed in the world.

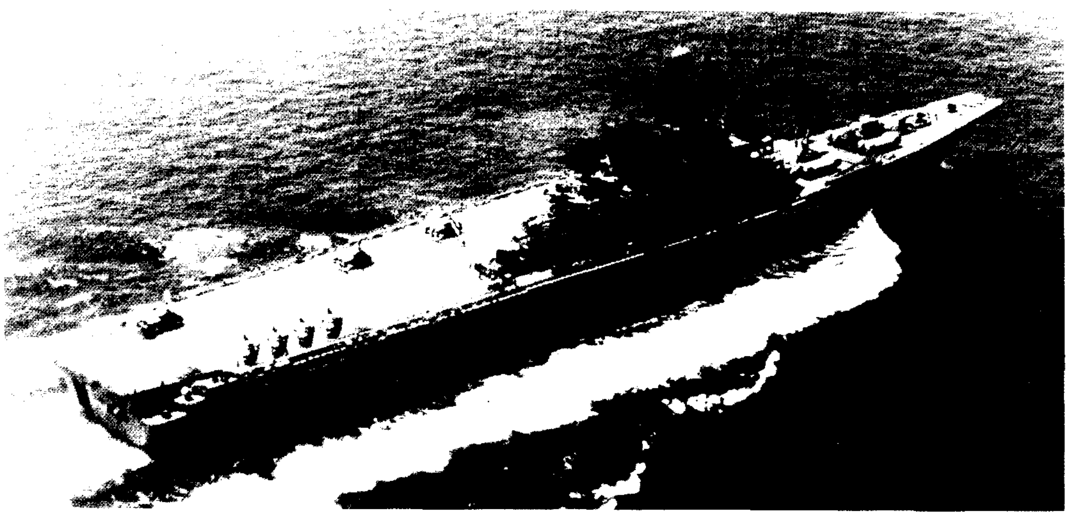
Present surface warship building programs include about 12 hulls under construction in four new classes of large warships, including a 23,000-ton nuclear-powered cruiser as well as the continued construction of KIEV-Class carriers and destroyer and frigate classes. The Soviet Navy has led the world in the use of cruise missiles in naval warfare. Since the installation of the SS-N-1 cruise missile on the KILDIN and KRUPNYY classes of destroyers in the late 1950s, the Soviets have extensively developed and deployed this type of weapon. Today the Soviet Navy has some 20 cruisers, carriers, and destroyers, about 70 submarines and 300 land-based aircraft armed with anti-ship cruise missiles.

AIRCRAFT CARRIERS

The widely publicized KIEV-Class aircraft carriers are the largest warships ever completed by the Soviet Union.

With the commissioning of KIEV in 1976, the Soviets, for the first time, have seabased, fixed-wing aircraft in operation. The second KIEV-Class ship, MINSK, is now in the Pacific Ocean Fleet, a third carrier is fitting out, and a fourth is under construction. A logical advance on the KIEV design could be a nuclear-powered carrier of about 60,000 tons with catapults and an air wing of some 60 aircraft. Such a ship could join the fleet late in this decade.

The KIEVs have an unusual design. They have a full load displacement of about 37,000 tons, are 270 meters long, have an angled flight deck some 185 meters long and an island super-

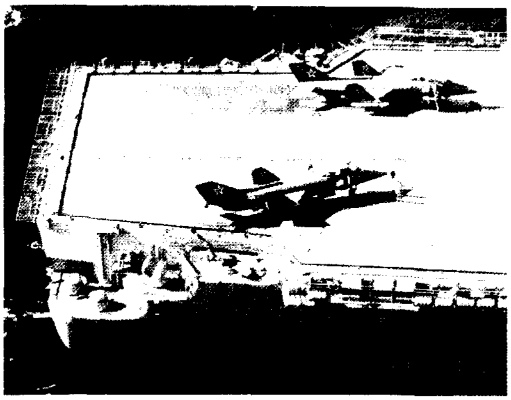


KIEV, Lead Ship of the KIEV-Class Guided Missile VSTOL Aircraft Carriers

In this view from astern, the nuclear-powered guided missile cruiser KIROV reveals a superstructure massed with radars and electronic sensors, a stern door for ASW sonar, helicopter deck bordered by Gatling guns and 100mm dual purpose gun mounts.

structure to starboard in the tradition of Western carriers. However, the forward part of these ships is similar to Soviet missile cruisers, with antiship, antisubmarine and antiaircraft missile launchers. They also have a profusion of more traditional weapons, electronic warfare systems, and a number of advanced communications devices.

The lack of aircraft arresting wires and catapults on the fight deck limits the ships to helicopters and VSTOL aircraft. A mix of about 20 Ka-25/HORMONE helicopters and 15 Yak-36/FORGER VSTOL aircraft is a nominal air group, although this mix could be changed to meet varied mission requirements.



Yak-36/FORGERs on KIEV-Class Carrier

Although the primary mission of the KIEV Class is stated by the Soviets as antisubmarine warfare, the ships also have powerful antiship capability in their cruise missile battery. They have eight large launching tubes with reloads for SS-N-12 missiles, which are an improvement over the older SS-N-3 antiship missiles. The HORMONE B helicopter, capable of providing over-the-horizon targeting information for the SS-N-12/SANDBOX missiles which have a maximum range of some 550 kilometers, has been seen aboard the KIEV Class.

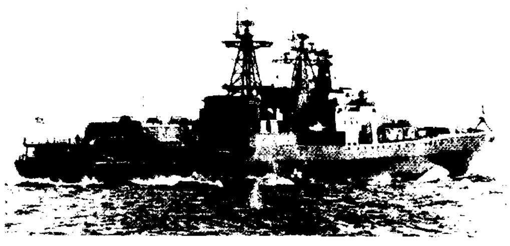
KIEV is a second generation class of Soviet "aviation ship," following the helicopter carrier missile cruisers MOSKVA and LENINGRAD, which were completed in 1967 and 1968, respectively. These earlier ships also were of innovative design, being essentially missile cruisers forward with a clear flight deck aft for the operation of up to 18 HORMONE antisubmarine helicopters. The latter ships are rated as "antisubmarine cruisers" by the Soviet Navy and have been used primarily in that role as well as serving as flagships.

SURFACE COMBATANTS

In May 1980 the Soviets began sea trials of their first nuclear-powered surface combatant, the guided missile cruiser KIROV. This is a ship of 23,000 tons, larger than any surface combatant other than an aircraft carrier built since World War II. Its primary armament is heavy, new generation, highly sophisticated surface-to-air and long-range antiship cruise missiles. The Soviets have also fitted her with ASW missiles, two 100-mm dual purpose guns, short-range surface-to-air missiles, Gatling guns for close-in defense, and Ka-25/HORMONE ASW helicopters.

KIROV is designed to provide improved fleet air defense against attack from Western aircraft carriers or from long-range cruise missiles. Conversely, the KIROV's new long-range, antiship cruise missiles will significantly enhance Soviet abilities to strike opposing surface action groups. KIROV marks an important developmental step in the technical evolution of Soviet sea power. A second unit is well along in construction.

In July 1980, the Soviets began sea trials of their second new class of major surface combatant in 1980, the 7,000-to-8,000-ton, steam-powered, guided missile destroyer (DDG) SOVREMENNYY. While KIROV is clearly a multipurpose ship, SOVREMENNYY appears

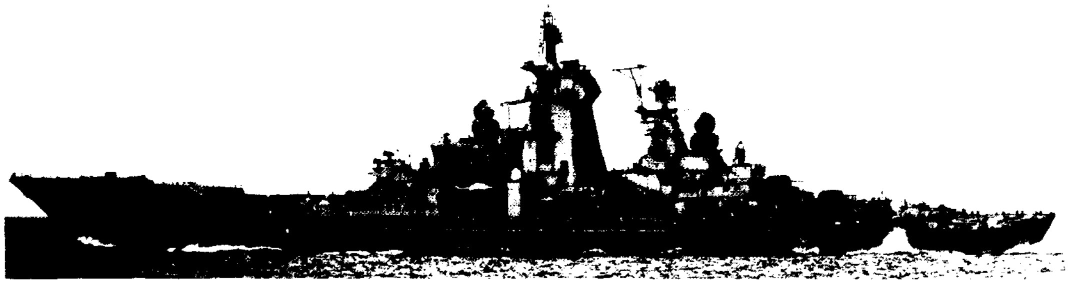


UDALOY, Guided Missile Destroyer

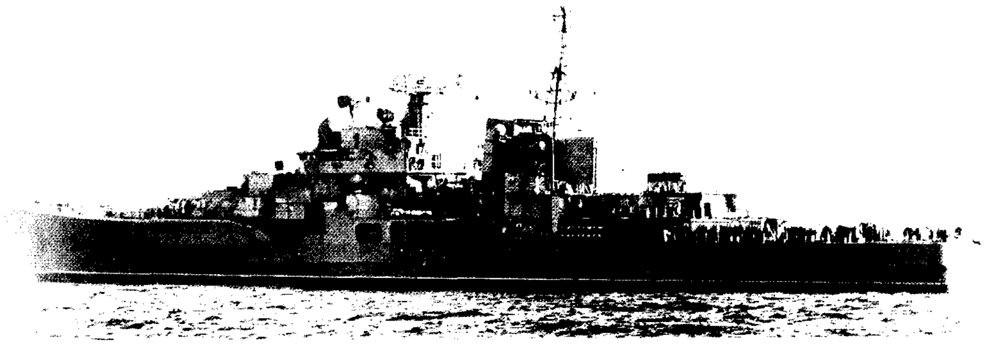
primarily designed for antisurface warfare with four 30-mm Gatling guns, surface-to-surface antiship cruise missiles, and new, medium range, surface-to-air missile systems. The SOVREMENNYY has a secondary ASW mission and can carry HORMONE variant helicopters in its telescoping hangar. This new DDG is the first gun ship constructed by the Soviets since the late 50s and is their first major combatant since 1970 to deploy without significant ASW capability. It is now in series production with additional units expected through the mid-1980s. Ships of the SOVREMENNYY Class can be expected to support amphibious assault forces, provide naval gunfire, and oppose Western air, surface and submarine forces in all ocean areas.

In November 1980, the Soviets began sea trials of still another new class of mission-specific guided missile destroyer, the UDALOY. This unit is designed primarily for antisubmarine warfare, displaces about 8,000-to-9,000 tons, is armed with eight ASW missiles, two 100-mm guns, four Gatling guns for close-in defense and two hangars for ASW helicopters. The UDALOY appears to be a follow-on class to previous Soviet large antisubmarine ship programs and probably will be employed as the main ASW platform within an integrated Soviet task force. All available evidence suggests that the UDALOY program will be a large-scale effort with a number of units to be deployed through the 1980s.

Finally in 1980, a fourth major surface combatant program was identified in the Soviet Union. This new class of large, conventionally powered, multipurpose guided missile cruiser is being constructed in the Black Sea and has been temporarily designated "BLACK-COM-1." This new cruiser has supplanted KARA-class cruiser construction and will probably carry long-range cruise missiles. The new ship displaces approximately 11,000-to-13,000 tons and is further evidence of the Soviet trend toward larger, more technically sophisticated combatants. Although BLACK-COM-1 is conventionally powered, it is expected to function like KIROV as a multipurpose command ship capable of providing a Soviet battle group with enhanced air defense and surface strike capabilities. Series production of this new class is already underway.



KIROV, Nuclear-Powered Guided Missile Cruiser



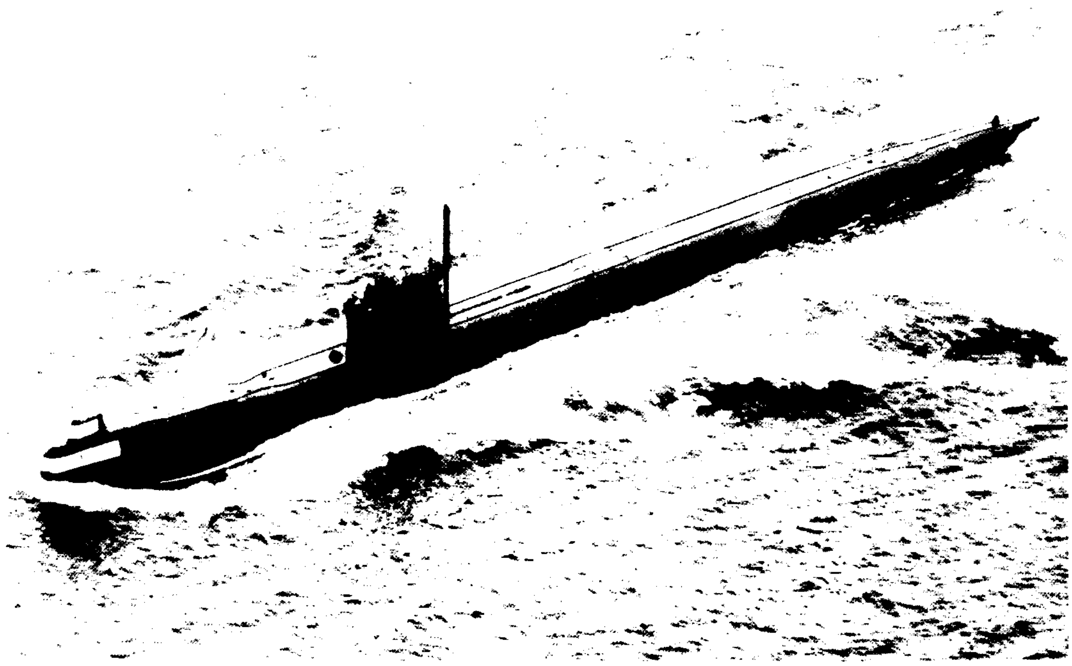
SOVREMENNYY, Guided Missile Destroyer

SUBMARINES

The Soviet Navy currently operates some 377 submarines, including 180 nuclear-powered submarines compared to some 115 in the U.S. Navy.

Attack Submarines: The Soviet Navy operates about 220 attack submarines. Most are diesel-electric powered and many are of recent construction. About 60 of the torpedo attack submarines are nuclear powered, being of the NOVEMBER, ECHO, VICTOR, and ALFA Classes. The last is believed to be the fastest submarine in service today in any Navy. An improved VICTOR Class is now in production and the small, ALFA Class, which combines deep-diving capabilities with its high speed, may well be in series production. The Soviet Navy continues to build diesel-powered submarines, the FOXTROT Class, for overseas sales, i.e., India, Libya and Cuba, and the new TANGO Class for use by the Soviet Navy. The prime weapons of these attack submarines are antisubmarine

VICTOR I-Class Nuclear-Powered Attack Submarine



ECHO-Class Nuclear-Powered Attack Submarine

and antiship torpedoes; however, mines also can be carried. The newer submarines have rocket-delivered ASW weapons as well.

Cruise Missile Submarines: Even while ambitious surface combatant construction programs were underway, the Soviets continued to turn out submarines at virtually the same pace they have maintained through the 1970s. One new class introduced in 1980, the OSCAR, is an extremely large SSGN capable of launching up to 24 long-range, antiship cruise missiles while remaining submerged. The missile fired by the OSCAR is probably a submarine variant of the same new antiship cruise missile first deployed aboard KIROV. This missile has an estimated range of over 450 kilometers. The Soviets began their submarine cruise missile programs in the 1950s converting existing submarines to fire the long-range SS-N-3 missile. Then, newer submarines designed to carry the SS-N-3 joined the Soviet fleet, the diesel-powered JULIETT Class and the nuclear-powered ECHO I and II Classes.

After producing about 50 submarines of the JULIETT and ECHO Classes, the Soviets completed the first CHARLIE I Class SSGN in 1968 with the improved CHARLIE II following several years later. These nuclear-powered submarines can fire eight antiship cruise missiles while remaining submerged at a range of up to 100 kilometers from the intended target. Soviet cruise missile submarines also carry ASW and antiship torpedoes.

The Soviet Navy's cruise missile submarines and their missile-armed bombers form the greatest threat to Allied naval surface forces operating on the high seas. This is especially so when within range of Soviet air bases where the Soviets can launch coordinated attacks using not only reconnaissance aircraft to provide target data for submarine-launched missiles, but also their extensive force of naval and air force missile-equipped bombers.

NAVAL AVIATION

Soviet Naval Aviation is subordinate to the Soviet Navy, with regiments being assigned to each of the four fleets under an aviation officer reporting directly to the fleet commander. Soviet Naval Aviation consists of some 1,440 aircraft, most of which are based ashore except for helicopters assigned to various cruisers and the helicopters and VSTOL aircraft that fly from the KIEV-Class aircraft carriers.

Soviet Naval Aviation has four basic missions: reconnaissance and surveillance, antiship strike, antisubmarine and aviation support.

Naval aircraft are employed in long-range reconnaissance and ocean surveillance, with some aircraft equipped to provide midcourse target data for antiship missiles launched "over the horizon" from surface ships, submarines, and other aircraft. Reconnaissance aircraft now in use include about 50 of the larger Tu-95/BEAR D turbo-prop planes; about 100 twin-jet Tu-16/BADGER aircraft, and Tu-22/BLINDER jet aircraft that have a supersonic dash speed. Additionally, the Il-38/MAY maritime patrol aircraft are used for surveillance and reconnaissance missions.

The prime strike force of Soviet Naval Aviation consists of over 300 twin-jet BADGER and BLINDER aircraft which are fitted to carry one or two of several types of antiship cruise missiles with "standoff" ranges varying from 90 to over 300 kilometers. Some missiles have variable flight paths and various homing techniques to help penetrate ship defenses. All these missiles are assessed to carry either a nuclear or a high explosive warhead of about 1,000 to 2,000 pounds (450 to 900 kilograms).

Soviet Naval Aviation also flies the twin-jet BACKFIRE, a supersonic aircraft with variable-sweep wings. This plane carries stand-off missiles and is slowly replacing the BADGER in strike squadrons. The Navy is receiving this aircraft at about the same rate as the Soviet Long Range Aviation strategic bombing force and

Soviet Navy Aircraft

Strike/Bombers		390
BACKFIRE		
BADGER		
BLINDER		
Fighter/Fighter Bombers		70
FITTER		
FORGER		
Reconnaissance/Electronic Warfare Aircraft		180
BADGER		
BEAR D		
BLINDER		
Antisubmarine Aircraft		400
BEAR F	*HOUND*	
HAZE A	*MAIL*	
HORMONE A	*MAY*	
Tanker		70
BADGER		
Transport/Training Aircraft		330

Su-17/FITTER Fighter-Bomber

the inventory has climbed to more than 70 aircraft. The BACKFIRE greatly increases the capability and extends the range at which strike aircraft can attack Western surface forces such as aircraft carrier or amphibious battle groups.

The introduction of aircraft carriers and FORGER aircraft gives Soviet Naval Aviation another dimension of antiship strike. The FORGER can be fitted with short-range air-to-surface missiles, rockets, or bombs for use against ship or shore targets.

The FITTER fighter-bomber has been introduced into Soviet Naval Aviation over the last several years. These aircraft are assigned to the Baltic Fleet primarily to provide antiship strike and support to amphibious operations in the Baltic.

In addition to naval aircraft armed with antiship missiles, certain BEAR and BADGER bombers of Soviet Long Range Aviation can be used for attacks against ships, and these aircraft regularly participate in naval exercises. Most of these strike aircraft can be refueled in-flight by naval BADGERs fitted as tankers as well as by Long Range Aviation tankers.

For antisubmarine warfare the Soviet Navy has a force of about 400 fixed-wing aircraft and helicopters configured for submarine detection and attack. This force currently includes BEAR F aircraft, MAY turbo-prop aircraft and MAIL twin-engine flying boat aircraft. Only the BEAR F appears to be still in production. These aircraft operate from Soviet land bases to search out seaward areas for foreign submarines.

An increasing number of antisubmarine helicopters are being flown by the Soviet Navy. The HORMONE A, a twin turboshaft helicopter, is flown from the newer Soviet cruisers, as well as from the helicopter carriers MOSKVA and LENINGRAD and the KIEV-Class aircraft carriers. Additionally, an ASW version of the Mi-14/HAZE helicopter flies from land bases.

