

Report of Secretary of Defense ... to the Congress on the FY ... budget, FY ... authorization request, and FY ... defense programs

United States.

[Washington, D.C.?] : Dept. of Defense : 1979-1990.

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DEPARTMENT OF DEFENSE ANNUAL REPORT FISCAL YEAR 1980

HAROLD BROWN
SECRETARY OF DEFENSE

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SECRET

REPORT OF SECRETARY OF DEFENSE

HAROLD BROWN

TO THE CONGRESS

ON THE

**FY 1980 BUDGET, FY 1981 AUTHORIZATION REQUEST
AND FY 1980-1984 DEFENSE PROGRAMS**

JANUARY 25, 1979

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402

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SECTION I

THE CURRENT BALANCE

The direct numerical comparison of the forces engaging in conflict or available in the event of war is almost universal. It is a factor always carefully reckoned with by the various military authorities; it is discussed ad nauseam in the Press. Yet such direct counting of forces is in itself a tacit acceptance of the applicability of mathematical principles, but confined to a special case. To accept without reserve the mere "counting of pieces" as of value, and to deny the more extended application of mathematical theory, is as illogical and unintelligent as to accept broadly and indiscriminately the balance and the weighing-machine as instruments of precision, but to decline to permit in the latter case any allowance for the known inequality of leverage.

Frederick William Lanchester
Aircraft in Warfare, 1916

CHAPTER 1

OVERVIEW

Mr. Chairman and Members of the Committee:

Thank you for this opportunity to testify in support of the defense budget for FY 1980. To put that budget in perspective, let me briefly review our original request for FY 1979 and the supplemental request for FY 1979 that we are presenting along with our request for FY 1980.

In our original submission for FY 1979, a year ago, we requested Total Obligational Authority (TOA) of \$125.9 billion and planned outlays of \$115.1 billion (excluding \$100 million for civil defense). These two totals reflected the President's determination to begin the process of countering the long-term Soviet military buildup and fulfill his pledge to NATO to increase U.S. defense spending by three percent a year in real terms.

As a result of subsequent actions by both the legislative and executive branches, the FY 1979 defense program so far enacted, for all practical purposes, can now be considered as requiring \$123.7 billion in TOA and entailing \$111.3 billion in outlays. These totals allow for pay raises of \$1.8 billion and other fact-of-life increases of about \$400 million.

Because it is essential that we continue with our long-range defense program, and (in the process) increase outlays by about three percent a year in real terms, we are now submitting a readiness and modernization supplemental for FY 1979. It amounts to \$2.2 billion in TOA and will generate \$595 million in outlays. If approved, it will bring the FY 1979 defense budget authority back essentially to its originally planned level. Equally important, it will permit us to:

- expand our initiatives as regards strategic nuclear forces. In particular, we will accelerate our efforts on a new land-based missile and its mobile basing.
- provide for the FY 1979 U.S. share of NATO AWACS and add to our capabilities for reinforcing NATO;
- add several needed surface combatants to our navy shipbuilding program;
- improve further the overall readiness of our forces.

It is against this background that the President has proposed a defense budget for FY 1980 involving \$135.5 billion in TOA, \$135 billion in Budget Authority, and \$122.7 billion in outlays (excluding \$100 million for civil defense, which will now be a part of the Federal Emergency Management Agency). These totals will permit another significant increment of real growth in our defense program after the effects of inflation have been taken into account.

The planned outlays in the FY 1980 budget are estimated to result in a 3.1 percent real increase over the total spending now estimated for FY 1979 (including all supplementals). The TOA, which reflects the long-term effect of the budget, is 1.7 percent more (after correcting for the effects of inflation) than the FY 1979 TOA (including that enacted by the Congress and the supplementals we are requesting). Outlays for FY 1980 will constitute about 4.9 percent of expected gross national product (GNP) for FY 1980, 23 percent of planned federal spending, and 15 percent of estimated public spending -- federal, state, and local.

The Long-Range Defense Projection shows an average real increase in outlays of three percent, and in TOA of around 2.5 percent a year through FY 1984. At that time, defense TOA is projected to have reached \$178 billion in then-year dollars, and \$151 billion measured in FY 1980 prices. With normal economic growth over the next five years, defense outlays will be about 4.7 percent of GNP by FY 1984. By contrast, defense outlays were 12 percent of GNP in FY 1954, and 8.2 percent in FY 1964. I should stress, however, that our defense forecasts are simply the result of projections based on: the future implications of current defense programs and plans; estimates of future inflation; and future patterns of obligational authority-outlay ratios. They are neither predictions of the future nor irrevocable commitments to the projections.

Our requests for FY 1980 are somewhat lower than we had projected a year ago, and our Long-Range Defense Projection runs slightly below the path forecast in the FY 1979 budget. Nonetheless, the body of my annual report and this summary will persuade you, I trust, that our recommendations for FY 1980 are on the right track.

I. THE INTERNATIONAL SITUATION AND DEFENSE

As you well know, there is no such thing as a fixed defense requirement. It is even very rare that we must reach a particular and precise defense goal at a specified date in the future. Whether we are referring to FY 1980 or FY 1984, we are not planning capabilities that will either surely succeed or surely fail in their tasks. We are planning capabilities that have a greater or lesser probability of doing what we may later decide to ask of them. We are also considering the effects, on the margin, of increases or decreases in our allocation of resources to defense.

Certainly no other claim can compete successfully for resources with what we really need for defense. Yet where the marginal returns from increased resources are relatively small, and those resources could make a greater contribution elsewhere (or where not expending them at all in the federal sector could have a good effect overall on our economic situation), the case for restraint in defense spending can be powerful, and even persuasive. For some programs, such a situation exists today. Nonetheless, a number of factors in the international situation make the case for a strong defense compelling. In these circumstances, it seems justified in FY 1980 to continue the real increase in defense outlays.