Soviet Naval Aviation also operates some 125 transport and utility aircraft of various types. Although basic and advanced training are provided by the Soviet Air Forces, maritime operational training is accomplished within the Navy. Soviet Naval Aviation retains a number of transports to provide a logistics capability better to meet the Navy's priority needs.

AMPHIBIOUS FORCES

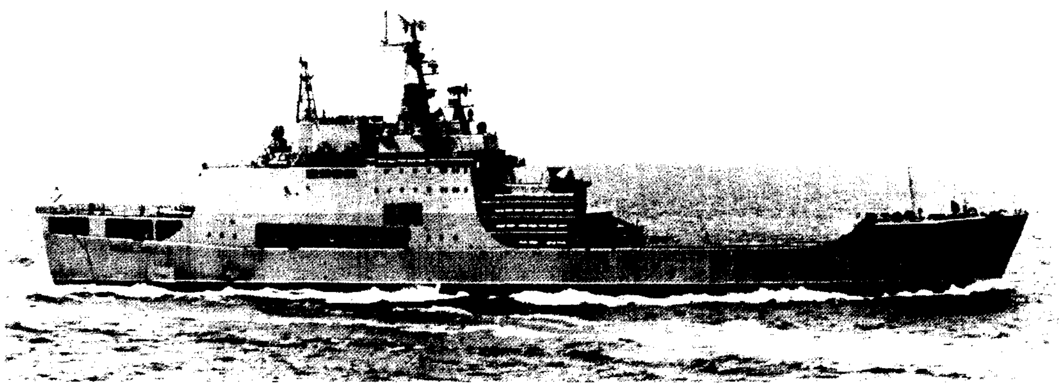
Another area of continuing development in the Soviet Navy has been the amphibious assault forces. In April 1980, the recently constructed IVAN ROGOV, the Soviets' newest amphibious warfare ship, deployed to the Indian Ocean. At about 13,000 tons, the IVAN ROGOV is nearly three times the size of previous Soviet amphibious ships and is designed to operate both helicopters and high-speed air-cushioned landing craft. The ROGOV can embark about 550 naval infantry troops and significantly enhances Soviet amphibious warfare projection to distant areas, especially the Third World.

Amphibious lift for the naval infantry is provided primarily by IVAN ROGOV-Class LPDs, ALLIGATOR-Class and ROPUCHA-Class LSTs, and POLNOCNY-Class LSMs. The Soviet amphibious forces exercise regularly in their respective fleet areas and regularly deploy to the Mediterranean, off West Africa and the Indian Ocean. The Soviet Navy has about 25 LSTs and some 60 LSMs, plus numerous lesser landing craft and air-cushion vehicles for amphibious operations.

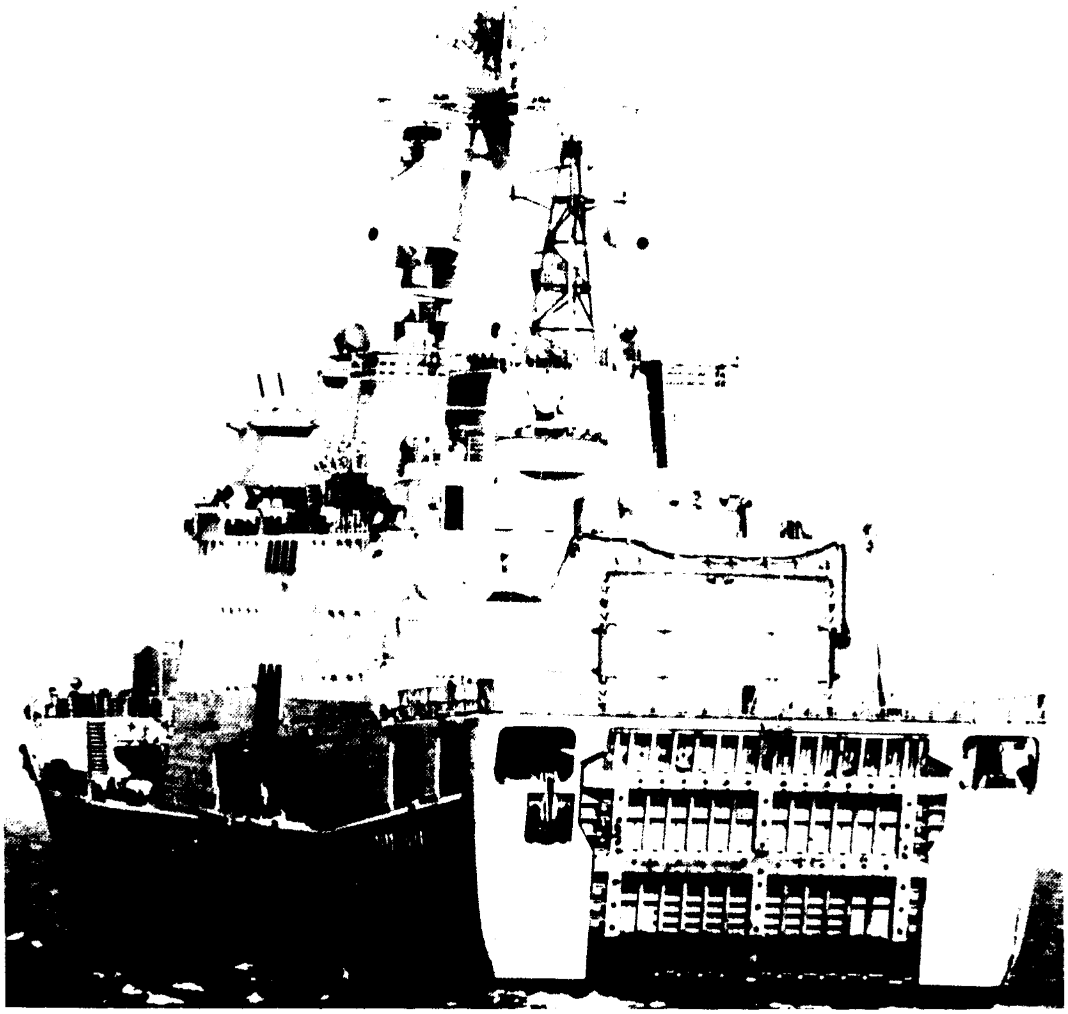
The Soviet Navy is now the world's largest operator of military air-cushion vehicles for which development continues. There are three classes currently in use: the GUS, LEBED and large AIST Class.

Although small by comparison to the U.S. Marine Corps, the Soviet Naval Infantry is the second largest marine force in the world. The potential power of even a few hundred Soviet marines afloat during a crisis provides the Soviet Union with a valuable political-military instrument.

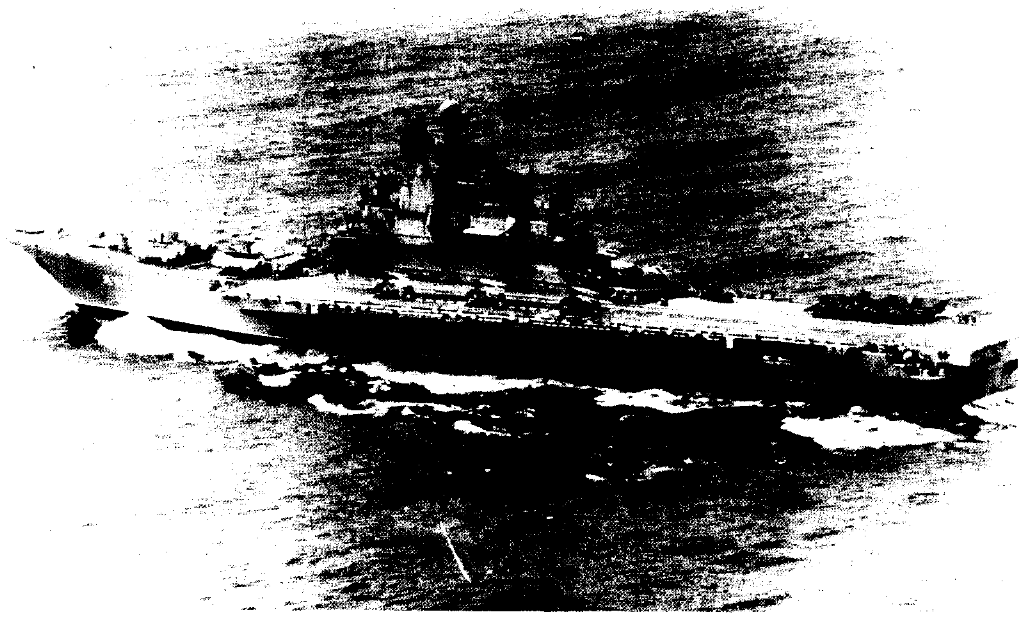
The Soviets have in hand, or are developing, the elements necessary to provide a formidable



IVAN ROGOV, Lead Ship of a New Amphibious Assault Class



The 13,000-ton amphibious assault transport dock IVAN ROGOV entered service in 1978, the largest amphibious ship in the Soviet Navy. IVAN ROGOV has two helicopter decks and helicopter hangers, and a floodable welldeck, behind the large stern gate, which can carry three air-cushion landing craft. Judging by IVAN ROGOV's characteristics, the amphibious ship can carry a Soviet Naval Infantry Battalion—550 men—30 armored personnel carriers and ten tanks, enhancing the USSR's capability to project naval and military power at great distances from the Soviet homeland.

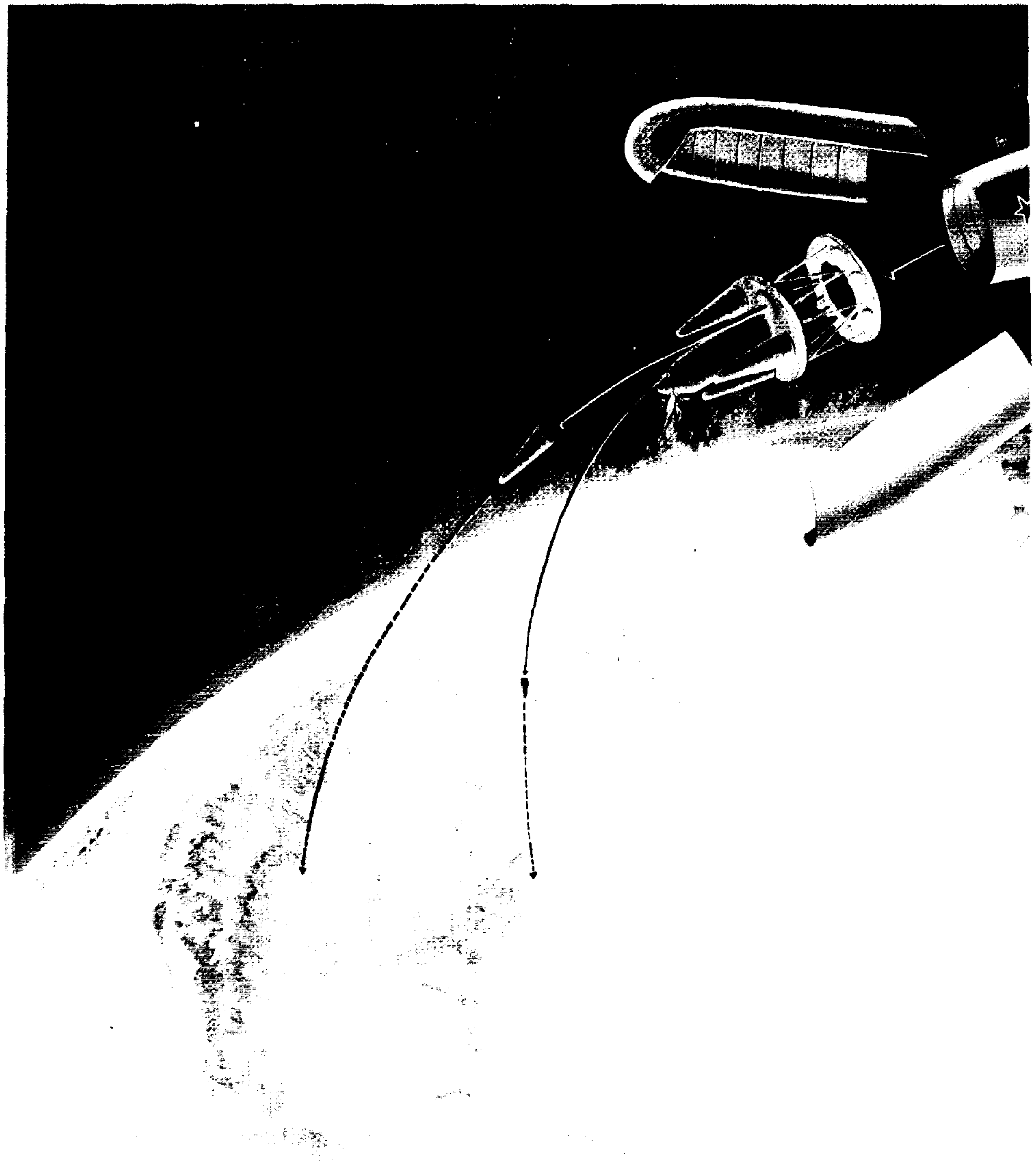


MINSK, Second of the KIEV-Class VSTOL Aircraft Carriers

projection into distant waters. These include the improvement in assault lift capability, the expansion of a large administrative lift ability designed into certain ships of the Merchant Marine, the retention of a substantial gunfire support strength in cruisers and destroyers, development of sea-based tactical air power, and an improving underway replenishment capability. The Soviet Navy's ability to project tactical power ashore at some distance from the Soviet littoral may be part of Admiral Gorshkov's grand plan of achieving a "balanced fleet."

Soviet naval policy and programs for the 1980s can be expected to be directed toward broadening the range of military and political options available to the leadership across the entire spectrum of conflict—from competition in peacetime to hostilities in the event of a nuclear war. Having achieved rough parity in general war capabilities, the Soviets can be expected to increase their emphasis on making general purpose naval forces more capable in distant waters, of performing a variety of missions and of challenging the West's traditional dominance of the open oceans. We believe that Soviet naval policies also intend gradually to achieve greatly improved capabilities for sustained, long-range naval operations, even against substantial opposition.

V SOVIET STRATEGIC



'ORCES

Over the past 20 years, the Soviet Union has devoted substantial resources to the development and deployment of intercontinental ballistic missile (ICBM) and submarine launched ballistic missile (SLBM) forces. Fewer resources have been allocated to bomber forces, although new weapons systems—primarily the BACKFIRE bomber—have been deployed.

Under Brezhnev, the Soviet missile forces have moved from a position of clear inferiority in the early-to-middle 1960s to one in which they are generally recognized as equal or superior in certain measures to those of the West. In 1964, the Soviets had only a few operational SLBMs, many of which had to be launched from surfaced submarines. While the USSR had more ICBMs than SLBMs, the number was significantly fewer than US ICBMs. Moreover, the majority of Soviet ICBMs were inaccurate systems housed in launchers that were clustered together and unhardened, making them vulnerable to attack. The USSR then embarked on high-priority development and deployment programs first focused on increasing single-silo ICBM deployment to a level greater than that of the United States. A similar buildup of SLBM launchers on modern, nuclear-powered ballistic missile submarines (SSBNs) was underway by the late 1960s. These massive 1960s ICBM and SLBM deployment programs, largely centered on the SS-9 and SS-11 ICBMs and the SS-N-6/YANKEE SLBM/SSBN weapons systems, provided the foundation from which subsequent strategic nuclear modernization programs were to grow.

Since the mid-1970s the Soviet Union has completely upgraded its strategic Intercontinental Ballistic Missile force with the introduction of the SS-17, SS-18 and SS-19, equipped with multiple, independently targetable reentry vehicles—missiles with improved reliability, range, payload accuracy and survivability.

The 1970s modernizations, which only now are reaching a conclusion, were largely technological in nature. More than half of the 1,398 Soviet ICBM launchers have been rebuilt to house the SS-17, SS-18 and SS-19 ICBMs in vastly more survivable, hardened silos. These ICBMs, all of which are MIRVed, are in the forefront of ICBM technology. Certain versions of the SS-18 and SS-19 are among the most accurate ICBMs operational anywhere. Together, these systems have the capability to destroy a large percentage of the more than 1,000 US ICBM launchers, using only part of their total numbers.

The Soviet SLBM/SSBN modernizations began in the early 1970s with the introduction of the long-range SS-N-8 SLBM deployed on DELTA-Class SSBNs. By the late 1970s, the Soviets were producing the MIRVed SS-N-18 and deploying it in a modified version of the DELTA-Class submarines. In 1979, a new SLBM, the MIRVed SS-NX-20, was first tested. This SLBM will probably reach operational status by the mid-1980s, deployed in the new TYPHOON-Class SSBN submarine.

These technological advances in ICBM and SLBM weapons systems have been accompanied by major improvements in communications systems and in the organization of the forces as well.

Soviet intercontinental bomber forces retain most of the BEAR and BISON bombers and refueling tankers which were initially produced in the 1950s and 1960s. Improvements to their avionics and weapons systems have been made, however. Since the early 1970s, the USSR has also deployed over 70 BACKFIRE bombers to operational LRA units and is producing about 30 more of these supersonic bombers each year. While BACKFIRE appears to have been given primarily theater and maritime missions, it has a strategic capability and cannot be ignored as a potential intercontinental bomber threat.

Current force levels of Soviet intercontinental strategic nuclear forces include 1,398 ICBM launchers, 950 SLBM launchers and 156 long-range bombers, excluding BACKFIRE. These delivery systems are loaded with some 7,000 nuclear warheads. Deployment programs now underway indicate that the number of warheads will increase over the next few years.

STRATEGIC ROCKET FORCE

The Strategic Rocket Force (SRF), the largest missile force in the world, controls all Soviet military units in the Soviet Union equipped with ICBMs, IRBMs and MRBMs. The mission of the SRF is to destroy an enemy's means of nuclear attack, military-industrial production facilities, civil and military command and control capabilities and logistics and transport facilities. The SRF's secondary mission is to support tactical joint forces and naval fleets.

Soviet strategic operational employment plans, based on Soviet writings, point to seizing the initiative through preemptive attack. Such an attack would effectively reduce the impact of a retaliatory strike, limiting damage to the USSR. While this is the preferred Soviet scenario, the Soviets also have the capability to launch on tactical warning if necessary. Regardless of how a war started, the Soviets view the nuclear forces and command and control of an enemy as their first priority targeting objectives. This would include such targets as ICBM launch silos, launch control facilities, support and maintenance facilities, strategic bomber bases, submarine berths and loading facilities and nuclear storage and production facilities. Priority two targets would be those that would negate the ability to project military power abroad. Such targets would include depots, transportation centers, military stockpiles, conventional force bases and training centers. Other targets would be those that limit the capacity of the enemy to conduct a protracted war such as military industries, refineries and electrical power plants.

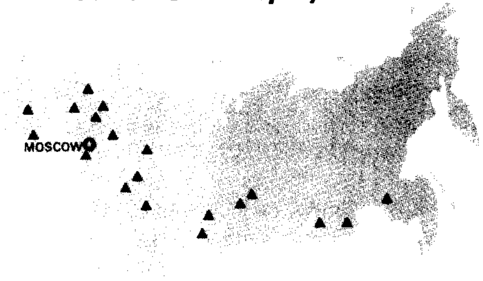
The SRF is under the command of General of the Army Tolubko. He is responsible for the administrative and technical control of the forces and equipment under his command. The General Staff of the Ministry of Defense has the responsibility for executing operational decisions of the Supreme High Command which affect the SRF. In addition, the General Staff can bypass the SRF headquarters and exercise direct operational control of the missile forces. Organization within the SRF is based on army, division, regiment, battalion, and battery. A battery consists of single ICBM, IRBM, and MRBM launchers.

The ICBM force of the SRF is deployed in missile complexes generally located along, and within access of, the Trans-Siberian Railway. A typical ICBM complex includes a main base support area, a facility for transferring missiles and equipment from rail to roads, and launch control centers, each with a group of launch silos it controls. Each complex is comprised of a number of launch groups. Each launch group is comprised of either six or ten launch silos.

ICBM DEPLOYMENT

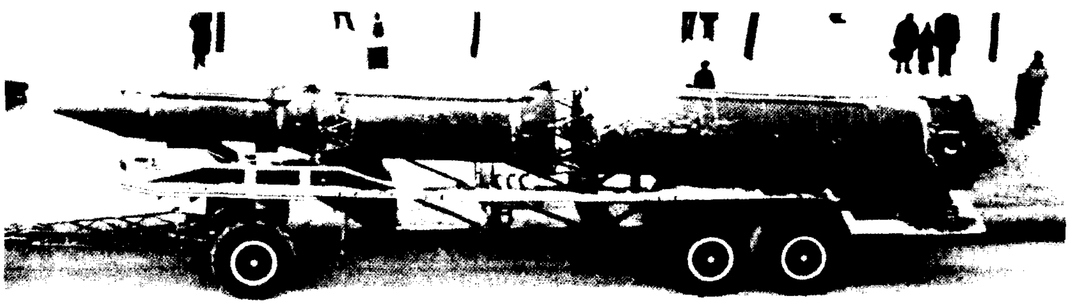
The Soviet ICBM force currently consists of 580 SS-11s, 60 SS-13s, 150 SS-17s, 308 SS-18s, and about 300 SS-19s. The great majority of the 17s, 18s and 19s are equipped with MIRVs. The Soviets are expected to complete their current ICBM modernization program (SS-17, SS-18 and SS-19) in the early 1980s.

Soviet ICBM Deployment



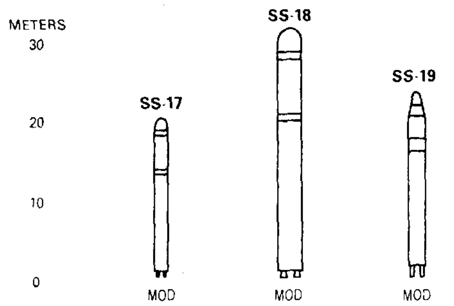
SOVIET MIRVed ICBMs

SS-17: Since it first became operational in 1975, the SS-17 has been deployed in 150 converted SS-11 silos. Both single and multiple reentry vehicle (RV) versions of the SS-17 have been developed, but few if any of the single RV versions are deployed. The maximum range of



At present, there are 1,398 Intercontinental Ballistic Missile launchers in the Strategic Rocket Force. An SS-13 ICBM is seen here during public display in Moscow.

MIRVed ICBMs



	SS-17 MOD 1	SS-17 MOD 2	SS-18 MOD 1	SS-18 MOD 2	SS-18 MOD 3	SS-19 MOD 1	SS-19 MOD 2
NUMBER DEPLOYED	150			308		300	
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

the SS-17 is believed to be about 10,000 kilometers. Although much more accurate than its predecessor, the SS-11, the SS-17 is not as accurate as the SS-18 and SS-19 ICBMs.

The SS-17 employs a cold-launch technique which delays main engine ignition until the missile has exited its hardened silo. This technique minimizes launch damage to the silo and is consistent with the notion of building in the capability to reload and refire missiles during a protracted nuclear conflict.

SS-18: The SS-18, the largest of the current Soviet ICBMs, is similar in dimensions to the SS-9, which it replaced, and is about twice the size of the proposed US MX missile. Like the SS-17, the SS-18 also uses a cold-launch technique. Both single and MIRVed versions of the SS-18 have been tested. The MIRVed versions carry eight or ten reentry vehicles. Each warhead of the ten RV variants has a better than 50 percent chance of destroying a MINUTEMAN silo. When used in pairs against a single target, the warheads are even more destructive. The single RV versions of the SS-18, with their large destructive power and accuracy, are capable of destroying any known fixed target with high probability.

SS-19: The SS-19 ICBM became operational in 1974. It uses a hot-launch technique with engine ignition occuring while the missile is in its silo. The SS-19 is estimated to have three-to-four times the payload carrying capacity of the SS-11, and the missile is much larger in volume, comparable in size to the proposed US MX. There are both single and multiple RV versions of the SS-19. The MIRVed version, which makes up most of the SS-19 force, is believed capable of delivering six RVs to a range of about 9,000 kilometers.

ICBM RELOAD CAPABILITY

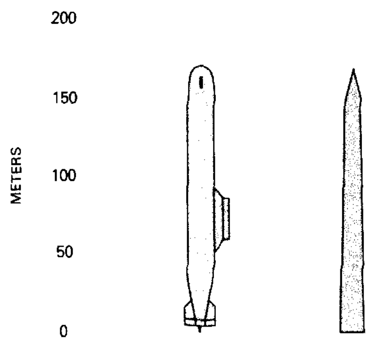
The Soviets could have contingency plans for reloading and refiring missiles from ICBM launchers which already have fired an initial round. The cold-launch technique employed by the SS-17 and SS-18 lends itself to such a capability in a protracted nuclear conflict. Additionally the Soviets may be able to reconstitute a portion of their hot-launched missile force—SS-11, SS-13 and SS-19—as well. The Soviets probably cannot refurbish and reload silo launchers in a period less than several days—thereby avoiding violation of the SALT II Agreement which precludes a rapid reload capability for ICBM launchers.

ICBM PRODUCTION

Four major Soviet design bureaus specialize in strategic missiles development. These bureaus are supported by activities at main assembly plants, at hundreds of component production plants, at test ranges, and at launch complexes. The Soviet missile development program shows no signs of slackening. We expect improvements leading to new missiles and to the modification of existing missile systems. These improvements are expected to continue the trend towards greater capabilities against such hardened military structures as ICBM silos. As the accuracy of future Soviet missiles increases, it will be feasible for the Soviets to reduce the size of individual RVs and thereby to increase the number of MIRVs carried on each missile, assuming no external constraint such as that imposed by arms limitations. It is anticipated that the Soviets will develop solid-propellant ICBMs to supplement or replace some of the current liquid propellant systems. The SS-16, a small ICBM about the same size as the MINUTEMAN, is a solid-propellant ICBM which was developed by the Soviets in the early 1970s for mobile deployment. The system was never deployed. Future solid-propellant ICBM development and deployment could give the Soviets additional flexibility in handling and in basing their missile forces. Future missiles are expected to include upgraded versions of the present systems as well as new missiles.

SLBM FORCE

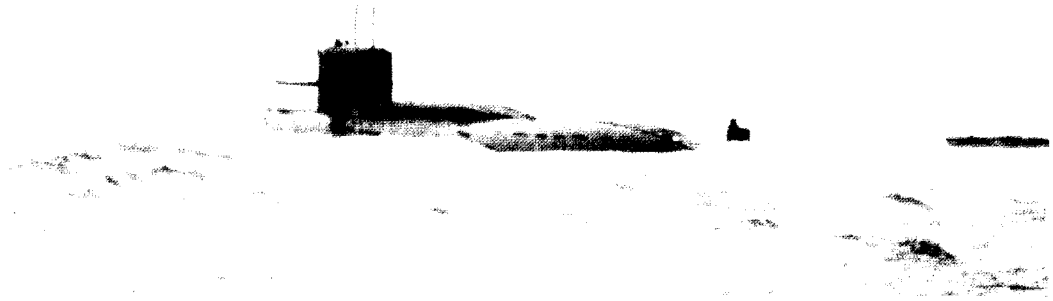
The Soviets continue to expand and modernize their SLBM force, now consisting of some 62 submarines carrying 950 modern SLBMs with a total of almost 2,000 nuclear warhead reentry vehicles. In the past seven years, the USSR has produced 30 SSBNs, and the new 20-tube, very



Length of TYPHOON Compared to Height of Washington Monument

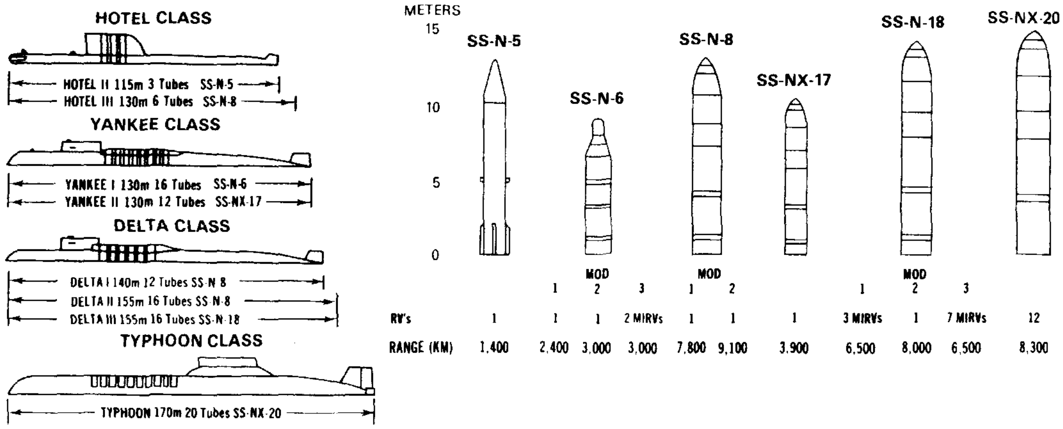
large TYPHOON SSBN was launched in 1980. This new SSBN/SLBM system will be operational in the mid 1980s and is expected to include the SS-NX-20 missile. The SS-N-8 and SS-N-18 on DELTA-Class SSBNs permit the Soviets to hit targets in the United States from their home ports, and it is possible that the Soviets will develop follow-on SLBMs for these as well as the SS-N-6 on the YANKEE SSBNs.

The Soviet effort leading to this current capability began with the conversion of existing diesel-powered submarines in the mid-1950s to fire



YANKEE-Class SSBN

Nuclear Ballistic Missile Submarines and Missiles



short-range ballistic missiles. In the early 1960s, the GOLF-Class diesel and HOTEL-Class nuclear-powered ballistic missile submarines were completed.

By the end of 1974, the Soviet Navy had 34 YANKEE-Class SSBNs in service, each carrying 16 nuclear-tipped missiles. During 1973, following the signing of SALT I, the first of the larger DELTA-Class submarines was completed. The early DELTAs displace some 11,000 tons submerged and have an overall length of about 140 meters. The modern deployed strategic Soviet SLBM/SSBN force includes the SS-N-18/DELTA III weapon system.

SS-N-6/YANKEE I: The SS-N-6/YANKEE I weapon system is composed of the liquid-propellant SS-N-6 missile and the 16-missile tube YANKEE I-Class SSBN submarine. The SS-N-6/YANKEE I weapon system became operational in 1968. There are different versions of the SS-N-6 SLBM. One version carries a single RV and has a maximum operational range

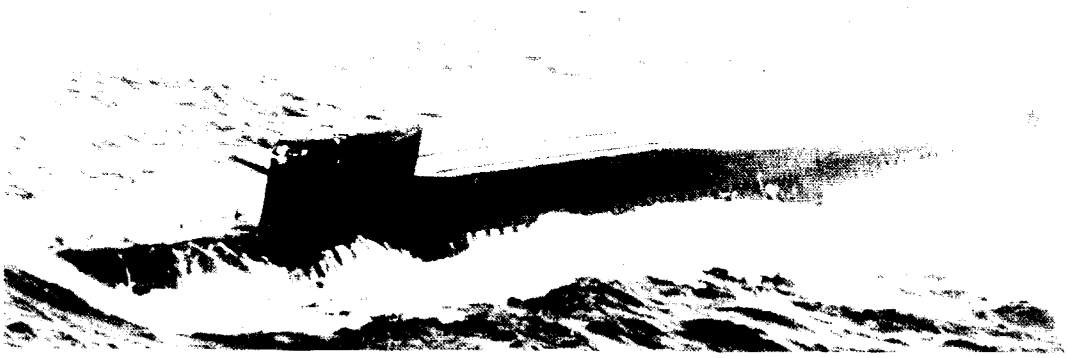
DELTA I-Class SSBN

of about 2,400 to 3,000 kilometers. Another version carries two RVs and was the first Soviet SLBM to carry multiple RVs. This SS-N-6 has a maximum operational range of about 3,000 kilometers.

*SS-N-8/*DELTA I and II: The SS-N-8/DELTA weapon system includes the long-range, two-stage, liquid-propellant SS-N-8 SLBM and the 12-missile tube DELTA I and 16-missile tube DELTA II-Class SSBN submarines. The SS-N-8 was a significant change from previous Soviet SLBMs, even though liquid-propulsion technology was employed, because this was the first two-stage SLBM. The SS-N-8 has a maximum operational range of about 9,000 kilometers and carries one RV.

*SS-N-18/*DELTA III: The SS-N-18/DELTA III weapon system is composed of the SS-N-18 two-stage, liquid-propellant SLBM and the 16-missile tube DELTA III-Class SSBN.

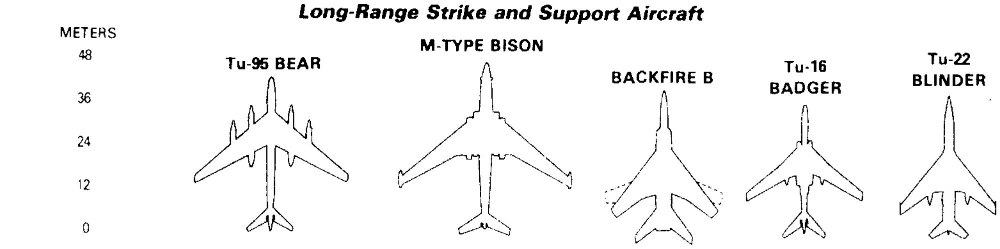
The SS-N-18 is the first Soviet SLBM to demonstrate a MIRV capability. Its maximum operational booster range is about 6,500 to 8,000 kilometers depending on the payload configuration. Greater range is possible if the SS-N-18 post-boost vehicle, or small third stage, is used to push the payload further along its trajectory, in addition to maneuvering to place reentry



DELTA II-Class SSBN

DELTA III-Class SSBN

Long-Range Strike and Support Aircraft



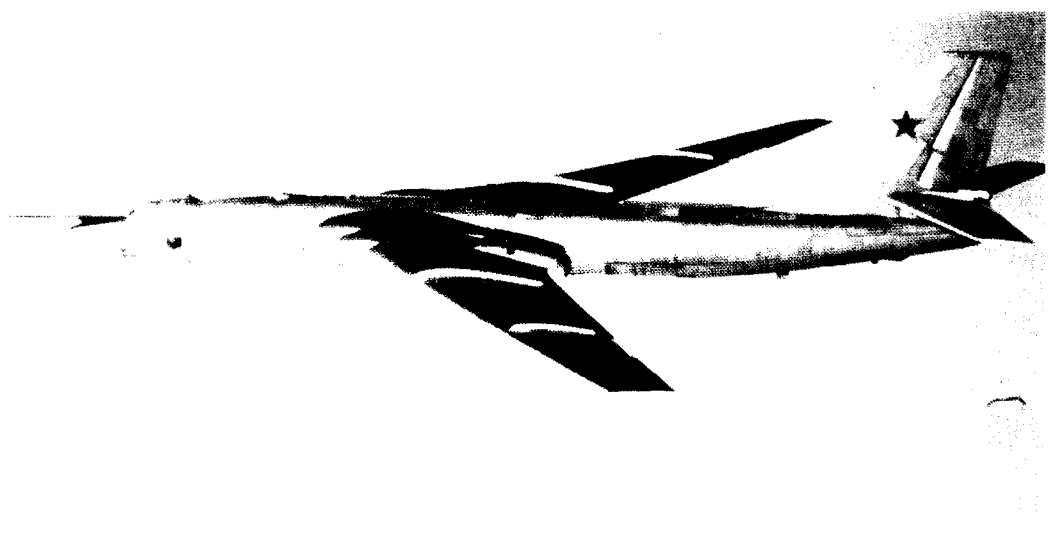
	Tu-95 BEAR	M-TYPE BISON	BACKFIRE B	Tu-16 BADGER	Tu-22 BLINDER
UNREFUELED COMBAT RADIUS (KM)	8,300	5,600	5,500	2,900	3,100
MAX SPEED (KTS)	500	540	1,100	500	800

vehicles in line with intended targets. A single RV version is also operational.

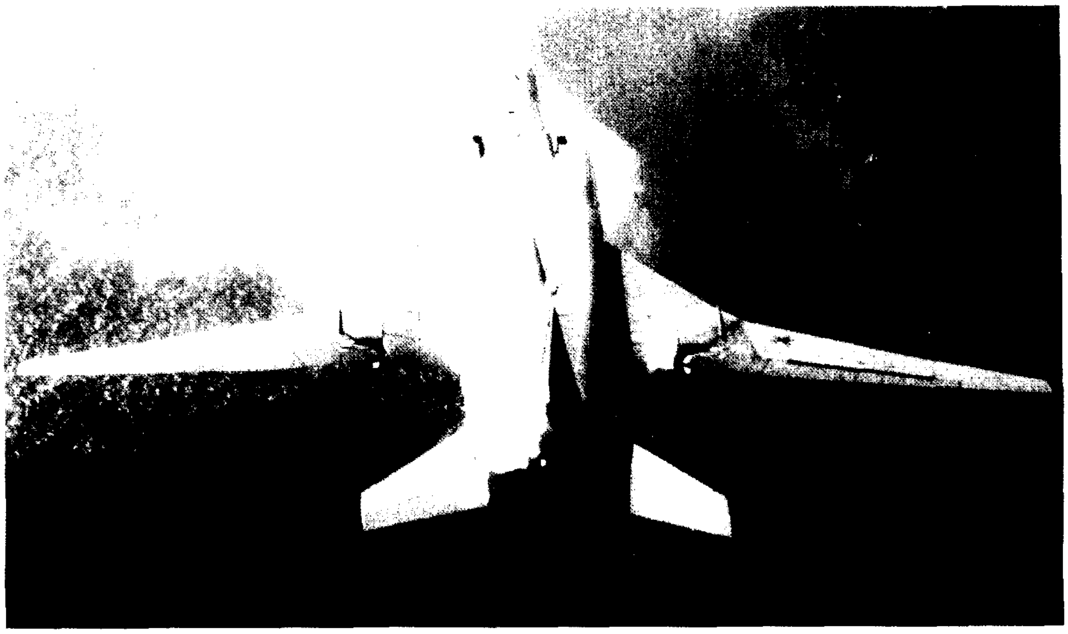
With the advances achieved in other Soviet strategic missile programs, it is assumed the missile for the new TYPHOON will be more capable than the SS-N-18 carried on the DELTA III, possibly having greater range, better accuracy, higher payload and more warheads. Today the DELTA III submarines can cover most US targets from the relative security of their home waters. The TYPHOON at 25,000 tons submerged displacement, twice the size of the DELTA III, will certainly have no less capability.

LONG RANGE AVIATION

Long Range Aviation is comprised of more than 800 strike and support aircraft. Three-quarters of these are intermediate-range Tu-16/BADGER and Tu-22/BLINDER; the long-



***M-TYPE/BISON* Long Range Bomber**



The Tupolev BACKFIRE Swing-Wing Bomber

range force includes more than 150 Tu-95/BEAR and M-Type/BISON, as well as some 70 Tupolev BACKFIREs.

The primary mission of LRA is to perform intercontinental and peripheral nuclear or conventional strike operations. The force also performs long-range reconnaissance, anti-naval strikes, and electronic warfare missions. Soviet long-range bombers complement the land and sea-based strategic missile forces, and in the event of intercontinental nuclear war they probably would be employed in follow-on nuclear strikes after initial missile strikes. The manned bombers provide the Soviets a degree of flexibility and diversity in their strategic attack forces not available with ballistic missiles.

The *Tu-95/BEAR* is a four-engine, swept wing, turboprop-powered bomber capable of carrying free-fall bombs or air-to-surface missiles. First seen in the mid 1950s, about 100 BEARs are still in service with LRA. Able to carry a payload in excess of 25,000 pounds (12,000 kilograms) to a range greater than 11,300 kilometers, it is both the largest and longest range Soviet bomber. The range and flexibility of some models can be further increased with mid-air refueling. Six variants of the BEAR have been produced, three for the strike mission, two for reconnaissance and one for antisubmarine warfare. Two of the strike versions are configured to carry the 650 kilometer AS-3/KANGAROO air-to-surface missile.

The *M-4/BISON* is a four-engine, swept wing, turbojet-powered bomber capable of carrying free-fall bombs. First seen in the mid 1950's, about 75 are still in service with LRA. About 45 of these are still configured as bombers while about 30 have been modified as air refueling tankers. They could be returned to bomber configurations with little effort. This long-range, heavy bomber is able to carry a payload in excess of 12,000 pounds (5,500 kilograms) to a range of about 8,000 kilometers. The range and flexibility of some models can also be increased with mid-air refueling.