National security has always been comprised of a number of factors and has always required a number of strengths, non-military as well as military. The United States, fortunately, is by most measures the strongest nation in the world. No other country -- certainly not the Soviet Union -- can compete with us in economic power, political stability and cohesion, technological capability, national will, or appeal as to way of life and international policies. It is abundantly clear, however, that we cannot maintain and increase those strengths if we allow ourselves to become excessively dependent on energy sources from one part of the world -- and a volatile part at that -- or if we fall victims to recurrent bouts of inflation and recession. Military strength cannot help to cure these kinds of diseases. At the same time, wide swings in the size of our defense program, or inefficient execution of that program, could increase our economic vulnerabilities without producing countervailing benefits in the military balance.

Fortunately, we have paced our defense programs with prudence. While we face a number of international problems, we are in a position to cope with them free of panic, crash programs, and wasted resources.

A. The Soviet Union

Among our international problems, the Soviet Union undoubtedly looms as the largest adversary player. In most segments of the competition, the Soviets do not have a comparative advantage over the United States. Only in military matters has their system been able to rival ours. But the fact that they have put so much of their effort into the production of military power is most troubling. Their failure to compete successfully in other arenas can increase the incentive for the Soviets to use their military power to increase their influence and to gain political advantage, whether by direct application of military force, through intimidation, through proxies, or through arms transfers.

Such a motivation is one possible explanation for the Soviet military buildup. Another is bureaucratic inertia, or rather -- in a less benign formulation -- the strength of the military-industrial

establishment in the Soviet political structure and resource allocation process. A third may be Soviet fear, however misplaced it might be, of their neighbors -- especially NATO and the People's Republic of China.

Undoubtedly all of these, and perhaps others, are important motives. My own concern and belief is that, to whatever extent Soviet capabilities in the 1980s might be engendered by the motives that seem less alarming to us, these capabilities could then be used -- or their use threatened in dangerous and destabilizing ways -- unless the United States and its allies either reach agreements with the Soviets that limit the Soviet buildup to safer levels, or adequately offset that buildup with our own defense programs, or both.

Although Soviet intentions cannot be surely assessed, there can be no doubt about the steady increase in the Soviet defense effort each year for more than 15 years. As the Soviet gross national product has grown, so has the defense effort. Its annual rate of increase has averaged more than three percent measured by what it would cost the United States to duplicate that effort in our economy, and between four and five percent measured in rubles. By how much the present effort now exceeds our own is less certain. It could be by as much as 45 percent, or as little as 25 percent.

It should be noted that this is a very crude comparison. What really count in military terms are the forces that are deployed and what each side needs to achieve its objectives. Moreover, the substantial contributions of allies must be added to the balance. It must also be remembered that our naval power projection and sea lane protection costs have little counterpart in Soviet military spending, just as the Soviet strategic air defense costs have little in ours. Even so, relative defense spending, annual or cumulative, is the best single crude measure of relative military capabilities, if efficiencies are not too different. And in military matters, Soviet and U.S. efficiencies are not as far apart as in the civilian sector.

As is to be expected, the Soviet armed forces have improved substantially with these steadily increasing outlays. Since 1964, when Leonid Brezhnev succeeded Nikita Khrushchev as leader of the Soviet Union, the Soviet defense establishment has expanded by about a million men. More than 1,000 ICBM launchers and more than 900 modern submarine-launched ballistic missile (SLBM) tubes have been added to the Soviet strategic nuclear forces. And the modernization of these forces continues at a steady pace. What we describe as the Soviet peripheral attack forces are also being upgraded with the deployment of the mobile, MIRVed SS-20 intermediate-range ballistic missile (IRBM) and the BACKFIRE bomber. Ground and tactical air forces have been increased and provided with modern equipment. The Soviet ground forces have grown by about 25 divisions; more than 1,000 fighter aircraft have been added to Soviet

Frontal Aviation. Moreover, the quality of their equipment is much closer to ours than it was 10 years ago; in some cases it is even better than our own. Many of the elements of a serious open-ocean navy are also in place, including two light aircraft carriers with long-range anti-ship missiles, VTOL aircraft, and helicopters. What could be a nuclear-powered cruiser displacing well over 20,000 tons is now fitting out in the Baltic. The Soviets have also demonstrated an operational, evolving, but still limited anti-satellite capability.

As these Soviet forces have evolved, Soviet military doctrine -- especially for the general purpose forces, where these factors have the clearest application -- has continued to emphasize the virtues of cover, deception, and surprise. Heavy concentrations of force combined with dense firepower, shock, and rapid offensive movement, are emphasized. Equally sobering, the Group of Soviet Forces in Germany (GSFG) -- 20 divisions in all -- is acquiring a much higher degree of combat readiness and tactical mobility than in the past. Capability appears to be catching up with doctrine.

As far as we can judge, these developments have been substantially insensitive to changes in the magnitude of U.S. and allied programs for more than a decade. As our defense budgets have risen, the Soviets have increased their defense budget. As our defense budgets have gone down, their defense budgets have increased again. As U.S. forces in Western Europe declined during the latter part of the 1960s, Soviet deployments in Eastern Europe expanded. As U.S. theater nuclear forces stabilized, Soviet peripheral attack and theater nuclear forces increased. As the U.S. navy went down in numbers, the Soviet navy went up.

Soviet military programs, of course, are the result of many factors, and at least some of their buildup can be attributed to considerations other than the direct Soviet-American competition. It is worth noting, moreover, that the growth in their defense effort has correlated quite closely with the overall growth in the Soviet economy, while the U.S. military effort has steadily shrunk as a fraction of our economy. Be that as it may, nowhere is there any historical evidence that if we are restrained, the Soviets will reciprocate -- except where specific and verifiable arms control agreements are negotiated.

The Soviets, in sum, have made steady and impressive military strides during the last 15 years. We cannot afford to underestimate them. Neither can we afford to exaggerate where they stand in relation to the United States and its allies. Despite the reduced baseline defense budgets of the early 1970s -- budgets that, in real terms, fell 15 percent below where they were before the intensification of the war in Vietnam -- we have not stopped improving our own defense capabilities.