The *Tupolev BACKFIRE* is the latest addition to the LRA forces. The BACKFIRE is a twin-engine, swing-wing, turbofan-powered bomber capable of carrying free-fall bombs or

air-to-surface missiles. Placed in service in the mid 1970s, over 70 are deployed with Long Range Aviation with a like number assigned to Soviet Naval Aviation. This aircraft is still in production at the rate of about two and one-half aircraft per month, 30 a year.

The BACKFIRE is a versatile, multipurpose aircraft capable of performing nuclear strike, conventional attack, antiship and reconnaissance missions. Its range and payload capabilities are comparable to those of BISON – more than 12,000 pounds (5,500 kilograms) payload and a range in excess of 8,900 kilometers with a bomb load. Its versatility makes it an excellent strike aircraft for peripheral and possibly for intercontinental missions. The BACKFIRE can be equipped with probes to permit inflight refueling which would increase its range and flexibility.

Intermediate Range Bombers: The 600 intermediate range Tu-16/BADGER and Tu-22/BLINDER aircraft represent a significant capability for use in theater strike operations. The Tu-16/BADGER is by far the most numerous aircraft in the force. Ten variants of this twin-jet, subsonic aircraft have been produced. These variants have expanded the mission of the BADGER beyond standard bombing to include electronic countermeasures, air-to- surface missile delivery, reconnaissance, and refueling. The BADGER G can carry two AS-5/KELT to a range greater than 3,200 kilometers while the BADGER A with a 8,360 pounds (3,800 kilograms) bomb load has a range of over 4,800 kilometers. The swept-wing, supersonic Tu-22/BLINDER is powered by two afterburning turbojet engines. The missile-carrier variant can deliver an AS-4 to a range of about 4,000 kilometers. The BLINDER has also been produced in free-fall bomber, reconnaissance and trainer versions.

Air-to-Air Refueling: The Soviets have an air-to-air refueling capability for Long Range Aviation. While they have not yet developed an

Tu-95/BEAR A, the Largest, Long Range Soviet Bomber

aircraft specifically for refueling, some 30 modified BISON aircraft serve as tankers. The Soviets evidently are developing a tanker version of the Il-76/CANDID transport aircraft. If so, the system is not yet deployed in sizable numbers.

SOVIET STRATEGIC DEFENSE FORCES

Since the end of World War II, the Soviets have built and maintained the world's largest strategic defense force. Soviet efforts include each of the primary areas of defense concern: air defense, ballistic missile defense, antisatellite defense, antisubmarine warfare and civil defense. When combined with the strong counterforce orientation of Soviet strategic offensive forces, these defense efforts point to a strategic concept of layered, in-depth defense of the homeland. This concept starts with preemptive attacks, if possible, against Western nuclear offensive forces and their command and control. It then proceeds to active defense against weapons enroute to targets and to the preparation of passive defenses to protect the Soviet governmental infrastructure and society against the effect of weapons penetrating the defenses.

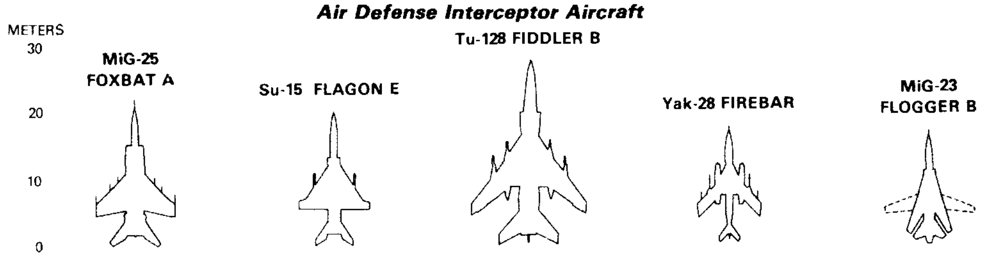
The technical problems associated with defense against air and missile attack are immense. Although Soviet defenses characteristically have fallen short of being able to handle fully the tasks they face, the USSR has persevered and is today entering a period of weapons system deployment aimed at measurably improving capabilities, primarily in air defense.

AIR DEFENSE

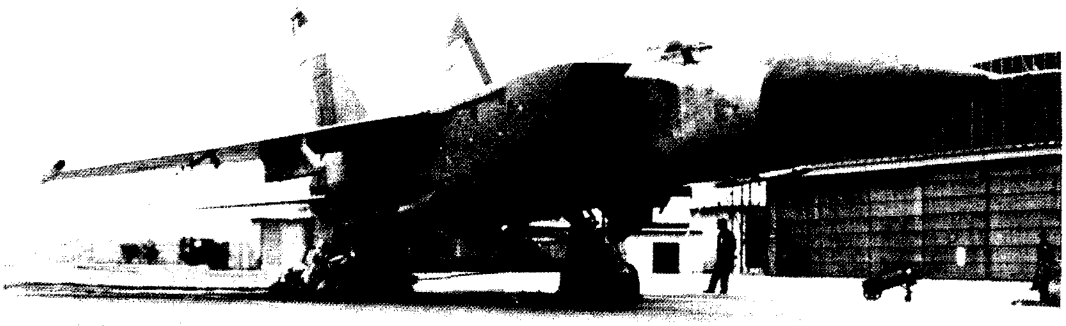
Manned Interceptors: Soviet air defenses combine the interceptor aircraft with early warning networks and surface-to-air missiles. There are more than 5,000 early warning and height-finding air defense radars throughout the USSR. Throughout the past decade, the USSR has continued to modernize its air defense forces which currently consist of some 2,500 aircraft, including the MiG-23/FLOGGER, MiG-25/FOXBAT, Su-9/FISHPOT, Su-15/FLAGON, Tu-128/FIDDLER and Yak-28/FIREBAR.

The number of older FISHPOT, FIDDLER and FIREBAR aircraft is decreasing as more modern interceptors are introduced to the inventory. FLAGON and the FLOGGER swing-wing interceptor aircraft are the workhorses of today's air defense interceptor force, comprising two thirds of the total inventory. The FLAGON, first deployed in the late 1960s, has been improved during the 1970s through additional armament and modernized avionics. The

Air Defense Interceptor Aircraft



	MiG-25 FOXBAT A	Su-15 FLAGON E	Tu-128 FIDDLER B	Yak-28 FIREBAR	MiG-23 FLOGGER B
SPEED (KTS)	1,625	1,200	950	1,080	1,350
RADIUS (KM)	1,450	1,000	1,250	900	1,100
ARMAMENT	4 AAMs	2 AAMs	4 AAMs	2 AAMs	4 AAMs
WINGSPAN (M)	14	9	18	12	8 (swept)



MiG-25/FOXBAT Interceptor

FLOGGER is the most widely deployed interceptor.

The Mach 3 FOXBAT, designed to counter a high-altitude threat, can operate at 25,000 meters. A cutback in its production in 1977-1978 suggests that Soviet policy shifted to meet requirements for a low rather than a high-level threat. A number of new interceptor aircraft types could enter the air defense force over the next decade. Soviet research and development most likely will emphasize the development of look-down/shoot-down systems designed to be able to operate above their intended targets, identify and track them against the cluttered background of the earth and fire missiles capable of functioning in the same environment.

AWACS: To increase the effectiveness of their force, the Soviets are developing an increasingly effective Airborne Warning and Control System (AWACS) to detect low-altitude penetrators. An earlier attempt, the Tu-126/MOSS, carrying a large rotodome radar on its back, does not appear to have met the need.

Organization: APVO's interceptor regiments are subordinate to ten air defense districts, each with its specific geographic areas of responsibility. The high concentration of interceptor regiments west of the Ural Mountains, and in the south, reflects the degree of Soviet concern over its perceived major threats NATO and the People's Republic of China.

Soviet air defense systems are unsurpassed and are deployed in great variety and quantities. The Soviet air defense umbrella is integrated and overlapping and includes both tactical — associated with the Ground Forces — and strategic components. If not occupied with Ground Forces requirements, the tactical air defenses could be available to supplement the strategic forces.

Tactical Surface-to-Air Missiles: The first truly mobile tactical SAM, the SA-4/GANEF, was introduced around 1967. The SA-9/GASKIN infrared homing missile, mounted on a scout car, was deployed in 1968 and the shoulder-fired SA-7/GRAIL was introduced in 1968.

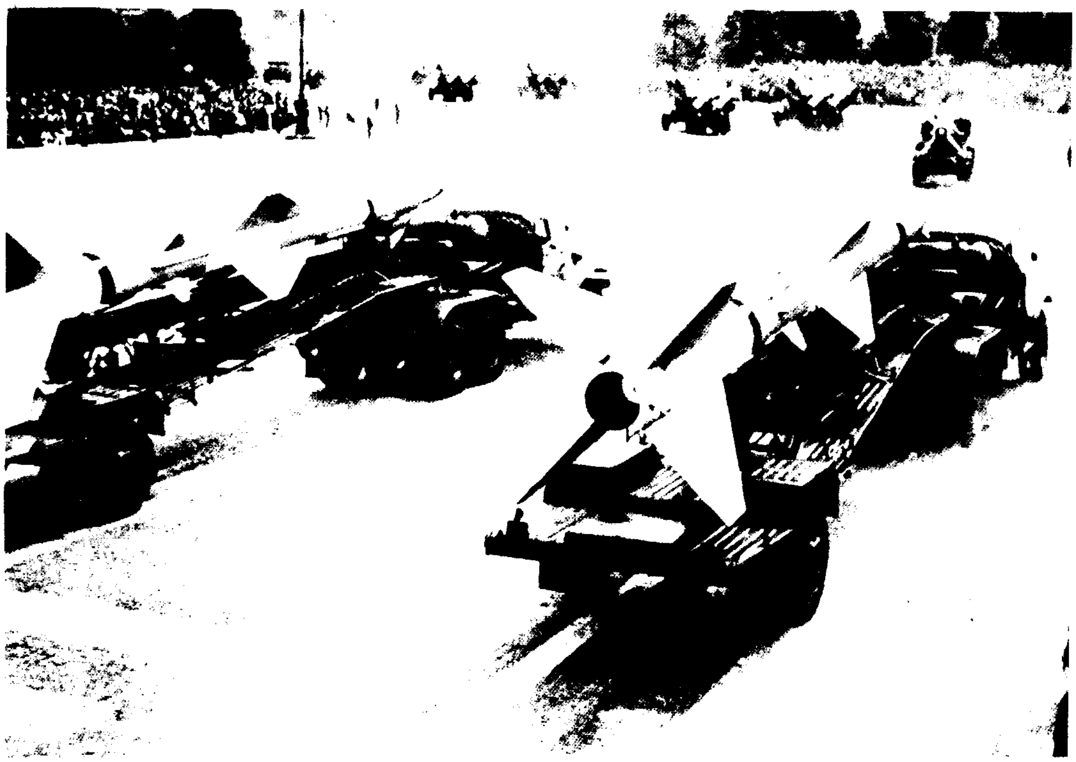
During the last ten years, the Soviets continued to improve the mobility, firepower and target-handling capability of their Ground Forces' air defense umbrella.

In the early and mid-1970s, they introduced the SA-6/GAINFUL and SA-8/GECKO at maneuver division level. The GECKO has a range of over ten kilometers and is unique among Soviet tactical air defense systems in that all the components needed to conduct a target engagement are on a single vehicle. The GAINFUL has a range of about 30 kilometers. These new SAMs can keep pace with rapidly advancing maneuver forces.

In the late 1970s, the Soviets fielded the short-range SA-13 on a tracked vehicle. The SA-13 has been deployed along with the ZSU-23-4 in the antiaircraft battery of motorized rifle and tank regiments. The SA-13 is probably a replacement for the SA-9.

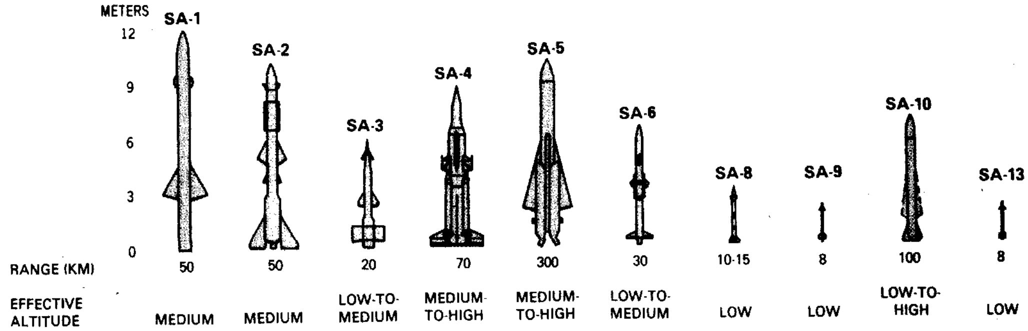
The trend of improving air defense coverage is expected to continue through the modification of existing systems and the introduction of new systems to supplement or replace them. This will be accomplished by improved technology. The diverse capabilities of Soviet air defense systems will be enhanced by improved command and control procedures to avoid destroying friendly aircraft while rendering the airspace over the ground forces virtually impenetrable to enemy aircraft. Other trends have been to increase the size of the engagement envelope, improve mobility, increase firepower, and increase target handling capability.

Strategic SAMs: The Soviet strategic surface-to-air missile (SAM) force is composed of some 10,000 launchers deployed at over 1,000 fixed sites within the borders of the USSR. These



SA-2/GUIDELINE Missiles on Transporters

Surface-to-Air Missiles



launchers can actually accommodate over 12,000 missiles because many of the launchers have multiple launch rails. In addition, other Warsaw Pact countries have over 1,000 launchers deployed in Eastern Europe. Four different SAM systems have been employed at these sites, and a new system—the SA-10—is now becoming operational. The four older systems are the SA-1/GUILD, SA-2/GUIDELINE, SA-3/GOA, and the SA-5/GAMMON, deployed in the USSR only. These systems are under the control of PVO Strany, the Air Defense of the Homeland, a separate service of the Soviet Armed Forces charged with protecting the Soviet Union from attack from the air.

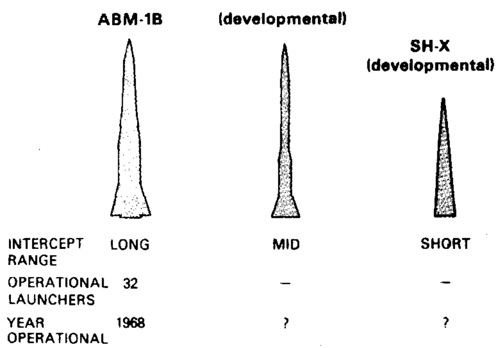
The SA-2, initially operational in 1959, has been the backbone of Soviet SAM defenses. It is deployed throughout the Soviet Union and is used by non-Soviet Warsaw Pact and other communist and Third World nations as well. The SA-3 is now deployed throughout the USSR and Warsaw Pact at over 400 sites. It provides low-altitude coverage and point defense to selected strategic areas. Over half the sites use newer four-rail launchers, rather than the two-rail launchers, thus doubling the numbers of missiles in the ready-launch position.

The SA-5 was first deployed in 1963, and deployment continues today with over 100 complexes operational throughout the Soviet Union. The SA-5 is a long-range interceptor designed to counter the threat of high-performance aircraft.

The SA-10 system is the latest Soviet strategic SAM system and is designed for increased low-altitude capability. With radars which are more advanced than previous systems, the SA-10 was designed to counter low-altitude manned aircraft, although it may have some capability against cruise missiles.

In all, the Soviets maintain a vast network of SAM sites which are constantly being upgraded. This network, which acts in concert with the

Antiballistic Missiles



ABM-1B/GALOSH Antiballistic Missile in Transporter/Launcher Canister

large numbers of interceptor aircraft and antiaircraft artillery, and is enhanced by a virtual 100 percent high-altitude coverage of early warning radars, presents a formidable barrier to any would-be attacker from the air.

ABM DEFENSE

The Soviets maintain the world's only deployed antiballistic missile (ABM) defense. The system includes peripherally located HEN HOUSE ballistic missile early warning (BMEW) radars and four operational ABM launch complexes near Moscow. The Moscow defenses currently include the ABM-1B/GALOSH interceptor missiles, battle management radars and missile engagement radars.

The Soviets have continued to improve their BMEW capability by constructing large phased-array radars to supplement the old HEN HOUSE network and to close existing gaps in coverage.

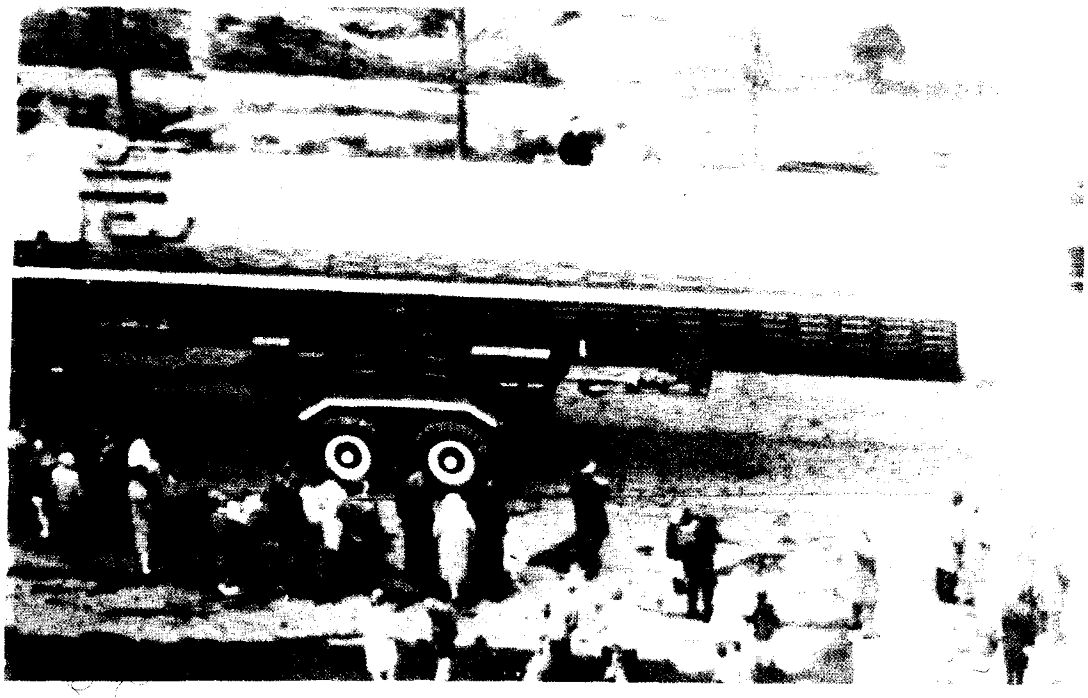
They also continue to engage in an active and costly ABM research and development effort, which they are permitted to do under the ABM Treaty of 1972. Their main concentration appears to be on improving the performance of their large phased-array detection and tracking radars and developing a rapidly deployable ABM system. When development of this system is completed, its main elements could be deployed in the Moscow area to replace or supplement the existing system. Such deployment would further upgrade Moscow's defenses, and could provide operational experience for broader deployment. Improving the Moscow defenses is allowed by the 1972 ABM Treaty as long as the 100 interceptor launcher limit is not exceeded. Deployment in additional locations is prohibited by the Treaty.

ANTISATELLITE DEFENSE

The Soviets' defensive posture extends into space as well with the only antisatellite (ASAT) system known to be operational. The demonstrated Soviet nonnuclear low-altitude orbital ASAT interceptor poses a known, if presently limited, threat to some US satellites. It is anticipated the Soviets will continue work in this area with a goal of negating satellites in high orbit, as well as developing more effective kill mechanisms, perhaps using a laser or some other type of directed energy weapons.

SOVIET CIVIL DEFENSE

Soviet civil defense is a nationwide program under military control. The chief of Soviet civil defense is a deputy minister of defense and general of the army. Full-time civil defense staffs



exist at each echelon of the Soviet administrative structure: national republic, *oblast*, city, and urban and rural *rayon*. Civil defense staffs also exist at significant industrial and other installations. In peacetime, more than 115,000 people work full-time in the program. In wartime, the number could be upwards of 16 million. The program costs more than the equivalent of $2 billion annually.