And despite their increased efforts, the Soviets have not achieved anything that resembles overwhelming military power. We have had our problems, but so have the Soviets.

Looking back at the trends in Soviet defense spending -- not just since 1964, but since the death of Stalin -- we can see a number of years when the U.S. defense effort was larger than the Soviet effort. During those years, Khrushchev was apparently engaged in a Russian version of what we then called the New Look, with a good deal of emphasis on nuclear capabilities and their efficiency (some of it pure bluff, as we found out later), and with reductions in supposedly obsolete ground forces and their equipment. A substantial portion of subsequent Soviet investments must surely have gone toward recovering from those years; by now, they almost certainly have recovered. In recent years, the investment portion of the Soviet defense effort has normally been substantially more than that of the United States; counting the efforts of our allies, the ratio has been closer.

It is also worth remembering that the Soviets have had to develop their defense capabilities out of a civil economy much less efficient than ours. It has been noted with considerable -- and not unjustified -- dismay that Soviet expenditures in military research and development may be 75 percent larger than ours (measured in U.S. prices). And this when we are supposed to be -- and are -- depending on our technology to overcome their numbers. But while concern is certainly in order -- and this is an area where we must increase our investment -- the figures do not quite tell the whole story. The Soviet civil sector does not produce much technology that can be transferred to the defense sector. Ours does (though to a lesser extent than used to be the case). For that reason alone, the Soviets have to invest more resources in this area than we do to achieve a comparable military result. Some of our results they cannot duplicate at all.

The Soviets have an equally unenviable problem in deciding how to allocate the forces they acquire. They surely cannot give all their allies in the Warsaw Pact very high marks for loyalty, though the Soviet forces in Eastern Europe aimed at NATO are so large that an insignificant fraction of them need be allocated to overseeing those allies. They find it necessary, in addition, to station as much as 25 percent of their ground and tactical air power on their border with the People's Republic of China (PRC).

The Soviets must also struggle to overcome acute constraints of geography and climate. Admittedly, we have long lines of communication to our friends and allies in Europe, the Middle East, and Asia, and must worry much more than the Soviets about sea control. But the Soviets have analogous concerns. Their forces in the Far East dangle at the end of a long and tenuous logistical system. Their conventional

naval forces, to exercise any influence on events, must travel significant distances from their ports, and they must transit narrow waters which could be disputed by opposing forces. The Soviets have more naval ships than we do (if our allies are omitted). But that capability, whatever its effectiveness, is divided into four separate fleets, with two of them based in the Baltic and Black Seas where we and our allies could bottle them up. Even to acquire some elbow-room for their fleets based on Murmansk and Vladivostok, the Soviets would have to control the Barents Sea and the Sea of Japan.

In sum, the growth in the Soviet military effort is potentially very dangerous to us. Though not as effective as it may appear at first glance, it is not something we can ignore or wave away, especially since the upward trend in Soviet defense spending shows every sign of continuing. It is an effort that we must keep in perspective, not to imitate it, but to prevent it from becoming a major Soviet advantage.

We seek, and expect, to cooperate with the Soviets on the resolution of a number of issues in the future, as we have managed to do in the past. But we also have to recognize that the Soviets persist in seeing their relationship with us as one of competitive coexistence, with the emphasis on competition where military matters are concerned. Such an outlook leaves us with no choice but to keep up our guard.

B. Goals

It remains the case that our wellbeing as a nation and our character as a people depend on peace, justice, and order as well as military strength. To survive, to prosper, to preserve our traditions, we need political as well as military allies, trading partners, access to raw materials and supplies of energy; we need freedom of the seas and international airspace as well as space, and a pluralistic environment conducive to national and individual freedom. Striving for military predominance and stimulating arms races are not how we satisfy these needs or uphold our position in the world. We must make every effort to settle the disputes and remove the tensions that could lead to conflict and wider international disorder. We should lose no opportunity to increase international stability and reduce military competition through equitable and verifiable arms control agreements.

C. SALT

Progress is being made on both counts. We are nearing the completion of a SALT II agreement that will contribute to the security of the United States and its allies. In fact, no agreement failing that test should or would be signed by the United States. We want arms control, but must insist on arms control agreements that specify equivalent overall military capabilities, strategic and general purpose.

An adequate and properly balanced defense budget is a necessary way to maintain our security, but arms control agreements are an additional and complementary way of dealing with Soviet military efforts. Admittedly, the interests of the Soviet Union and the United States diverge in a number of respects. The Soviets appreciate, however, that as long as we remain strong -- as we will -- direct conflict with the United States and its friends could quickly lead to disaster.

Both sides understand that restraint is especially important where nuclear forces are concerned. Nuclear weapons represent the only external threat to the survival of the United States and the Soviet Union. Nuclear weapons could destroy in a matter of hours what each nation has built over the course of centuries. Both the United States and the Soviet Union already deploy nuclear forces fully capable of destruction of this magnitude. It is unlikely, moreover, that the situation will change as a result of further buildups by either side, despite the lure of exotic technologies and damage-limiting strategies that entail massive programs of active and passive defense -- provided always that timely and effective responses (which exist) are undertaken by the other side.

We and our adversaries need to constrain the competition. This is not to say that agreements to limit strategic or other armaments can solve all problems, remove all grounds for fear and suspicion, or bring all military competition to a complete halt. But carefully drawn SALT agreements -- backed by sound verification measures -- can accomplish a great deal. They can make the achievement of destabilizing future advantage even more difficult than is already the case, while allowing current vulnerabilities to be removed. They can make the force structures of the future more predictable, and reduce the need to design against a wide range of uncertainty in strategic force planning. They can contribute to a healthier political environment -- an environment less freighted with suspicion and more conducive to further restraint.

The SALT agreement that is nearing completion will permit us to maintain the nuclear balance at lower levels with fewer launchers than the Soviets could deploy without any agreement. Avoiding the necessity to match such growth in Soviet forces will leave U.S. (and Soviet) resources free for other needs and avoid the political costs of unrestrained competition.

The agreement will not depend on trusting the Russians. It will be adequately verifiable by our national technical means, including photo-reconnaissance satellites.

The agreement will provide for prompt negotiations to open the road to further reductions and limits in the future. SALT will also create a basis for us to improve relations with the USSR generally, if the Soviets are prepared to cooperate.

SALT will not solve all our problems. Even with SALT, we will need to -- and we will be permitted to -- expand our strategic nuclear efforts. But SALT will mean greater stability and predictability in the strategic challenges we face.

I do not see any immediate prospect of ending the military competition between the Soviet Union and the United States. Nonetheless, I believe we can maintain the modest momentum of arms control. SALT II will contribute to the momentum.

D. International Developments

We also have non-military programs that provide a basis for optimism about the international situation. President Carter's energy and anti-inflation programs should make a major U.S. contribution to increased international monetary and economic stability, reduced protectionist pressures, and the further liberalization of international trade and investment. The Camp David accords and the subsequent negotiations between Egypt and Israel still hold out the prospect of moving the entire Middle East toward more stable and permanent peace. The Panama Canal treaties -- whose approval by Congress was a major act of statesmanship -- have removed a longstanding grievance and a source of future disruption in Latin America without any sacrifice of basic U.S. interests. The normalization of relations between the PRC and the United States increases the stability of East Asia -- and indeed of other areas as well. The removal of the Turkish arms embargo improves the chances of greater cooperation for deterrence and peace on the sensitive southern flank of NATO. In Europe, the reaffirmation of democracy and the increased determination of our allies to strengthen their defenses mean that the opportunities for outside troublemaking and intervention will decline. Even in Africa, where conflicts continue -- often aggravated by the Soviet Union and Cuba -- we may yet see the emergence of settlements that encourage majority rule and full democracy in Namibia and Rhodesia.

We should not be deluded into excessive optimism by recent events. Other developments -- in Iran, the Horn of Africa, and Afghanistan, to take a disparate set of examples -- should remind us that instability, uncertainty, and shifts in the balance are widespread. But internationally, these are times for hope, not for despair, times of opportunity as well as challenge.

II. THE MILITARY BALANCE

I believe we can maintain the balance of military power with defense budgets of the order we are now requesting and projecting. It should be understood, however, that no informed judgment on this matter can rest on simple, static comparisons, whether that judgment calls for a more or less rapid rise (or even a decrease) in U.S. efforts.

I am, of course, aware that we estimate the Soviets as having more than 45,000 tanks, while the United States has only 10,000. But while we recognize the Soviet armor threat, that raw comparison does not convince me of Soviet military superiority in Central Europe, or make it advisable for the United States to buy another 35,000 tanks. Our allies happen to have tanks as well; and anti-tank launchers -- of which we and our allies have already acquired more than 17,000 (and more than 40,000 anti-tank missiles) -- are also relevant to stopping tanks. It is most unlikely, in any event, that the Soviets could bring all those tanks to bear against the United States and its allies. Simply counting up tanks, or ships, or aircraft, or missiles is not a sufficient basis for determining the relative effectiveness of two opposing forces. Successful defense and deterrence, which are what we seek, depend on a great deal more than the results of these static comparisons.

If U.S. forces are relevant to some specific contingencies and can defeat a specific enemy, presumably they contribute to credible deterrence, no matter what static comparisons might show about particular force elements. Accordingly, we must examine a variety of hypothetical conflicts, understand how our capabilities would perform in a range of circumstances, and determine what factors are crucial to their performance. Our strategic forces, for example, are smaller in number and lighter in throw-weight than their Soviet counterparts. However, if they are so deployed that an enemy cannot eliminate many of them in a first strike, if they have the reliabilities, accuracies, and nuclear warheads and yields necessary to destroy the targets we have assigned to them, and if the command and communications system to assure their delivery on target is maintained, they may be quite sufficient for our purposes, and the military balance quite stable, even if the indiscriminate static comparisons indicate certain asymmetries favorable to the USSR.

There are, admittedly, particular occasions when avoidance of asymmetries comes close to being an end in itself. In general, equality of legal rights is the basis of SALT and MBFR. But equal numbers and a satisfactory military balance are not necessarily the same thing. Equal aggregates in U.S. and Soviet strategic offensive forces, and common ceilings on the forces of NATO and the Warsaw Pact in Central Europe, have merit -- but for another reason. Since the Soviets have insisted on equality as the basis for arms control agreements, we must insist on equal aggregates and common ceilings as the principal ways of measuring and symbolizing that equality.

But to be driven in our force planning by perceptions of the military balance based on static indicators, and to seek (or grant) equality in every measure across the board, is to ensure the misuse of U.S. and allied resources. We are not interested in symmetry with the Soviet

Union, at least not from the standpoint of defense. Nor are we interested in having the capability to defeat the Soviets on a sand-table in a void. We are completely committed, however, to engineering their defeat wherever they attempt to challenge our interests.

A. Strategic Concepts

The range of possible challenges is obviously very large. The United States has a wide variety of interests that are reflected in, but not totally defined by, our treaty commitments. Since these interests and commitments are located around the world, there is some small probability that a number of more or less simultaneous attacks could be launched on areas we consider vital. But the military capabilities of the Soviet Union and its satellites are far from unlimited. The Soviets cannot be powerful everywhere at once, any more than we can. Nevertheless, we need to have a basic strategic concept that recognizes our interests and our resource constraints, and defines the magnitude of the capabilities we should have available. Otherwise, we could find ourselves planning to set up defenses all around the globe.

It has become a truism of modern defense policy that we must maintain military capabilities at three basic levels: strategic nuclear, theater nuclear, and non-nuclear. The degree of dependence we should place on each is much less obvious. This administration, like its four predecessors, has decided that while it cannot and will not neglect our nuclear forces, it will keep the barrier to nuclear warfare -- primarily in the form of our non-nuclear capabilities -- at a high level. The Soviets and their associates, if considering an attack on the United States, its forces and interests, or its allies and friends, must recognize the possibility that we would make a nuclear response. But we reject nuclear escalation as the sole policy on which to base the planning or use of our forces. We will continue to avoid relying on nuclear weapons unless their employment is clearly in our interest -- and in the interest of our allies -- or is forced on us by the nuclear actions of others. In sum, we and our allies must have adequate conventional forces. That should be understood by everyone, and it should be understood as the continuing policy of the United States.