Protection of their leadership has been a primary objective of the Soviets. Given a war-crisis warning of only a few hours, the survival and effective functioning of the 110,000 government and other officials necessary to lead the Soviet Union may be possible. This protection has been achieved through the construction of deep, hard urban shelters and countless relocation sites. Leadership protection, from the national to *rayon* level, is intended to assure the maintenance of control throughout the society.

A civil defense problem of vital concern to the Soviets is their continuing inability to provide physical protection for their industrial installations. Although there have been numerous references in Soviet civil defense literature to the desirability of dispersal of key industries for protection purposes, little has been done to achieve this goal.

The Soviet leadership considers the protection of these resources through their civil defense program to be an indispensable element of their strategy. They continue a longstanding commitment to heavy investment in their civil defense program.

VI QUEST FOR TECHN

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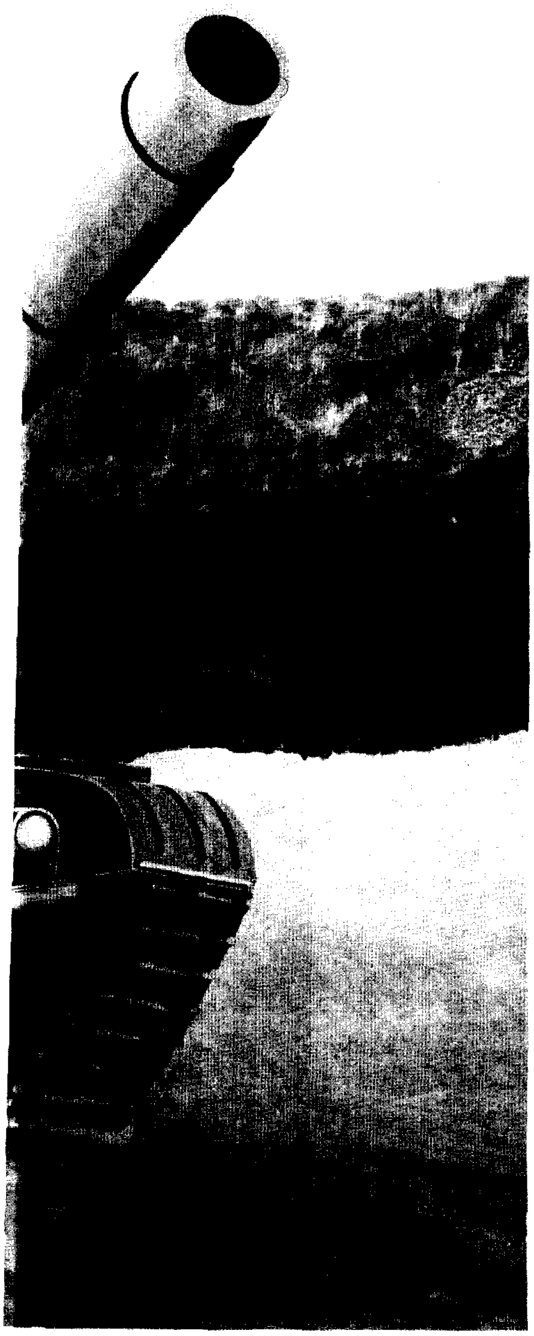


The Soviets have often stated their goal of superiority in science and technology. The present, growing Soviet military capability reflects the achievements of a technological base that has grown steadily since the late 1950s, despite the fact that the Soviets have nothing comparable to the commercial technology base in the Western World.

The recent increase in the level of deployed Soviet military technology is significant, because the West has customarily relied on its now eroding technological superiority to offset the Soviet Union's historical quantitative advantage in deployed weapons. Even the United States' lead in basic military technology is presently being challenged.

During the 1970s, the Soviets have dramatically reduced the US lead in virtually every important basic technology. The United States is losing its lead in key technologies, including electro-optical sensors, guidance and navigation, hydro-acoustics, optics and propulsion. In many areas where the United States continues to lead the Soviets, their technology has achieved a level of adequacy with respect to present military requirements.

Over the past ten years, the Soviet Union is estimated to have taken the lead in the development of directed energy weapons such as high-power lasers and possibly radio frequency devices. The USSR is also thought to have enlarged its lead in electrical power sources for such directed energy weapons, as well as its more customary lead in chemical explosives.

The T-80 tank, now in experimental production, is the third, new class of tanks with markedly improved firepower, armor and mobility produced by the USSR in recent years, a weapons system underscoring the across-the-board Soviet quest for quantitative and qualitative weapons superiority.

At present the United States still leads the Soviets by two-to-seven years in microelectronics, computers and jet engines critical to the development of advanced weapon systems.

In the past, to offset the superior quality of Western weapons, the Soviets have deployed larger quantities of military equipment. Furthermore, they have typically fielded one-and-one-half-to-two generations of equipment while the West fielded a single generation. And, they have often modified each of these generations two or three times, upgrading their technology with each modification. This combination of a high rate of deployment and an almost continuous program of modifying fielded equipment substantially reduces the average age of deployed technology. The West's technological lead is thus doubly eroded by the much younger age, as well as by the very large number, of fielded Soviet equipment.

The Soviets' weapons development effort, paced by a weapons acquisition process in which key national decision-makers directly participate, represents a systematic correction of deficiencies in the USSR's existing military capabilities and the methodical addition of new weapons capabilities.

The momentum of the Soviet research and development program is likely to continue. Scores of major Soviet systems are now in various stages of test and evaluation. Many of these systems are quite significant, for example, the T-80 tank, the TYPHOON ballistic missile submarine, the OSCAR cruise missile submarine, a new interceptor and associated look-down/shoot-down missile and a variety of precision-guided munitions.

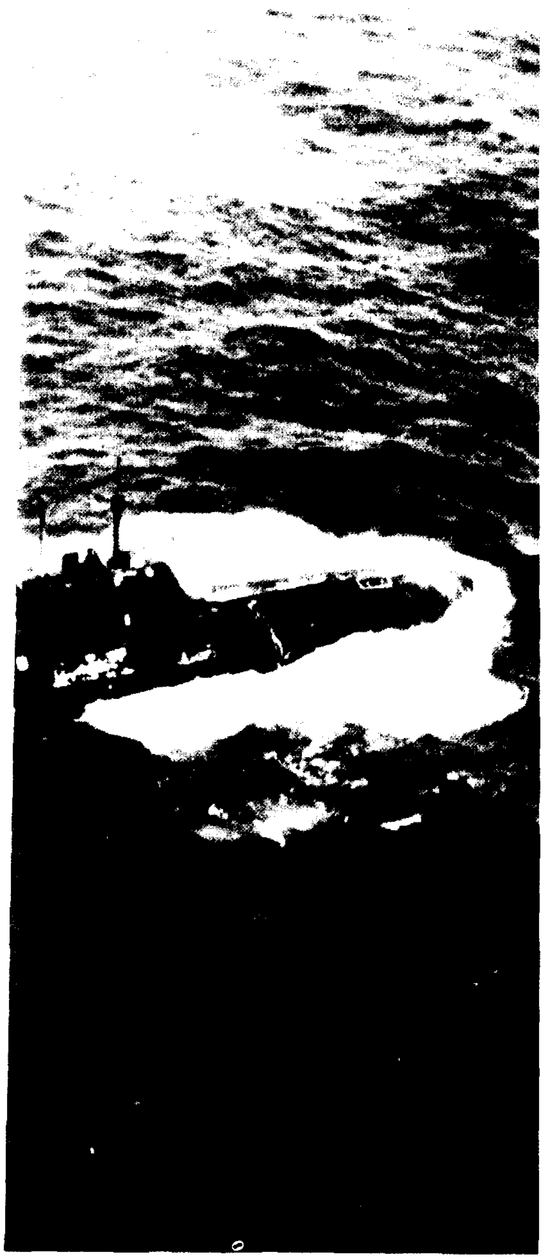
Pacing each of the Soviet weapon system developments is a very large research effort in the sciences and technologies. Over the past ten years, the high-priority military research and development sector received large infusions of

capital investment leading to significant growth in those research, design and test facilities critical to Soviet weapons development.

A concurrent increase in the size of the Soviet R&D manpower force has also been noted. In 1980 the USSR was believed to have had nearly 900,000 full-time equivalent scientists and engineers engaged in research and development. This is the world's largest aggregation of scientists and engineers and is compared to about 600,000 for the United States. While the number of scientists and engineers specifically engaged in Soviet military R&D is unknown, it is clearly a large percentage of their total effort.

Soviet Research and Development Centers

In 1980 the Soviets graduated about 300,000 engineers and 150,000 natural scientists (including life sciences and medicine) out of a total of over 800,000 graduates. The trend in Soviet higher education graduates has been one of steady increase, although the rate of increase has declined in recent years. By 1990 the total number of graduates in the USSR is expected to be at least 950,000 per year.



ALFA-Class Nuclear-Powered Attack Submarine: Deep-Diving, Titanium Hull, Submerged Speed Estimated to be Over 40 Knots.

MILITARY TECHNOLOGIES

Certain critical military technologies including electronics, propulsion, materials and life sciences are receiving highest priority in the USSR today.

Electronics and Computers: Although the United States remains the world leader in the field of microelectronics and computers, Soviet progress in the past 15 years has been impressive.

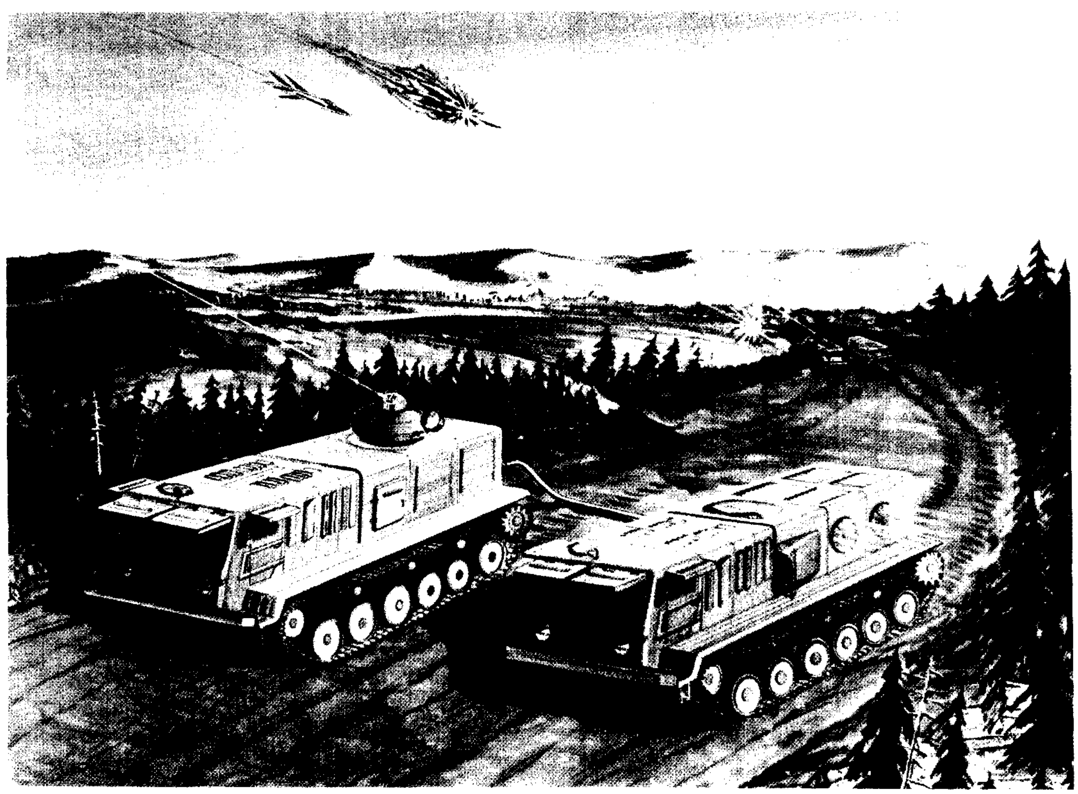
Advanced miniaturized electronics or microelectronics are vital and necessary elements of modern computers. Since modern electronic computers are the "heart" and "brain" of military weapons, and industrial, economic, management and other complexes or systems, Soviet achievements in microelectronics greatly benefit the military.

In 1965, Soviet development and production of microelectronics and computers was about 10-to-12 years behind US capability. Today, the average relative position or "gap" is three-to-five years with a few outstanding developments following US technology by only two years and some problem areas lagging by as much as seven years. Important Soviet decisions to acquire US and Western technology and copy, or "reverse engineer," microelectronics and computers by

Soviet RYAD Computers

any means available have played a fundamentally important role in their success. The Soviet RYAD series of computers are based on existing US computer equipment. Similarly, Soviet microcomputers and microprocessors are clearly based on US minicomputer and microprocessing equipment already on the market. The Soviets have also copied many different types of US integrated circuits including computer logic and memory chips from practically all the major US microcircuit manufacturing facilities. Without the transfusion of US technology and equipment, the Soviet Union's capabilities would almost certainly have remained at the 10-to-12 year gap of the 1965 era.

Directed Energy Weapons: The Soviets have devoted substantial resources to high technology developments applicable to directed energy weapons. Their knowledge of radio frequency weapons, as demonstrated in Soviet open literature, and the fact that they are developing very high peak-power microwave generators, gives rise to suspicions of possible weapon intent in this area as well. The Soviets have been interested in particle beam weapons (PBW) concepts since the early 1950s. There is considerable work within the USSR in areas of technology relevant to such weapons.



Artist's Concept of Soviet Surface-to-Air Laser Weapons

The Soviet high energy laser program is three-to-five times the US level of effort and is tailored to the development of specific laser weapon systems. In contrast, the United States largely confines its laser programs to exploratory work. The Soviet laser-beam weapons program began in about the mid-1960s. Since then the Soviets have been actively pursuing the development of all the high energy laser types considered most promising for future weapons applications. They have worked on the gas dynamic laser, the electric discharge laser and the chemical laser. Available information suggests that the Soviet laser weapon effort is by far the world's largest. Their development of moderate power weapons capable of short-range ground-based applications, such as tactical air defense and anti-personnel weapons, may well be far enough along for such systems to be fielded by the mid-1980s. In the latter half of this decade, it is possible that the Soviets could demonstrate laser weapons in a wide variety of ground, ship and aerospace applications.

Pulse Power and Technology: Pulsive power and energy conversion have been recognized as key technologies in the development of directed energy weapons. Possible applications include tactical airborne electric discharge lasers, tank and helicopter-mounted laser weapons, strategic or defensive antiballistic missile and antisatellite weapons and beam weapons for both short and long-range antiship missile defense. A principal pacing factor in the development of directed energy weapons is the availability of a suitable supply of energy. Pulse power technology may be the pacing factor in a weapons program even after the feasibility of beam propagation and adequate lethality is demonstrated. Because the requirements of beam weapons are unique and, in many cases, exceed current state-of-the-art, they have driven the major research and development efforts in the USSR.

Propulsion: The Soviet Union customarily provides the propulsion units for all its aircraft, ships and land vehicles. The Soviets have conducted research and experimentation on new types of propulsion concepts for generations and have often produced innovative designs. For example, the SA-6/GAINFUL missile unveiled in 1967 used the world's first integral rocket ramjet. The Soviet recognition of the advantages in gas turbines for naval propulsion resulted in an impressive shift to this form of propulsion in the past 20 years. In addition to their low weight and volume, the advantages of gas turbines include operational flexibility, reduced manning levels, and ease of maintenance.

Until recently, the Soviet Navy's KARA-Class guided missile cruiser, operational since the early 1970s, was the world's largest gas turbine-powered warship. The USSR still leads the world in the widespread use of naval gas-turbine propulsion. It has applied this mode of propulsion to over 200 major and minor combatants.

Propellants: Soviet scientists are investigating all aspects of propellant chemistry and performance characteristics at several academic institutions throughout the USSR. The Soviets design their artillery and other propellant charges to obtain maximum performance, although they tend to use low energy propellant formulations in most of their large-caliber ammunition to maximize safety and storage life.

Explosives: The USSR is active in all facets of explosives research and development. The Soviets can now synthesize every known explosive compound with a military application, including research for fuel-air explosives. They can load their newest weapons with warheads containing TNT (trinitrotoluene), RDX (cyclotrimethylene trinitramine) or HMX (cyclotetramethylene tetranitramine). Western fuel-air explosive munitions are capable of clearing paths through minefields to permit the passage of armored vehicles. Such explosives can also do extreme damage to unarmored targets such as radar vans and aircraft.

MANUFACTURING

The success or failure of all weapons is heavily dependent on the quality and quantity of the materials used in their construction. The USSR has the largest raw materials base in the world and claims deposits of nearly all minerals needed by a modern economy. Since the 1950s, materials used in Soviet weapon systems have steadily improved.

Through considerable efforts and a combination of foreign and indigenous technology, the Soviets have built an imposing industrial base. While frequently less efficient in their use of capital, raw materials and manpower, the Soviets have nonetheless assembled the plant and equipment necessary to build annually thousands of tanks, trucks and aircraft and dozens of naval vessels.

Welding has assumed a high position among the fabrication techniques used by the Soviets because it permits complex shapes to be formed from a limited variety of mill products (e.g., sheet, plate, tube and rods). To augment their strong position in this area, the Soviets graduate several thousand welding engineers annually. The Soviets have been important innovators of welding methods, e.g., friction welding, submerged-arc welding, glue welding and certain aspects of pulse-arc welding. They have been creative in their development of methods for welding dissimilar and difficult-to-weld materials. Their construction in the late 1950s of what continues to be the world's largest forging and extrusion presses at 75,000 tons and 20,000 tons, respectively, was a bold move that enables the Soviets to fabricate aircraft structural components in sizes and with efficiencies that are unsurpassed.

By the late-1960s, the Soviets had perfected two new methods for refining steel and other alloys—electroslag remelting and plasma-arc melting—advancements in the methods to improve the properties of alloy materials.

The vast amount of technical data published by the industralized Free World on materials technology has permitted, and has probably encouraged, the USSR to emulate and adopt Western developments. The differences in the materials used in Soviet and US weapon systems are thought to be approaching the point where the differences are no longer militarily meaningful.

Metallic Materials: Soviet achievements in metallurgy cover the complete spectrum of research and development emphasizing alloy development and materials processing.

The Soviet Union produces a full range of structural steels from the plain carbon and high-strength low-alloy steels to the stainless and maraging steels. The Soviets also are producing a unique high-manganese steel for cryogenic applications due to their abundant supply of manganese-bearing ores.

While high energy costs have reduced Western use of magnesium alloys, the Soviet Union's production of magnesium alloys was increasing in the 1970s. The weight advantages of their magnesium-lithium alloys may cause this material to be useful in aerospace systems.

Since the 1940s, the major industralized nations have committed great amounts of R&D manpower and resources to improving the performance of the superalloys. The term "superalloy" refers to alloys that possess good strength and oxidation resistance in the temperature range of 650°C-2000°C. These alloys are of critical importance in the high temperature sections of gas turbine engines. The Soviet superalloys are thought to be as capable as Western alloys with respect to temperature capability but may possess shorter service lives.

The USSR is the world's largest producer of titanium alloys. The Soviets' titanium alloys are being extensively applied to enhance the performance of aircraft, missile, and naval ship systems using modern welding techniques.

Composite Materials: Since the mid 1960s, the Soviets have been constructing small naval vessels from glass-fiber-reinforced plastics. The glass-fiber-reinforced plastics also have been introduced into aircraft, missile and ground weapons applications. Based on Western successes in the late 1960s on high-performance carbon and boron-fiber reinforced materials, the Soviets launched a parallel effort in the mid 1970s. Their program is progressing along similar lines to that taken by the US and other Western countries by first incorporating such materials into aircraft secondary structures and control surfaces. The large Soviet commitment of physical and manpower resources to the development of a variety of high-modulus fiber-reinforced metal, organic and inorganic matrix composites should enable them to gain ground quickly in this field.

Organic Materials: By the early 1960s, the Soviets realized the importance of organic materials--resins, elastomers, adhesives, synthetic fibers—to a modern economy and military preparedness. Since that time, the USSR's chemical industry has been expanding at a formidable rate. Much of the technical knowledge has been directed at achieving high temperature capabilities.