1. Strategic Forces

In designing our strategic nuclear forces, what we need for deterrence and stability cannot be dictated by any simple comparison with the forces of the Soviet Union, even though we must take those forces into account in our planning. Our needs -- whatever the needs of the Soviets -- are met if our retaliatory forces can satisfy the following conditions: survive in adequate numbers and types after a well-executed surprise attack on them by the Soviets; penetrate Soviet

defenses and destroy a comprehensive set of targets in the USSR with whatever timing, and degree of deliberation and control, proves desirable; if necessary, inflict high levels of damage on Soviet society -- particularly those elements the Soviet leadership values -- regardless of the measures the Soviets might take to limit the damage; and retain a reserve capability in the wake of a controlled exchange.

2. Theater Nuclear Forces

In designing our theater nuclear forces, we must provide a credible deterrent to theater nuclear and overwhelming conventional attack. As part of the NATO TRIAD, these forces must be capable of carrying out serious military tasks within NATO's strategy of flexible response if deterrence fails, with the aim of controlling escalation. They must be diversified, so that they can pose the risk of a nuclear response to any level of Warsaw Pact aggression; and they must be sufficiently survivable so that they do not invite a Soviet preemptive attack.

3. General Purpose Forces

In designing our general purpose forces, we now recognize that a major two-theater attack on our allies and forces has become increasingly implausible as a result of the deepening Sino-Soviet split and the improvement in our relations with the PRC. What must therefore concern us first and foremost is the heavy concentration of Soviet forces in Eastern Europe and the western military districts of the USSR. Those forces represent a direct and growing threat to the security of Western Europe, on both the central front and the flanks. They also define the magnitude of the largest and most serious non-nuclear contingency that could confront us in the foreseeable future.

To stress Europe is not to rule out a major contingency elsewhere. Nor is it to preclude a smaller attack by Soviet or other forces in such sensitive areas as the Middle East and the Persian Gulf, or the Korean peninsula. For planning purposes, however, it seems appropriate to base the size of our general purpose combat forces on the assumption of having to halt more or less simultaneously one major attack (with Europe as the most plausible and demanding locale for its occurrence), and one lesser attack elsewhere.

4. The Role of Allies

I should stress that our strategic concept is not quite as demanding as the previous sentences may make it appear. We plan our strategic forces on the assumption that the United States by itself will have the continuing responsibility for deterring Soviet nuclear attacks. Wherever appropriate, however, we plan our general purpose forces on the

assumption that, in most contingencies, they will be fighting alongside allied forces rather than going it alone. For example, we count on our NATO allies to provide substantially larger ground and air forces for initial defense of the NATO area than we contribute ourselves.

The collective defense will require a much greater dovetailing of allied defense programs and closer compatibility among allied forces than has been the case to date. Indeed, it is for this reason that I have made alliance cooperation one of the keystones of our defense policy, and have laid such stress on rationalization, standardization, and interoperability.

5. Other Capabilities

Equally important, we rely on more than our active-duty forces to shore up our continental air defenses and the non-nuclear deterrent. Should a conventional conflict be of significant scope and duration, we would turn to our National Guard and Reserve forces, and to our mobilization base (including a draft), for the expansion and reinforcement of our initial combat capabilities. We should not assume that our more costly (and more ready) active-duty forces would carry all the burden of fighting to the end of these hypothetical conflicts without the addition of other resources. At the same time, we should recognize that, at present, our reserve forces (with the exception of the air reserve units) are substantially less well-manned than they need to be in order to fulfill these responsibilities. Not only are Army reserve units under strength; we are encountering increasingly serious and disturbing shortfalls in the manpower replacement pool known as the Individual Ready Reserve.

If we are to be effective and efficient in fulfilling our strategic concept for the general purpose forces, we must have sufficient capabilities to permit the following: the forward deployment of forces in key areas overseas such as Western Europe and Northeast Asia, along with the retention of a powerful central reserve in the continental United States (CONUS); the rapid movement of substantial forces to threatened theaters by airlift and sealift; the maintenance of forward defenses for at least as long as an enemy could sustain his attack; the buttressing of these defenses with reinforcements and sustaining supplies; and uninterrupted access by air and sea to the theaters of conflict.

If our strategic nuclear and general purpose forces can satisfy all these varied conditions, they should be sufficient to counter an enemy's capabilities, not on some abstract plane, but where and how it counts from the standpoint of U.S. security. It follows that whether, in fact, U.S. and allied forces have that kind of capability is the issue that must concern us -- not whether the Soviet navy has more coastal patrol boats than ours, whether our navy weighs more than theirs, or whether we have more anti-tank weapons and helicopters than they.

B. Tests of Effectiveness

We have developed a number of tests as the basis for resolving this issue of capability. The first of them analyzes the performance of the strategic nuclear forces by means of a hypothetical exchange following a Soviet surprise attack. This, admittedly is a special case, and it may only approximate potential reality. But because it is severe, it results in a conservative assessment of our strategic forces and their effectiveness.

The results of this test strongly suggest that even a surprise Soviet attack would have no prospect of disarming us -- any more than we could expect to disarm the Soviets if we struck first. Not only would our surviving forces be very large; they could now readily penetrate Soviet defenses and destroy thousands of military and non-military targets either immediately or -- if we choose -- over an extended period of time. The specific results would, of course, depend on what kind of a response we deemed appropriate and how we decided to allocate our warheads. But this general outcome would not be in doubt.

It is quite conceivable, at some point in the early to mid-1980s, that the Soviets -- with a first strike -- could eliminate the bulk of our ICBM silos and still retain a large number of warheads in reserve. However, they would have to consider the possibility of our having launched the MINUTEMAN force before their ICBMs arrived, even though we have not made "launch under the attack" a matter of policy for a very good reason: such a decision would be a very grave and difficult one to make, even if our sensors gave clear and unequivocal indications of such an attack.

Even without MINUTEMAN, our surviving second-strike capability would remain large -- in the thousands of warheads. Not only could we still destroy a wide range of targets; we could also cause catastrophic damage to the Soviet urban-industrial base. It is difficult, in the circumstances, to see how the Soviets could expect to gain any meaningful advantage from starting such a mortal exchange.

I make these points in order to correct any notion that MINUTEMAN vulnerability by itself is catastrophic. However, the capability of the Soviets to threaten the prompt destruction of a major portion of our retaliatory force, while that segment of their own force is not subject to such a threat, will be a serious matter in military terms and, if it were to continue for an extended period, would be a major political problem. I therefore believe we must act to correct it as we modernize our strategic forces.

The most demanding test for our general purpose forces would come from an attack in Europe by the Warsaw Pact. In principle, such an attack could begin as a bolt from the blue by some or all of the Pact deployed forces. The more serious likelihood is that any attack without prior mobilization would be preceded by a period of international tension, some degree of Pact preparation, and at least a few days of warning for NATO. Obviously, the greater the preparation, the larger and better organized the attack would be. But NATO would also benefit -- from increased warning and the arrival of U.S. and allied reinforcements.

There is, I realize, a widespread opinion that the Warsaw Pact could rapidly overcome NATO's defenses regardless of when or how the attack started. That opinion overlooks a number of facts. NATO has already bought and paid for most of the basic capabilities necessary to conduct a successful forward defense. It is also true, however, that the Pact has expanded and significantly upgraded its forces in Eastern Europe during the past decade. NATO has responded to these improvements with a number of short-term programs that have been substantially implemented, and with the Long-Term Defense Program (LTDP) which identifies many specific actions required to enhance NATO's collective defense capability into the 1990's and beyond.

The result of these actions by the two sides is an ambiguous situation. Even today, the Soviets cannot be confident of a rapid conventional victory in Europe. But NATO, despite its basic strengths, cannot have as much confidence in its non-nuclear deterrent as I consider prudent.

Despite this current uncertainty, the planned increases in the U.S. contribution to NATO should, along with contemplated allied increases, be sufficient to deter Soviet attack despite the increase in Soviet capabilities. Moreover, we can make that contribution without weakening the combat force structure needed to deal with a simultaneous but lesser contingency. I am equally confident that our naval forces are still quite capable of maintaining the sea lines of communication to Europe, protecting other essential routes, and supporting allied forces -- whether in the Western Pacific or on the flanks of NATO. What is more, our naval forces will be gaining in capability during the next five years. We are in the process of resolving a number of difficult issues about the exact future direction the Navy should take in its shipbuilding program and in exploiting its capabilities. None of those issues, I should add, have brought into question the importance of the Navy, or the desirability of having it perform its traditional missions within the guidelines of national strategy.

III. VULNERABILITIES AND NEEDS

I do not want to give the impression, in offering these brief assessments, that we are complacent about U.S. and allied capabilities. We should not be, and we are not. We have a number of vulnerabilities -- some obvious, and others not so obvious -- that we need to repair. I see no grounds for believing that today -- and I emphasize today -- we have fallen into an unacceptable military posture. Even so, I must stress that the gap between U.S. and Soviet defense expenditures cannot continue to expand without a dangerous tilt in the relevant balances of power and a weakening of the overall U.S. deterrent. The United States is certainly more ingenious and efficient than the Soviet Union. It is not so much more ingenious and efficient that it can, without increased budgets, make up for increasing disparities between the two defense efforts.

We can already foresee some of the difficulties that will arise for us during the next five years or so, unless we take timely counter-measures. Our strategic nuclear forces already are armed with more than 9,000 warheads, and that number will increase with the addition of TRIDENT ballistic missiles and air-launched cruise missiles. Nevertheless, our strategic submarines and bombers are aging; the ICBM leg of the TRIAD is becoming vulnerable; and our command-control system is not as capable as it should be of handling a controlled nuclear response. More warheads, throw-weight, or megatonnage will not by themselves improve our strategic posture, regardless of what they do to the static comparisons between the United States and the Soviet Union. Repairing the TRIAD -- and improving our command, control and communications capabilities -- will.

The diversity, redundancy, and flexibility embodied in the TRIAD have been crucial to our continued confidence in the U.S. strategic deterrent. Even though we have known for some time that the survivability of the ICBM force would erode, we have not been driven into panicky and costly crash programs, largely because the other two legs of the TRIAD have been and remain in good working order. But that does not mean we should abandon the features contained in the ICBM force or make its survival a function of launch-on-warning. If we are to remain fully confident in the future, when a different leg of the TRIAD might become vulnerable, we must restore the ability of our ICBMs to ride out an attack, if that should prove necessary. Accordingly, we intend to proceed with full-scale development of a new ICBM, have explored a number of ICBM basing options, and have ensured that the SALT II agreement will leave open the alternative of deploying a mobile ICBM after the expiration of the interim protocol period, which is well before the program could reach deployment status in any event.

We have accepted the need to keep our strategic forces combat-ready and on a high alert, even though the probability of their ever being used is very low. We have been less willing (or at any rate less

successful) in giving these forces the capabilities and controls necessary to operate them with deliberation and discrimination. In many ways, such reluctance is understandable. It is difficult to visualize any nuclear exchange that could be kept from escalating to all-out attacks on cities. Even so, we would be mistaken to leave a potential enemy with the knowledge that the President, if faced with an attack that avoided cities, would have only the options of an all-out response or no response at all. The temptation to exploit this loophole in our deterrent would be minute, but it could be real in desperate circumstances. However probable rapid escalation might be, we should retain the capability to respond to a limited nuclear attack in a controlled and deliberate way -- even though we might not be given credit for it in the standard static comparisons.