LIFE SCIENCES

The Soviet Union has extensive R&D programs in the life sciences, the medical, biological, and behavioral sciences, and, in some areas, their capabilities equal or exceed those of the United States.

In general, the Soviet Union's life science research program centers on those areas that permit them to establish or maintain a military advantage, and those areas that will contribute to the solution of critical economic, industrial and political problems. While their early efforts in manned space flight, for example, were devised to gain maximum political benefit, their current efforts seem to be related to the establishment of a military presence in space. Man-related problems and life support systems capability are the chief limiting factors in Soviet manned space flight.

The Soviets also conduct extensive research in other areas that contribute to the establishment of a military advantage. Underwater physiology, submarine habitability, human factors engineering and aviation physiology are examples of this type of research. The research goals in these areas are related to improving the performance of the biological component of their weapon systems.

The Soviet Union also conducts biomedical research in many other areas that affect their military capability. There is continuing Soviet interest in the recognition of emotional and physiological stress by voice analysis. Battlefield troops, pilots, submarine personnel and other isolated individuals could be monitored by voice analysis. The only constraints would be the quality of voice transmission and the analytic techniques.

Other areas of biological science research in the Soviet Union are directly applicable to developing weapon systems. Research in behaviorial modification, biological warfare and genetic engineering all have the potential to result in the development of new and extremely effective weapons.

Behavior Modification: The Soviets are currently engaged in a number of research efforts directed at modifying the brain, its activity and ultimately the behavior of individuals and large groups of people. Significant work in this area—including psychosurgery, microelectrode implantation, electromagnetic radiation, drugs and physical methods for altering behavior—has been conducted. The Soviets have political and military goals for conducting behavior modification research.

Biological Warfare: Since the summer of 1979, information has been obtained from a variety of sources that presents strong circumstantial evidence of an inadvertent release of anthrax bacteria from a highly secured military installation in Sverdlovsk, in the USSR. The available information and our technical analysis point strongly to biological R&D activities that exceed those one would normally expect for biological warfare protection purposes. Furthermore, we cannot discount the probability that the Soviets have continued to pursue other microbiological agents for possible development and standardization as weapons of biological warfare.

Genetic Engineering: The Soviet Union is currently conducting extensive work in genetic engineering, which is the ability to selectively modify the composition of the genetic blueprint (DNA) in order to engineer biological organisms to meet specific design criteria. Although there is no work with genetic engineering being done in the Soviet Union that is known to be directly related to biological warfare, there is interest in this area. Soviet scientists are researching genetic regulatory mechanisms, recombinant gene vectors, recombinant gene stability, and basic aspects of viral and bacterial genetics, all of which have potential value for development of biological warfare agents. Similar research is, however, being pursued on a broader scale in the United States and may serve as an impetus for increased Soviet interest. Of greatest potential benefit to the military is the development of vaccines using recombinant technology for troop immunization.

SPACE PROGRAM

The Soviets have a vigorous and constantly expanding military space program. In the past ten years they have been launching spacecraft at over 75 per year, at the rate of four-to-five times that of the United States. The annual payload weight placed into orbit by the Soviets is even more impressive—660,000 pounds—ten times that of the United States. Some, but by no means all, of this differential can be accounted for by long-life US satellites using miniaturized high technology components. Such an activity rate is expensive to underwrite, yet the Soviets are willing to expend resources on space hardware at an approximate eight percent per year growth rate in constant dollars.

We estimate that 70 percent of Soviet space systems serve a purely military role, another 15 percent serve dual military/civil roles, and the remaining 15 percent are purely civil. The Soviet military satellites perform a wide variety of reconnaissance and collection missions. Military R&D experiments are performed onboard Soviet manned space stations, and the Soviets continue to develop and test an ASAT antisatellite co-orbital interceptor.

The Soviets appear to be interested in and possibly developing an improved ASAT. A very large space booster similar in performance to the Apollo program's Saturn V is under development and will have the capability to launch very heavy payloads into orbit, including even larger and more capable laser weapons. This booster is estimated to have six-to-seven times the launch weight capability of the Space Shuttle.

Soviet space research and development, test, production, and launch facilities are all undergoing a continuing buildup. The new booster will be capable of putting very large permanently manned space stations into orbit. The Soviet goal of having continuously manned space stations may support both defensive and offensive weapons in space with man in the space station for target selection, repairs and adjustments and positive command and control. The Soviet's predominantly military space program is expected to continue to produce steady gains in reliability, sophistication and operational capability.

TECHNOLOGY TRANSFER

In addition to being the source of much of the Soviet Union's electronic and computer technology and advanced manufacturing capability, the industrialized Free World, during the past decade, has supplied the Soviet industrial sector with billions of dollars worth of efficient machine tools, transfer lines, chemical plants, precision instrumentation and associated technologies. These goods and technologies have unquestionably played a major role in the modernization and expansion of Soviet industry. Although much of the technology embodied in the Western equipment is known and understood by Soviet technicians, the purchase of such equipment via long-term low interest loans has enabled the Soviet Union and other Warsaw Pact countries to achieve an industrial expansion at a substantially faster rate than would have been possible with indigenous resources.

In addition to the acquisition of Western industrial plants and equipment, the decade of the 1970s has also witnessed greatly expanded contact between the Free World and Soviet scientists and engineers. The scope and depth of their interest in the advanced and emerging technologies is exemplified by the exchange agreements that the Soviet Union has negotiated with the United States since 1972.

Bilateral S&T Exchanges: In 1972 the Soviets signed the first four of 11 agreements with the United States dealing with cooperation in the fields of science and technology. These 11, now combined into ten agreements, have encompassed as many as 250 different working groups and subgroups for the exchange of scientists, scientific and technical information and documentation, and joint research, development, testing and exchange of research results and experience.

Another mechanism of technology transfer under seven of the ten agreements is contained in a provision, "Article IV," stating that both parties encourage and facilitate the establishment and development of direct contacts and cooperation between agencies, organizations, and firms of both countries. The majority of the "Article IV" agreements are with the Soviet State Committee for Science and Technology. This is the unit charged with the responsibility of coordinating technology acquisitions from the West.

Student Exchanges: Student exchanges usually occur under the aegis of a cultural agreement. The student exchanges with the Soviet Union and the East European communist countries are administered by the International Research and Exchanges Board (IREX). The average Soviet student in such exchanges is 33-to-35 years of age, possesses a Candidate degree, roughly equivalent to a Ph.D., and has about eight years of practical experience, almost all of which apply to the study and conduct of research in the hard sciences or engineering. Further, the students want to concentrate in the emerging technological areas, with many of these areas having immediate military application.

In the senior scholar program, each side sends a number of scholars for a total of 50 man months per year. As with the student exchange program, the Soviets tend to send scientists, while the United States sends persons specializing in the arts, literature, and history. Until a few years ago, most Soviets in this program conducted very basic scientific research. Now, nearly all of them propose to study in the emerging scientific fields, with most of these fields having direct and immediate military application.

Inter-Academy Exchange: The exchange between the US and Soviet Academies of Science makes available another mechanism of technology transfer. The provisions of this agreement permit the exchange of 12 scientists per year (one month each) for the purpose of survey and familiarization visits, and as many as 18 scientists for periods of three to 12 months each for a maximum of 88 man months per year.

Conferences/Symposia: The problem of technology transfer at conferences is one of additional concern. US companies use such gatherings to advertise the results of their work to industry, government, and the academic community in the hopes of securing additional contracts. The academic community uses conferences and symposia for the presentation of major papers. The government frequently uses this media to advertise its requirements and to provide status reports. For whatever reasons, this media makes available a wealth of scientific and technological data that is probably not surpassed by any other nation.

Unclassified Reports: All research reports and studies conducted by, or for, the US government are placed in one or more repositories. In defense, most reports and studies are sent to the Defense Technical Information Center (DTIC), where they are accessioned and the classified documents stored. Such classified documents are readily available to other government agencies and personnel who have the requisite clearances and need-to-know. They are also available to government contractors who have established a valid need through their contracting officer and possess the necessary facilities and cleared personnel. Unclassified reports received by DTIC are forwarded to the National Technical Information Services (NTIS) operated by the Department of Commerce. These reports are available to anyone for a very nominal fee.

The communist countries are some of NTIS' best customers. Until their subscription was terminated in February 1980, the Soviets purchased each of the estimated 80,000 documents entering NTIS each year. The remaining Warsaw Pact countries and individuals acting on behalf of the Soviets still purchase from the NTIS.

Professional/Open Literature: For many years professional and open literature has been exploited for technology transfer information. There is believed to be a great imbalance in the value of such literature in favor of the communist countries.

The Soviets are seeking Western technology and equipment by any and all means in their quest for technological superiority. In the past, Soviet weapon designers appeared to be somewhat constrained in the effectiveness of the products they could develop by a limited technological base for specialized components. Technology transfer affords them the opportunity to rectify such deficiencies. The vast amount of information gained from the United States saves the Soviet's a considerable amount of time and money by pointing out the fruitful avenues of research and development.

VII SOVIET GLOBAL

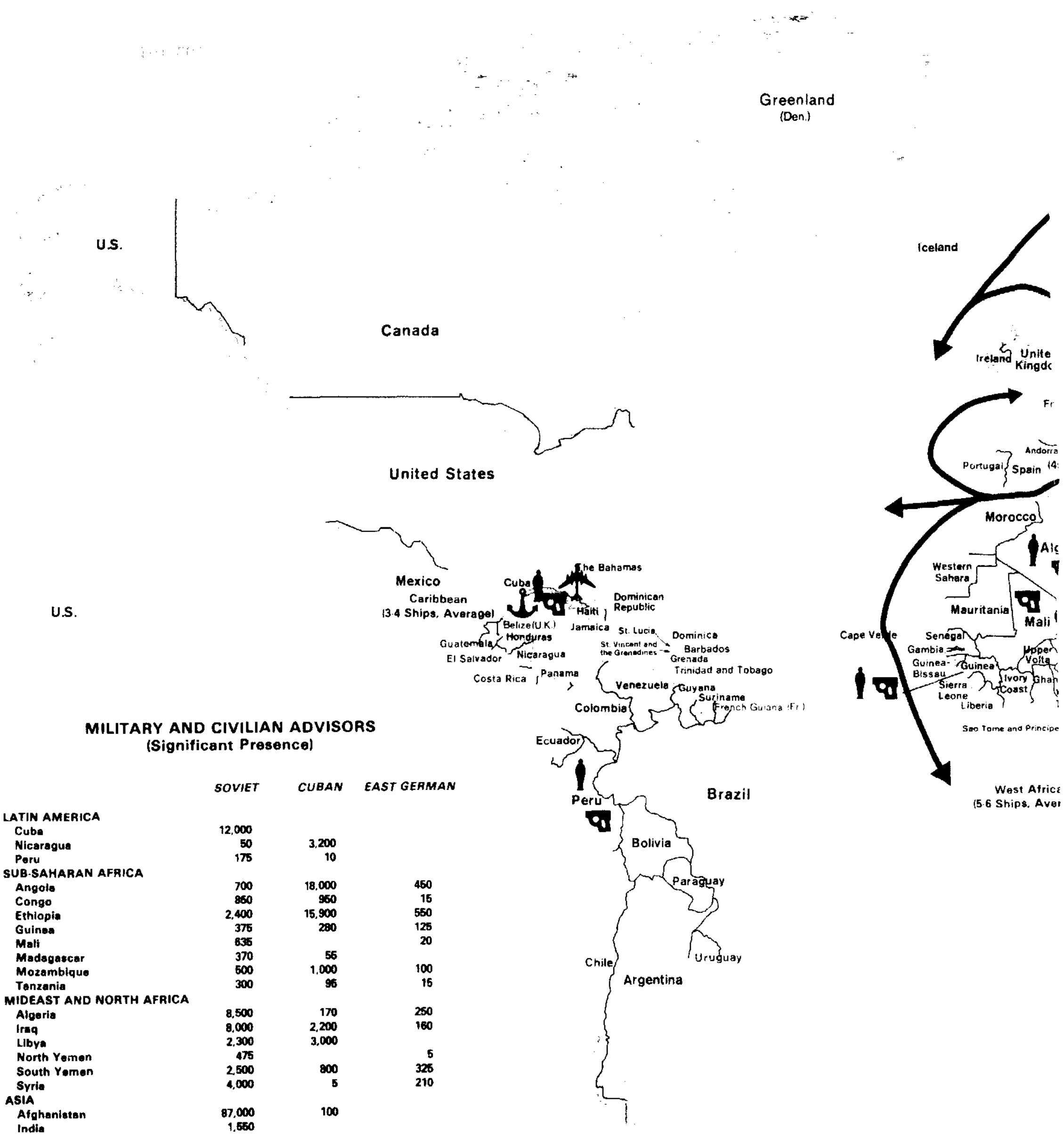
WER PROJECTION

As self-designated leader of the communist world and as a superpower with global ambitions, the USSR and its expansionist efforts abroad are targeted at spreading and solidifying USSR political, economic and military influence and drawing nations into its orbit. The Soviets view the projection of power in much more comprehensive terms than commonly understood in the West. Their programs seek to integrate all instruments at their disposal in pursuit of their goals. In the past decade, Moscow's increasing boldness can be linked directly to the growing capabilities and utility of its military forces, applied in a pragmatic, coordinated and flexible manner with other military, political, economic and subversive measures to influence world events. The USSR's enhanced confidence in its capabilities to project power through a variety of military and non-military means has widened Soviet options and has been a key factor underlying its increased activities in Africa, the Middle East, Asia and Latin America. In the military realm alone, involvement abroad has progressed steadily from the limited use of military assistance in the 1950s, to the occasional use of its armed forces in defensive roles in the early 1970s, to the extensive use of proxies in advisory positions and combat operations over the last five years, to the direct application of large-scale Soviet military force in Afghanistan since December 1979.

Violence and coercion have played a central role in the establishment and maintenance of

The CANDID jet transport, which can carry 140 troops or 40 tons of cargo, entered service in the mid-1970s to help meet the USSR's worldwide military airlift requirements. Because of their mobility, the USSR's seven airborne divisions are particularly well-suited for the rapid introduction of Soviet combat forces.

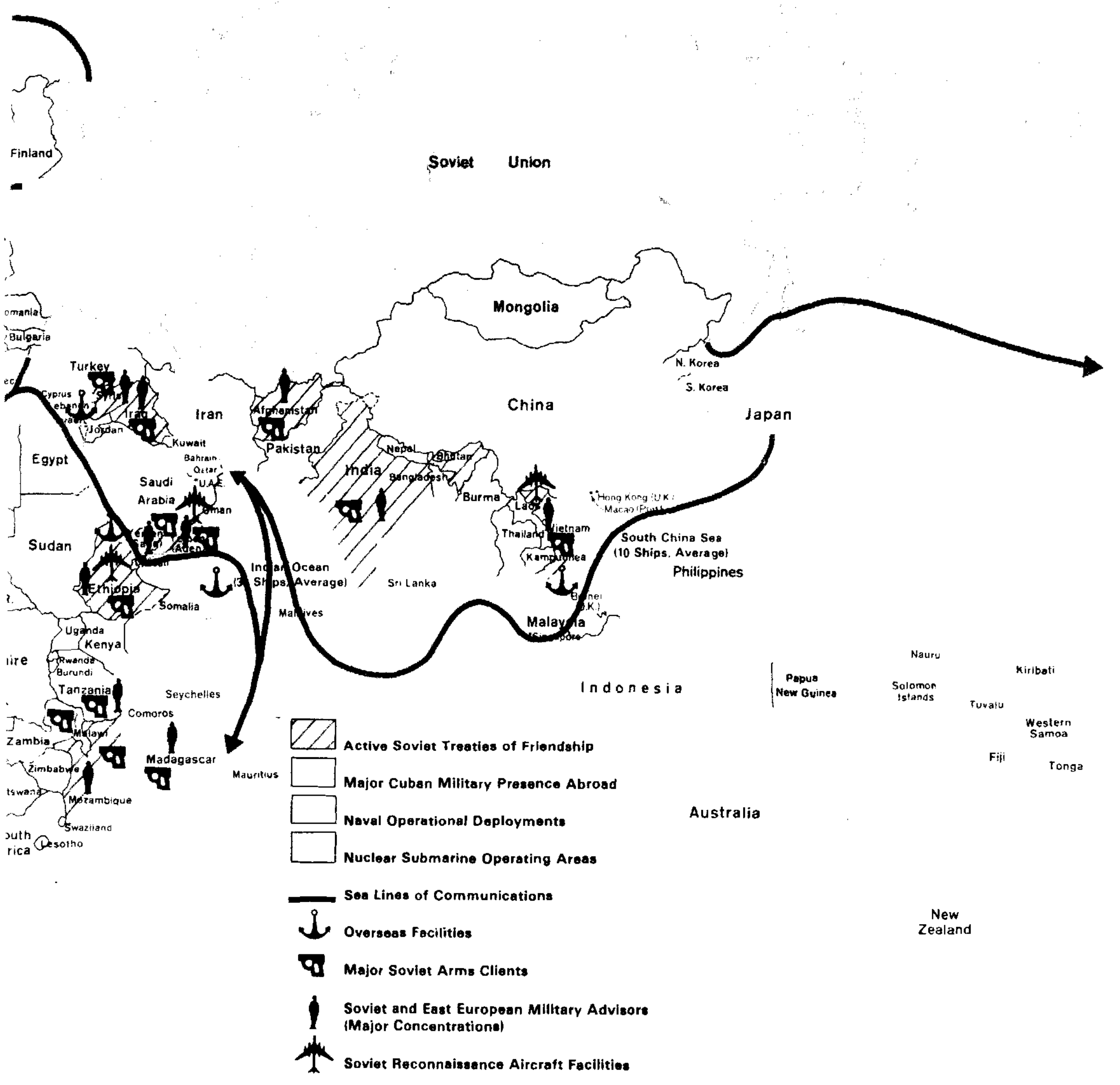
SOVIET GLO



MILITARY AND CIVILIAN ADVISORS
(Significant Presence)

	SOVIET	CUBAN	EAST GERMAN
LATIN AMERICA			
Cuba	12,000		
Nicaragua	50	3,200	
Peru	175	10	
SUB-SAHARAN AFRICA			
Angola	700	18,000	450
Congo	850	950	15
Ethiopia	2,400	15,900	550
Guinea	375	280	125
Mali	635		20
Madagascar	370	55	
Mozambique	500	1,000	100
Tanzania	300	95	15
MIDEAST AND NORTH AFRICA			
Algeria	8,500	170	250
Iraq	8,000	2,200	160
Libya	2,300	3,000	
North Yemen	475		5
South Yemen	2,500	800	325
Syria	4,000	5	210
ASIA			
Afghanistan	87,000	100	
India	1,550		

WER PROJECTION



the Soviet Union and its East European satellites. The Soviet need for and use of force as a tool of domestic control, combined with the historic Russian policy of security through territorial aggrandizement, have given it the impetus to attempt to transform conflicts, tensions and resentments into concrete political gains. While the Soviets no longer wholly subscribe to Lenin's dictum that the advance of socialism "...is impossible without a violent revolution...and the destruction of the apparatus of state power...," they do believe that military force is the major propellant of change in international affairs. They see growing Soviet military strength as providing a favorable backdrop for the conduct of their dual-track foreign policy: the maintenance of traditional diplomatic and economic ties on the one hand, while promoting subversion and revolution in the same states on the other.

Trends in the Soviet military force buildup over the past 15 years have resulted in a number of improvements allowing for the increased use of military power to support foreign policy goals. Primary among these have been the development of an effective Navy with global capability and the expansion of strategic airlift capability. Soviet military leaders have long recognized the political significance of these improvements, and in the early 1970s began making authoritative statements about the utility of Soviet Armed Forces beyond the borders of the USSR.

Soviet adventurism has been buttressed by the USSR's belief that the correlation of forces has shifted in Moscow's favor. Soviet leaders continue to refute any inconsistency between detente with the West and their growing support of revolutionary activism and insurgencies in the Third World. They believe that comprehensive aid to progressive forces is a moral requirement rather than interference by an external power. Article 28 of the 1977 Soviet Constitution specifically commits the Soviet Union to support wars of "national liberation."