We and our NATO allies are presently examining our theater nuclear posture in the overall review inaugurated by the 1977 NATO Summit. We have major programs underway for the possible modernization of both battlefield and longer-range tactical nuclear forces, including the new 8-inch and 155mm nuclear artillery rounds, the new and more flexible LANCE warhead, the dual-capable F-16, the PERSHING II missile, and various cruise missiles. These programs will enable us to make whatever modernization we and our allies eventually conclude might be required.

When it comes to the general purpose forces, we take for granted the need for control, deliberation, and discrimination. But we seem to shy away from combat-readiness, high alerts, and rapid response, even though our position and responsibilities in the world have changed dramatically, and non-nuclear conflict tends to recur.

Because defense budgets are always limited to some level, and because we still act as though we believe we will have the time to mobilize, long-lead weapons and equipment often receive the highest spending priorities. Combat readiness, alertness, and mobility for the general purpose forces sometimes fall much lower on the list. As a consequence, many of our weapons are out of commission for lack of spare parts. Even though we may not yet have learned to operate some of our weapons to their full potential, we make plans to replace them. We log fewer flying hours and steaming days than a fully professional force requires.

Admittedly these are deficiencies that, for the most part, we can make up more rapidly than shortages of modern equipment. And the Services are understandably concerned that if they give up force structure they may well, as a result of subsequent economies by the Secretary of Defense or the Congress, later be left with smaller and less modern forces that are just as unready and unsustainable as before. But in assessing the balance between readiness and force size, it is no longer clear that we would be allowed enough time to repair even our most

glaring defects in readiness. With ample warning, we and our allies in Central Europe should be able to achieve sufficient combat readiness to halt an attack by the Warsaw Pact. Looking ahead, though, there is a growing probability that the Pact could deploy for some kinds of attacks in less time than it would take NATO to ready its forces and move them into their defensive positions.

The lesson should be clear. New tanks, however powerful, are only as effective as the crews that man and maintain them. Battalions, however densely packed with firepower, are only as lethal as the ammunition they have to shoot. Divisions, however modern in equipment, are of little use if they have to wait for lift at their home bases while an attack progresses overseas.

We need and can have modern weapons and equipment. We need and can have them in sufficient quantity for our purposes. But unless we fund and pay more attention to training, materiel readiness, adequate stocks of combat consumables, and mobility, we could end up with the shadow rather than the substance of a full defense capability.

A strategy of readiness will not make the defense posture any cheaper. We will still have the investment and operating expenses required by the force structure as it exists today. We will have new programs to fund as well. Replacement of the MINUTEMAN force, though it excites the most attention, is only one (and not necessarily the most expensive) of the programs ahead of us in this category. We will have to give greater attention to materiel and personnel readiness in our general purpose forces.

As a result of the NATO Summits in May, 1977 and 1978, we have endorsed both a goal of three percent real annual increase in the defense outlays of the NATO countries, and an ambitious Long-Term Defense Program for the Alliance. We are already taking steps to preposition more equipment and stocks so as to reduce the deployment times of our reinforcements to NATO. We are also improving our long-range airlift and otherwise seeking to increase our worldwide mobility. To continue with these programs, we will need additional resources.

With the budget we propose and the expenditures we project, I believe that we can do whatever is truly necessary. Security, it is true, depends on more than our defense posture. Nonetheless, a strong defense posture remains crucial to our security. Our overall deterrent is not as weak as the pessimists would have us believe. It is not as strong as I would like it to be. To give it the necessary strength -- and our fellow citizens the necessary confidence in their safety -- balanced forces are what we need: nuclear and non-nuclear; ready as well as modern. To achieve the necessary balance, we must have a defense budget larger than last year's in real terms. The national security cannot be assured without it.

CHAPTER 2

THE DEFENSE BUDGET

The President has proposed, and I fully support, a defense budget for FY 1980 which entails \$135.5 billion in total obligational authority (TOA), \$135 billion in budget authority (BA), and \$122.7 billion in outlays. These totals are compared in Table 2-1 with the actual totals for FY 1978 and the estimated totals for FY 1979 (including a separate supplemental for FY 1979).

Table 2-1

Department of Defense - Military Functions
(\$ Billions)

<u>Current Dollars</u>	<u>FY 1978</u>	<u>FY 1979</u>	<u>FY 1980</u>
Total Obligational Authority (TOA)	116.5	125.7	135.5
Budget Authority (BA)	115.3	125.2	135.0
Outlays	103.0	111.9	122.7
<u>Constant FY 1980 Dollars</u>			
Total Obligational Authority (TOA)	131.8	133.2	135.5
Budget Authority (BA)	130.5	132.7	135.0
Outlays	117.4	119.1	122.7

The current Long-Range Projection shown in Table 2-2 is an estimate of future defense requirements; it is not a commitment to those totals, which must be reviewed each year. The current projection forecasts an average annual real increase in TOA (estimated in FY 1980 prices) of 2.5 percent, and in outlays of three percent. Pay and price increases, it should be noted, conform to the guidelines established in the President's anti-inflation program.

Table 2-2

	Fiscal Years (Billions of Dollars)						
	1978	1979	1980	1981	1982	1983	1984
<u>Total Obligational Authority</u>							
Current Dollars	116.5	125.7	135.5	145.7	155.7	166.8	177.7
FY 1980 Prices	131.8	133.2	135.5	138.4	141.5	145.9	150.5
<u>Outlays</u>							
Current Dollars	103.0	111.9	122.7	133.7	144.9	155.5	165.7
FY 1980 Prices	117.4	119.1	122.7	126.4	130.5	134.4	138.4
<u>Inflation Assumptions</u>							
For Outlays (in percent)	7.1	8.0	7.0	6.0	4.8	3.7	2.8

Defense outlays for FY 1980 will constitute approximately 4.9 percent of estimated gross national product (GNP). They will make up about 23 percent of total federal spending for FY 1980, and around 15 percent of total public spending (federal, state, and local). These percentages are shown for selected fiscal years in Table 2-3.