To the Soviets, power projection does not involve the episodic military reaction to regional or world crises. Rather, it is a continuously applied means of foreign policy activity. Besides military forces, the Soviets project power and influence through the employment of a mixture of less visible, integrated elements including the KGB, diplomats and traditional state-to-state activities, military advisers and aid, treaties and legal ties, support for terrorists and pro-Soviet guerrilla groups, economic aid, cultural, media, and educational diplomacy, and the use of what the Soviets call active measures such as propaganda, blackmail and forgery. The coordinated use of these tools allows Moscow to develop an "infrastructure of influence" in a target country and to react rapidly to changing situations by applying the appropriate instruments, allowing the penetration of areas that may be beyond the immediate reach of Soviet military forces.

In their projection of power the Soviets include the pursuit of specific military objectives, for example, the acquisition of overflight clearances and access to facilities abroad to support the military operations of Soviet and friendly forces and to expedite the air- and sea-lift of military equipment to Third World clients and insurgent forces. Overseas facilities ease the logistic problems of operating naval forces and aircraft at great distances from the Soviet homeland.

A broader, basic Soviet objective is the termination of Western and Chinese influence in the developing countries, and the concomitant expansion of the USSR's own political, military, and economic power and influence. The Soviets seek to gain strategic footholds in a number of client states and to promote the accession to power of radical, anti-Western regimes. In this process and in order to demonstrate that they retain their leadership of the world communist movement, the Soviets portray themselves as the ideological vanguard of the world's "national-liberation" movements.

The Soviets are also seeking to develop a viable oil and strategic minerals denial strategy, either through physical disruption, market manipulation, or domination of producing or neighboring states. Soviet statements clearly reflect the USSR's understanding of the extent to which the United States and Western Europe currently depend on imports of vital strategic materials from the developing regions. By undermining Western ties with the oil and raw materials producers and exacerbating differences in the Western Alliance over policies toward these regions, the Soviets seek to erode both the economic health and political cohesion of the West.

The planning and control of foreign policy is the exclusive domain of the central organs of the Communist Party—the Politburo and the Central Committee. The orchestration of all foreign operations, including the broad range of subversive activities, is the responsibility of the Central Committee's International Department. The International Department's most important task is to advise on and implement the export of revolution. It maintains contact with scores of communist and radical parties and groups, allocating funds, providing training, and devising takeover strategies. The International Department plans, coordinates and oversees the work of various Soviet party, state and military organs involved in official activities abroad, as well as the KGB, front organizations, friendship societies, insurgent groups, and other elements engaged in illegal, subversive, and clandestine operations. Possession of a highly centralized, interlocking, authoritarian decision-making and decision-implementing apparatus facilitates the USSR's coordination of various tools and tactics toward basic goals and creates a synergistic effect difficult for Western democracies to match.

INSTRUMENTS OF EXPANSION

Arms Sales: Since their origin in 1955 with a $250 million arms agreement with Egypt, the Soviet Union's military sales have grown into a multi-billion dollar annual program. These sales form the basis for Soviet penetration of a number of Third World countries, providing Moscow access to nations and regions where it previously had little or no influence. In the last 25 years, the Soviets have granted over $50 billion in military assistance to 54 noncommunist nations, with 85 percent going to nine nations in the Middle East and along the Indian Ocean littoral. This is supplemented by $4.3 billion in arms sales by Warsaw Pact allies.

The Soviet Union's willingness to provide arms to almost any customer at low prices has been an important inducement to newly independent former colonies eager to improve their military capabilities. The favorable financial terms, eight-to-ten-year deferred payments at two percent interest, coupled with free training and maintenance services as well as fast delivery schedules, prove to be important enticements in gaining early contracts.

The Soviets have been adept at exploiting anticolonial nationalistic sentiments to the detriment of Western nations. The Arab-Israeli conflict, Indo-Pakistani tensions, as well as "liberation" movements in sub-Saharan Africa and Central America have all been utilized by the USSR to gain access and a subsequent political role in regional affairs. Major Soviet resupply efforts following the 1967 and 1973 Mideast wars contributed to the rapid growth in Soviet arms sales.

Provision of more complex equipment at higher prices resulted in a nearly threefold increase in Soviet arms sales in the period 1974-1980 in contrast to the previous 20 years. Four major Arab client states accounted for over 70 percent of the $37 billion in arms aid during this period. Sales to India and Ethiopia accounted for another 15 percent. Recent exports include such advanced systems as the MiG-25 and MiG-23 fighters, the SA-6 and SA-9 missiles, the Mi-24/HIND attack helicopter, and the T-72 tank. Occasionally, these weapon systems have been exported to important clients before they have been provided to Warsaw Pact allies.

Military Advisers: The dispatch of Soviet advisers is a natural—and often required— complement to the provision of arms and equipment. In 1980, approximately 20,000 Soviet military personnel were stationed in 28 countries, where they play a central role in organizing training and penetrating client-armed forces. Heavy concentrations of advisers are found in those countries with large amounts of Soviet arms: Algeria, Libya, Angola, Ethiopia, Iraq, Syria and South Yemen. Important missions are often headed by one or more Soviet flag or general officers.

Since 1955, some 52,000 military personnel from the less-developed countries have been trained in the USSR and East Europe. Soviet advisers are able to cultivate pro-Soviet sentiments, influence local military policies and pinpoint promising candidates for further training and indoctrination in the USSR. The importance the Soviets attach to the missions and roles of military advisers is underscored by the fact that a Main Directorate of the General Staff centrally controls their operations.

Economic Aid: Selective economic aid often follows arms sales in Soviet efforts to increase its influence in the Third World. However, total Soviet economic aid is well below arms aid, amounting to only $18 billion to 67 countries in the last 25 years. The USSR has achieved a number of important benefits from its small economic assistance program, at a very small cost to the Soviet economy. By concentrating on a number of highly visible showcase projects such as the Aswan Dam in Egypt, the Bokaro Steel Mill in India and the Tigris-Euphrates Dam in Syria, the Soviets have gained maximum political benefits.

The economic aid program has also resulted in an expansion in Soviet trade with the nations of the Third World. In 1955 total Soviet trade with Third World nations was $260 million. By 1978 that figure had increased to $13.4 billion, or roughly 15 percent of the Soviet total. An added advantage of this trade was that much of it was conducted in hard currency, which earned the Soviets funds with which they could purchase needed Western technology. Additional hard currency earnings from the nearly 33,000 Soviet economic advisers worldwide have grown to over $100 million. Projects such as a gas pipeline in Afghanistan and an alumina plant in Turkey exported needed raw materials back into the Soviet economy, another benefit of the aid program.

The economic aid program has also enabled the Soviets to provide training for Third World nationals in the Soviet Union. These trainees have returned to their native countries and now make up a considerable portion of the total number of professional and skilled workers in these nations. Roughly 31,000 students, mostly from African and Middle Eastern nations, were being trained in the Soviet Union in 1979. The Soviets view their economic aid program as an important tool for expanding Soviet influence in the Third World.

Proxies: The use of proxy forces has significantly augmented Soviet power projection capabilities. The Soviets have drawn on the political, military, and economic dependence of such allies as Cuba and East Germany in order to promote anti-Western causes and extend the USSR's own influence. The dispatch of proxy military forces and advisers to contentious areas minimizes the USSR's risks and deflects charges of imperialism while also giving support to progressive forces in a regional conflict.

Since the large-scale introduction of Cuban troops into the Angolan civil war in 1975, Cuban units and military advisers have grown in numbers in sub-Saharan Africa and have also appeared in the Middle East. There are currently approximately 35,000 Cuban military personnel in nearly 20 countries – about 20 percent of Cuba's regular forces. In addition to Angola and Ethiopia, substantial numbers of Cubans are in Mozambique and South Yemen. Soviet-blessed or inspired Cuban activities in the Caribbean and Central America are on the upswing. Cuban roles abroad include military, economic, and intelligence and security operations.

Fidel Castro has declared that it is Cuba's duty to help liberate the Third World from colonial, imperialist bonds, but Havana's capability to send military personnel overseas would be considerably reduced without massive Soviet support and sponsorship. Castro's repeated assertion of a natural alliance between the less-developed, nonaligned nations and the Soviet camp is a classic case of a proxy espousing the Soviet Union's propaganda.

Among the East Europeans, the East Germans are the most active proxies, specializing in the training of police and security cadres and intelligence operatives, the penetration of local governments, and the development of communist parties and front organizations. To a lesser extent, Hungarian, Czechoslovak and Bulgarian involvement has been noted in Africa and the Middle East.

The Soviets have also gained international advantages through other nations whose interests and aims often converge with the USSR's. Vietnam's military activities in Southeast Asia and its posture as a counterweight to China, periodic South Yemeni instigation of instability on the Arabian Peninsula, the involvement of North Korean pilots in a number of overseas countries with sensitive political situations and Libya's support for a variety of radical and terrorist causes all serve as examples.

Treaties: As a major component of its efforts to consolidate its ties with less-developed nations, the USSR has signed 12 treaties of friendship and cooperation since 1971, of which ten are still in force. While such pacts do not reflect the true nature of the Soviet support, it is no coincidence that the signatories have been the recipients of substantial Soviet military and economic assistance. The signing of these treaties occurred at different stages of Soviet relations with the countries in question. With Angola and Ethiopia, treaties were signed after the principal objectives of military operations were basically achieved and the Soviet presence was entrenched. Moscow signed pacts with New Delhi and Hanoi shortly before they launched invasions of Pakistan and Kampuchea, respectively. The ruling regimes in the Congo, Syria and Afghanistan signed partly because they needed a tangible sign of Soviet backing against domestic opponents.

The treaties vary slightly, containing similar calls for mutual cooperation, respect for sovereignty, and consultation on issues of common interest. While none are mutual defense pacts like those between the USSR and Eastern Europe, they all contain a general provision calling for military cooperation in the face of "threats" to peace and security. The USSR used that article in the treaty with Afghanistan as a legal pretext for its military intervention. A similar article in the Vietnam treaty provided the rationale for Moscow to support and supply its client during and after Vietnam's February 1979 war with China.

Subversion: Overt foreign programs are paralleled by covert action. The principal instrument for these activities is the KGB, although other Party and state organs are brought into play. The foreign operations of the KGB, which has a unique charter as the Party's action arm for the projection of Soviet power, are of two complementary types: destabilization and penetration. The destabilization of target countries is accomplished by the use of such techniques as economic disruption, labor strikes, sabotage, assassination, clandestine aid and -- in conjunction with the Main Intelligence Directorate (GRU) of the General Staff — the training of local groups for terrorism, guerrilla and "national liberation" struggles. The Soviet intelligence and security apparatus has available a number of special purpose forces for sensitive peacetime and wartime missions abroad. The Soviets have a tradition, dating from the Civil War period following the 1917 Revolution, of employing unconventional forces and methods. Special purpose units were used in the Soviet invasion of Czechoslovakia in 1968 to arrest the Czechoslovak leadership and secure key objectives in Prague, and they played an important role in the invasion of Afghanistan and the elimination of President Amin. Soviet unconventional warfare operations are supported by agent networks in the target country. The KGB and GRU recruit local nationals and place their own agents in vital areas of a nation's social and political structure, such as the military, ruling and opposition parties, the press, labor, key industries, local intelligence services and student groups. Local communist parties, Soviet friendship societies, front organizations and leftist trade unions are often heavily funded by the Soviets and assist the USSR in consolidating its influence. Some of these operatives actively engage in subversion, while others are "sleepers," prepared to act only in the event of war. Both types are trained to operate as political agitators, intelligence collectors and saboteurs.

KGB subversive operations abroad are facilitated by allied Warsaw Pact and Cuban intelligence and security services. These services, which were either created by the KGB and its predecessors or are guided by Soviet advisers, often capitalize on diplomatic access or other overt types of presence denied to the USSR, and serve as useful "middlemen" for the execution of Soviet strategy.

KGB activities are aided by the official Soviet presence in the target country – embassies, consulates, journalists, trade organizations and military and civilian advisers. These entities not only pursue their normal overt functions, but also provide useful cover mechanisms for Soviet intelligence personnel. A large percentage of Soviets with diplomatic accreditation are KGB or GRU intelligence officers, and KGB operatives are present in every visiting political, economic, and cultural delegation.

Propaganda and disinformation are essential tools serving Soviet international objectives. The Soviet Union's application of overt propaganda and covert action techniques has been vividly demonstrated by its continuing attempts to prevent the deployment of US neutron warheads and to impede the modernization of NATO's theater nuclear forces.

Forces for Power Projection: The Soviets of late have been more aggressive in their use of military forces to project their power and influence. These activities have ranged from sizable Soviet and Cuban presence, including on-site participation by the current Chief of Soviet Ground Forces, in Ethiopia during the war with Somalia, to the invasion of Afghanistan by Soviet troops in 1979.

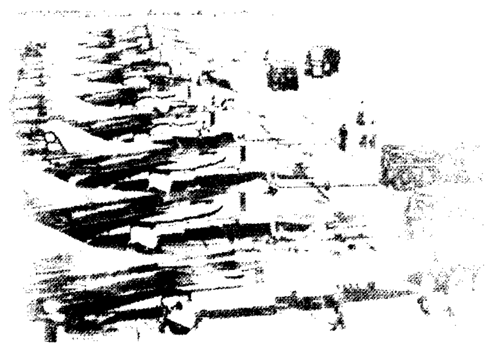
In 1974 the late Minister of Defense Marshal Grechko wrote:

> "The historic function of the Soviet Armed Forces is not restricted merely to their defending our motherland and the other socialist countries. In its foreign policy activity the Soviet state actively and purposely opposes the export of counterrevolution and the policy of oppression, supports the national liberation struggle, and resolutely resists imperialist aggression in whatever distant region of our planet it may appear. The party and the Soviet government rely on the country's economic and defense might in fulfilling these tasks....
>
> The development of the external functions of the socialist armies is a natural process. It will continue."

Grechko's statement is an echo of a similar theme expressed in 1969 by Marshal Sokolovskiy in *Soviet Military Strategy.*

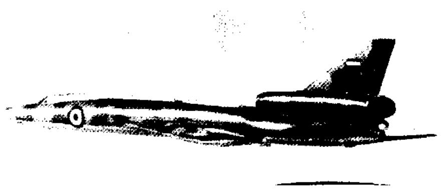
> "We consider it our duty to support the sacred struggle of oppressed peoples and their just wars of liberation against imperialism. This duty the Soviet Union discharges consistently and steadily by helping the peoples in their struggle with imperialism not only ideologically and politically but materially as well. The USSR will render, when it is necessary, military support as well to people subject to imperialist aggression."

Airborne and Special Purpose Units: Because of their mobility, the Soviet Union's seven airborne divisions are particularly well-suited for the rapid introduction of combat forces into a foreign country. The Soviets threatened such action in the Middle East wars of 1967 and 1973, and in 1979 airborne units were the spearhead elements of the move into Afghanistan. Airborne divisions remain at a high state of readiness. While lightly equipped and not suitable for operations against a well armed adversary, the combat elements of an airborne division, delivered rapidly to a distant region by Military Transport Aviation and Aeroflot aircraft could overwhelm the indigenous forces of a number of less developed countries, at least in the initial stages of an assault.



MiG-23/FLOGGERs in Cuba

The speed with which Moscow can deploy an airborne force depends on a number of factors: the distance to be flown, the level and type of expected opposition, the granting of overflight and staging/refueling rights, and the availability of logistic support. While Soviet long distance airlift capabilities continue to lag behind those of the United States, the Soviets could move, under optimum conditions, major elements of an airborne division to a country such as Syria in three-to-five days. Utilizing its substantial geographic advantages, however, the USSR could attack vital regions such as Iran and the Persian Gulf with massive ground and air forces staging directly from the Soviet homeland and secured contiguous areas. The only constraint



Libyan Tu-22/BLINDER Supersonic Bomber

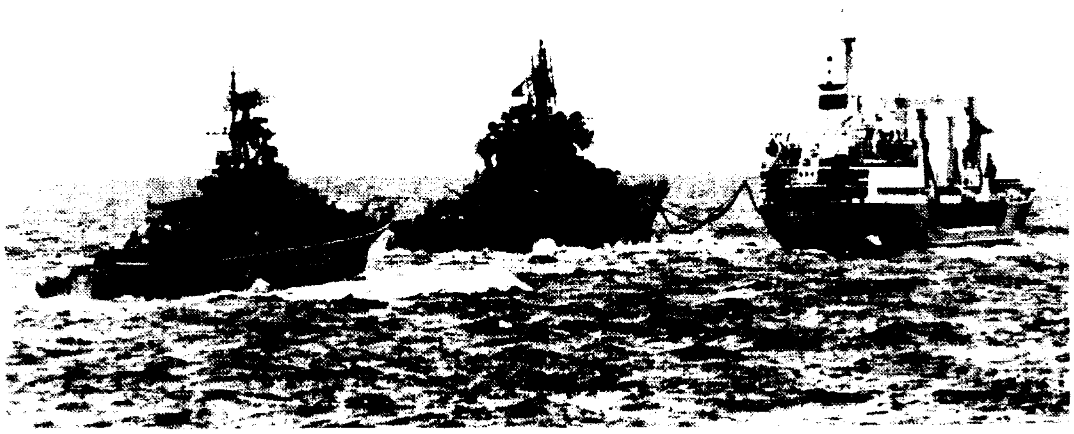
to the overt application of Soviet military forces in a number of less-developed nations — assuming the lack of success of more indirect means of penetration and takeover — is the USSR's assessment of the Western response.

The Soviet Navy: The Soviet Navy has proven to be the most effective force thus far in projecting power beyond the USSR's borders. Admiral of the Fleet Gorshkov has written:

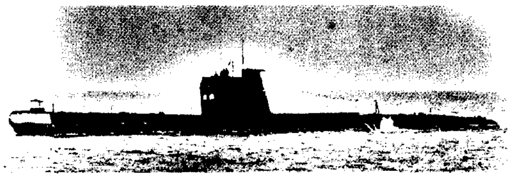
"The Soviet Navy is an instrument of a peace-loving policy and the friendship of peoples, a policy of suppressing the aggressive aspirations of imperialism, deterring military ventures and resolutely counteracting threats to the security of the peoples on the part of imperialist powers.

"With the appearance of the Soviet Navy on the ocean expanses, the Soviet Union has been given new, wider potentialities for using the fleet in peacetime to support the country's state interests. And these potentialities are being successfully realized."

Since 1966 there has been a dramatic increase in Soviet port visits focused on the Mediterranean, the Indian Ocean and the coast of West Africa. Since 1967, the Soviets have established a number of forward naval deployments which provide the nucleus for augmentation during periods of tension. The Mediterranean and, most recently, the Indian Ocean squadron in 1980, have both been reinforced to counter Western navies during times of crises. These deployment patterns demonstrate the Soviets' capability rapidly to assert their interests in



A KRESTA II-Class Guided Missile Cruiser and KRIVAK II-Class Missile Frigate replenish from a Soviet oiler on the high seas.



Libyan FOXTROT-Class Attack Submarine

regions far from the Soviet Union's borders.

The USSR operates the largest fishing fleet in the world, with nearly 4,000 oceangoing ships. This fleet provides various types of support to Soviet naval units, including modest logistics aid and intelligence reports on Western naval units. The Soviets have also exported a substantial amount of fishing equipment and technology to Third World nations and entered into a number of agreements with 18 nations to help them develop their own fishing industries.

The Soviet merchant fleet has also grown considerably in the past decade, more than keeping pace with major Western shipping firms. Soviet market calls at Third World ports have increased by 60 percent in the past decade. In addition to its important economic activities, the merchant marine has also been used to ship Soviet arms to client states on a routine basis and during times of crisis. The addition of 40 roll-on/roll-off ships, which can unload cargo via large ramps, has increased the capability of the Soviet Union to deliver military cargo such as tanks to ports without sophisticated cargo handling facilities. In a contingency these ships could be used to support Soviet amphibious operations.

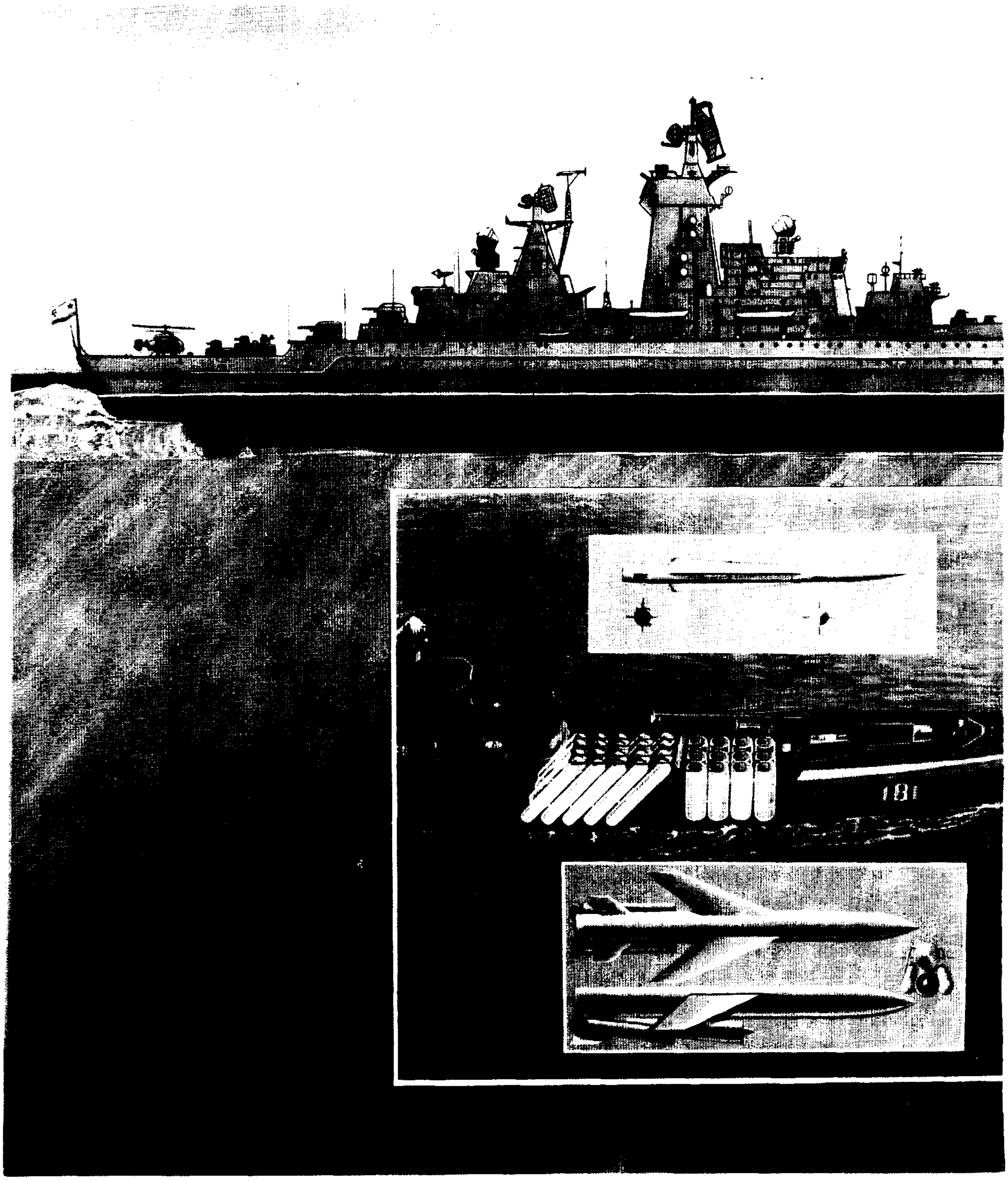
The merchant fleet also provides logistic support to Soviet naval units on a regular basis, particularly to units that are deployed to distant regions. Merchant ships possess an important advantage in that they can obtain water, fuel or food in ports which might be denied to warships or auxiliaries, thus giving the Soviets an additional degree of flexibility in support of their forces.

The Soviet Navy views access to support facilities and protected anchorages as an important adjunct to their operations in distant areas. Currently, the Soviets have access to such facilities in South Yemen, Ethiopia, Vietnam and Cuba and have recently made their first naval port call to Libya.

Access to foreign naval and air facilities has improved Soviet capabilities to monitor and counter Western naval units in the Atlantic and Indian Oceans and in the South China Sea. Soviet naval and antisubmarine warfare aircraft routinely deploy to nations offering such facilities to conduct surveillance and training missions. Access to air facilities in South Yemen and Ethiopia has been particularly useful for the Soviets in gathering intelligence on US naval units in the Indian Ocean and has improved their ability to conduct strike operations in this region. The operation of these aircraft from client state facilities gives a further visible presence to Soviet military power and influence in the region.

Distinct from enhancing the USSR's military capabilities, access to facilities also has important political utility. Political considerations certainly played an important part in Moscow's shift from supporting Somalia to aiding Ethiopia in 1977. Use of such facilities provides the Soviets with a presence in the region which they can then exploit to serve their interests. A recent example was the transit of the Soviet aircraft carrier MINSK far into the Gulf of Thailand, a not very subtle attempt to pressure Thailand to accept the Vietnamese invasion of Kampuchea. The USSR will continue to use the power projection capabilities of its military forces as well as other tactics to support Soviet political-military objectives and those of USSR client states.

VIII THE CHALLENGE

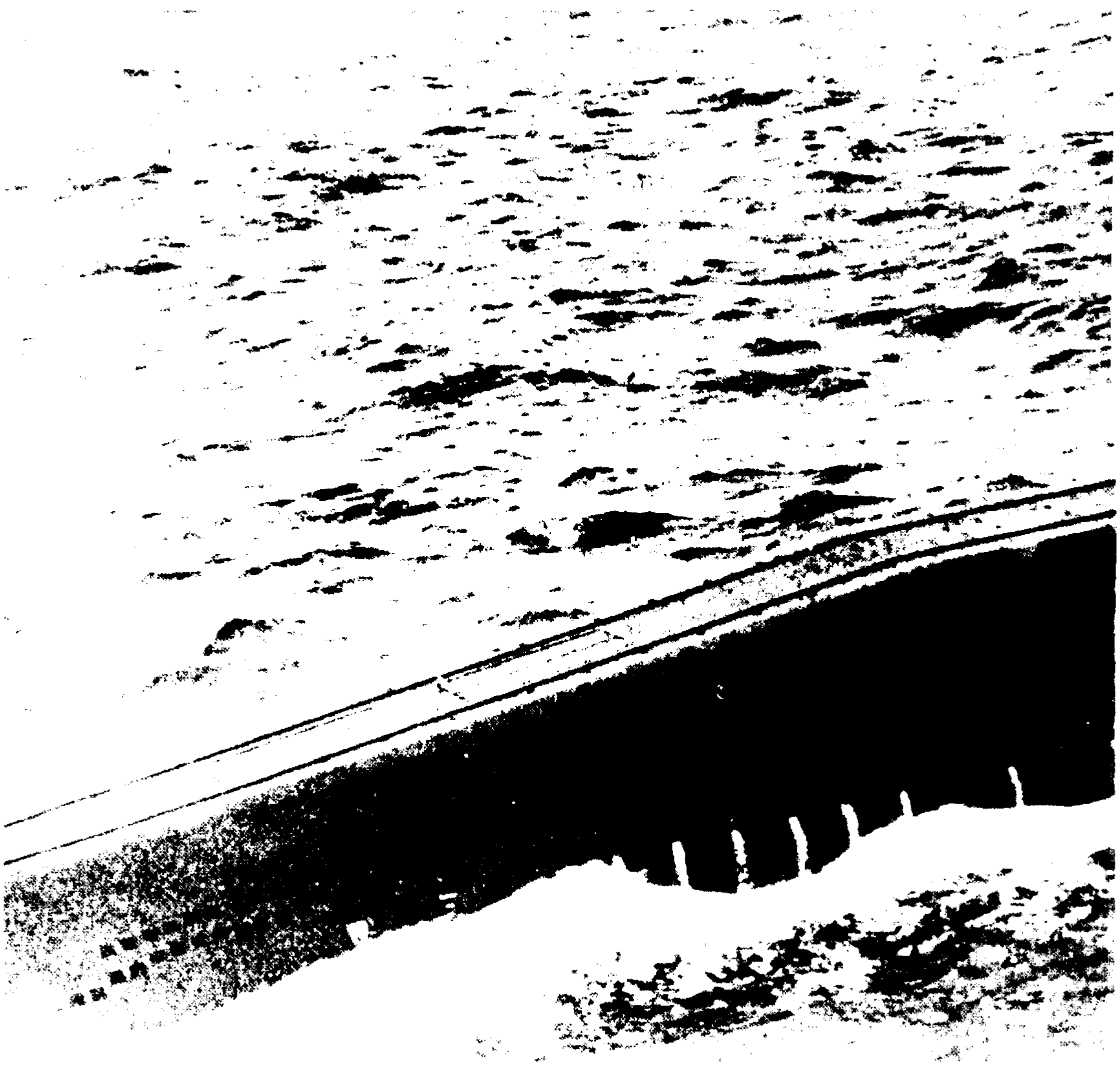


The Soviets begin the 1980s with strategic nuclear, theater nuclear and conventional armed forces and supporting elements that in both absolute and relative terms are substantially more capable than they were at the beginning of the 1970s.

The Soviet leadership, the key members of which have shepherded these forces for over 20 years, places great stock both in the international political influence and in the reality of military power that the forces underwrite in concert with other less visible means in the struggle with the West. In developing and deploying their strategic nuclear forces, the Soviets have subscribed neither to Western notions of strategic sufficiency nor to the concept of assured destruction. Instead, while they believe that nuclear war and its debilitating results must be avoided, they see the development of superior capabilities wedded to a strategy designed to achieve military victory and a dominant postwar position as the only rational approach to nuclear forces. The Soviet Union now exceeds the United States in the number of strategic nuclear vehicles. Soviet SS-20 theater nuclear forces are being deployed in increasing numbers against Western Europe and Asia.

As a result of a decade of missile force modernization and expansion, the Soviets have improved the reliability, payload and accuracy of their ballistic missiles allowing an improved hard-target kill capability. All evidence indicates that the Soviets will continue their steady effort to improve the quality of their land-based

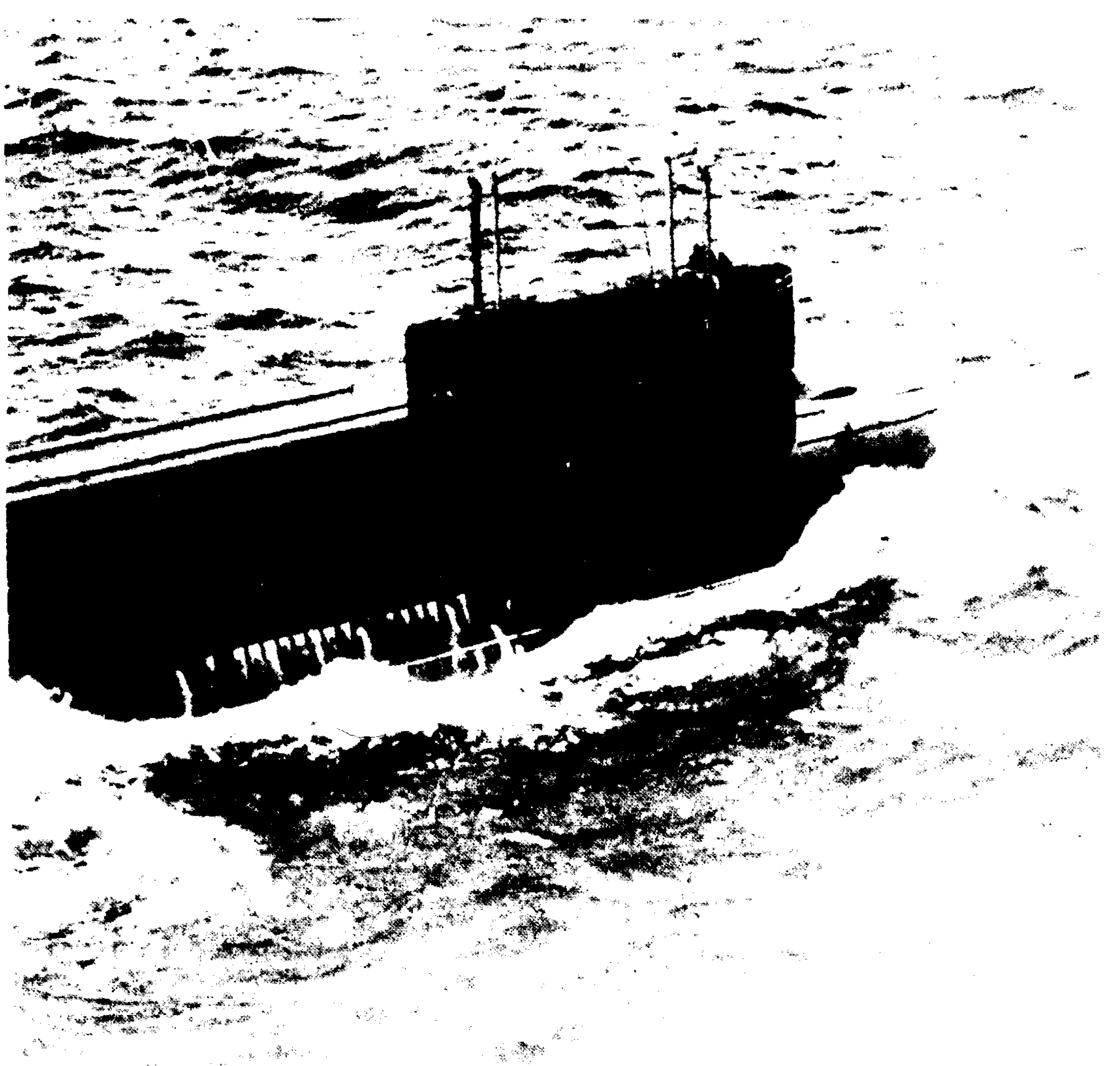
KIROV, the USSR's first nuclear-powered surface warship, symbolizes the increasing strength of the Soviet Armed Forces and the increasing projection of USSR military power around the world. The KIROV carries 20 new-type long-range cruise missiles, and includes 12 vertical launch tubes for surface-to-air missiles in her heavy suit of weaponry.



The ballistic missiles of the DELTA III-Class SSBNs have a range of 7,500 kilometers.

missile force, striving for higher reliability, faster response time and greater accuracy.

In the last ten years, the Soviets have introduced four classes of new ballistic missile submarines. The long-range missiles of the DELTA-Class SSBNs can reach the United States while still in Soviet ports. The Soviets now have over 30 operational DELTAs. The SS-N-18, a missile installed in the DELTA III, has a range of about 7,500 kilometers and a post-



boost vehicle capable of dispensing MIRVs. The TYPHOON SSBN, twice the size of the DELTA, has been launched and will be deployed in the 1980s.

Throughout the past decade, the Soviets have maintained their heavy-bomber strike force and have developed and deployed the BACKFIRE bomber capable of both theater and intercontinental delivery. Evidence would indicate that the Soviets are in the process of developing a new long-range bomber, and possibly a strategic cruise missile carrier.

In the tactical ballistic missile field the 40-mile FROG and 500-mile SCALEBOARD short-range ballistic missile systems were replaced by or augmented with the newly developed SS-21 and SS-22 SRBM systems. Soviet tactical missile systems of the next decade can be expected to incorporate new technology to make them lighter and more mobile, more accurate and more responsive.

During the 1970s, new generations of Soviet infantry weapons — assault rifles, antitank grenade launchers and multiple rocket launchers with greater range and lethality — were introduced. Heavily armed helicopter gunships now number in the thousands.

Over the past ten years the Soviets have expanded their ground forces to more than 180 divisions. The Soviets today have superior ground forces in Europe. They have a substantial advantage both in number of troops and quantity of armored assault vehicles.

During the 1970s, the Soviets fielded two new tanks, the T-64 and T-72. Both exhibit significant improvements in firepower and protection which place them in a family apart from previous Soviets tanks. The Soviets are now experimentally producing a T-80 tank which will likely fire improved ammunition and incorporate futher improved armor to meet the West's deployment of the 120-mm gun.

A new generation of Soviet antitank guided missiles was fielded in the mid-1970s to replace the manual systems of the early 1960s. The new antitank weapons are semiautomatic, more accurate, tube-launched systems with greater range and increased armor penetration. The design objectives of future Soviet antitank missiles will emphasize improved armor penetration and fully automatic guidance and control.

In the early 1970s, different Soviet self-propelled artillery pieces began to appear — first the 152-mm self-propelled howitzer, then the 122-mm self-propelled howitzer which, like the BMP all-purpose infantry fighting vehicle, is amphibious and has a nuclear, biological and chemical air filtration system. The 152-mm and 122-mm self-propelled artillery have ranges of over 17 kilometers and 15 kilometers respectively. The trend of at least six Soviet artillery, mortar and cannons developed in the past decade appear to be continuing in the 1980s. Continued application of the self-propelled design principle to different cannon and rocket artillery can be expected in the 1980s. Additionally, ammunition improvements will be made to achieve ever greater range and lethality.

Over the past ten years, the Soviets introduced two new versions of the VICTOR nuclear-powered attack submarine (SSN) and developed the ALFA high-technology attack submarine. In 1980, the Soviets produced OSCAR, the prototype of a new class of nuclear-powered cruise missile attack submarine (SSGN) which is about twice the size of any previous SSGN. High Soviet priority is being devoted to antisubmarine sensor technology applicable against ballistic missile submarines.

The Soviets have produced two new classes of air-capable ships, the MOSKVA-Class helicopter cruiser and KIEV-Class VSTOL carrier. The Soviets are expected to have a new larger class of carrier, capable of handling conventional aircraft in the late 1980s.

Four new classes of Soviet surface combatants are entering service. The most capable is the large, multipurpose KIROV-Class nuclear-powered guided missile carrier. These new surface combatant classes are to be outfitted with new suits of advanced weapon systems. The Soviets are expected to continue to develop major naval combatants during the 1980s.

New Soviet ships and supporting auxiliaries reflect a thrust toward power projection capabilities at increasingly long ranges. The Soviet fleet is working constantly to introduce modern and sophisticated sensors and weapon systems, especially defensive missiles and cruise missiles.

Over the past decade the West's air superiority over Europe has been eroded by the capable aircraft being deployed in Soviet Air Defense Forces and Frontal Aviation. In the past decade, the Soviets introduced three types of new aircraft designed for the ground attack mission.

During the 1980s, the Soviets are expected to give high priority to the development of new fighter aircraft for both the ground attack and air superiority missions. They are expected to deploy precision guided munitions which use laser or antiradiation homing guidance. Improved navigation systems as well as more accurate bombing/navigation radars are expected to improve the all-weather capability of Soviet ground-attack aircraft.

During the past decade, the Soviets deployed a wide variety of new all-weather air defense intercept fighters. New Soviet interceptors, such as the Modified FOXBAT will be the Soviets' first look-down/shoot-down fighter. Armed with four new AA-X-9 missiles and possibly four shorter-range infrared air-to-air missiles, it will be able to detect, track and engage targets at very low altitudes. The Soviets are expected to deploy a new airborne warning and control system (AWACS) to replace the Tu-126/MOSS, beginning in the mid-1980s.

The trend of improving surface-to-air missile air defense coverage is expected to continue through the modification of existing systems and the introduction of new systems, enhanced by improved command and control procedures to avoid destroying friendly aircraft while rendering the airspace over the ground forces virtually impenetrable to enemy aircraft.

The Soviet Union is intensely engaged in a program designed to achieve a dominant role in space. Soviet space projects have matured into well-integrated systems contributing further to the Soviet military effort.

The Soviet Union's research and development priorities and continued expansion of military industrial production capabilities are keyed to supporting continuing military growth and modernization. In turn, the combined capabilities of the Soviet Ground Forces, Strategic Rocket Forces, Air Forces, Air Defense Forces and Navy are keyed to assisting the projection of Soviet power abroad and the spreading and solidifying of the Soviet Union's political, economic and military influence around the world. This is the challenge we face.

DEPARTMENT OF DEFENSE

UNITED STATES OF AMERICA