Table 2-3

Fiscal Year	Defense Outlays as a Percent of		
	GNP	Federal Outlays	Public Outlays
1964	8.2	41.8	27.9
1968	9.3	43.3	29.5
1977	5.2	23.7	15.7
1978	5.0	22.8	15.1
1979	4.9	22.7	14.8
1980	4.9	23.1	14.9

The defense budget for FY 1980 will permit the United States to maintain active-duty forces that include:

- 2,122 strategic delivery vehicles, consisting of 54 TITAN II ICBMs, 1,000 MINUTEMAN ICBMs, 656 SLBMs, 347 B-52s, and 66 FB-111As;
- 34 KC-135 tanker squadrons (with 521 aircraft);
- seven continental air defense squadrons (including one training squadron) with an inventory of 141 aircraft;
- 16 Army divisions, five separate Army brigades, and three Marine Corps divisions;
- approximately 460 major naval combatant, amphibious, and auxiliary vessels;
- 26 Air Force tactical fighter wings (with 2,599 aircraft), 12 Navy carrier air groups (with 1,111 aircraft), and three Marine Corps air wings (with 476 aircraft);
- 53 anti-submarine warfare squadrons (with 635 aircraft); and
- 17 squadrons of strategic airlift, with 75 C-5A and 311 C-141 aircraft, and 14 squadrons of tactical airlift, with 267 C-130 aircraft.

National Guard and Reserve forces will consist primarily of:

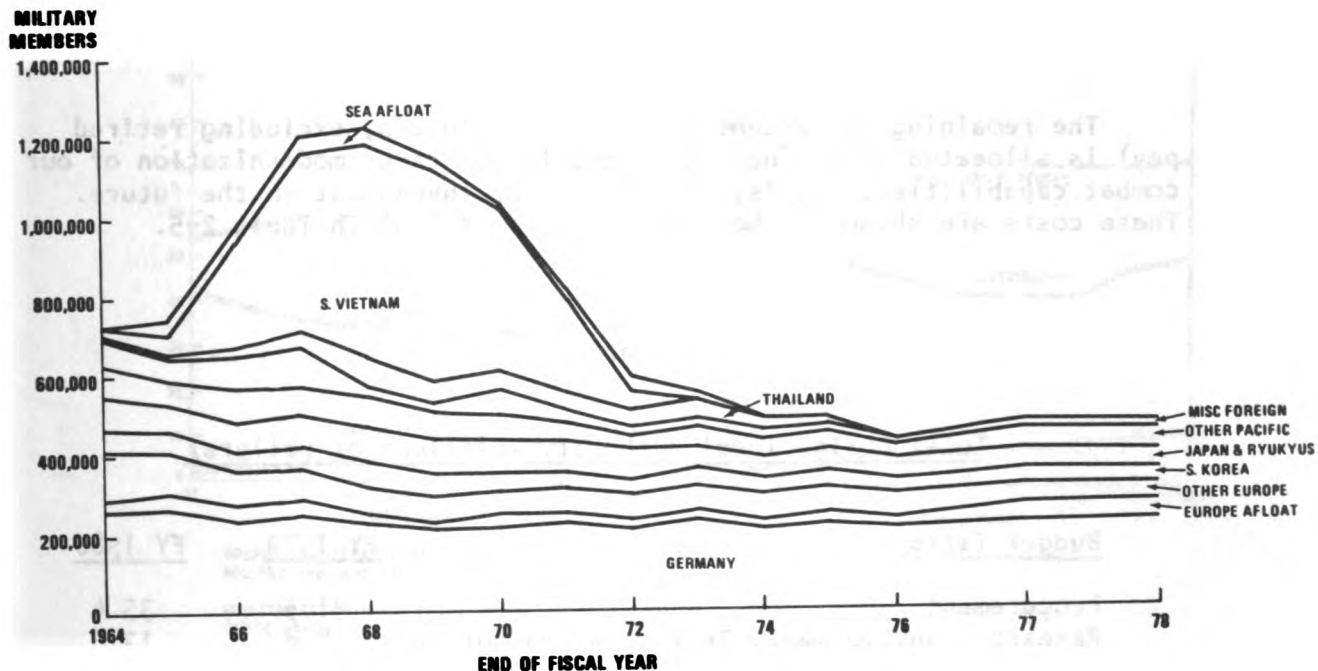
- 10 continental air defense squadrons (with 180 aircraft) and 16 KC-135 tanker squadrons (with 128 aircraft);
- eight Army National Guard divisions, 19 separate Reserve Component Army brigades, and one Marine Corps division;
- 44 naval combatant, amphibious, and auxiliary vessels;
- 39 Air Force fighter squadrons (with 889 aircraft); 10 Navy fighter squadrons (with 139 aircraft), 13 Navy anti-submarine warfare squadrons (with 138 aircraft), and one Marine Corps air wing (with 110 aircraft); and
- 29 C-130 tactical airlift squadrons (with 294 aircraft).

We estimate that the operation and maintenance of these forces will require about two million active-duty military, 785 thousand selected reserve military, and approximately 986 thousand civilian personnel. Of

these totals, roughly 472 thousand active-duty military and 115 thousand civilian personnel will be stationed overseas. The deployment of U.S. military personnel in foreign areas (ashore and afloat) since FY 1964 is shown in Chart 2-1.

Chart 2-1

US MILITARY PERSONNEL IN FOREIGN COUNTRIES



About 60 percent of the defense budget -- excluding retired pay, which is now nearly 10 percent of total defense costs -- will go to the operation and maintenance of the current forces. These costs are shown for FY 1979 and FY 1980 in Table 2-4.

Table 2-4

Total Obligational Authority (Billions of Dollars)

<u>Budget Title</u>	<u>FY 1979</u>	<u>FY 1980</u>
Military Personnel	28.7	30.3
Operation and Maintenance	38.1	40.9
Family Housing and Homeowners Assistance Program	<u>1.7</u>	<u>1.6</u>
TOTAL	68.5	72.8

The remaining 40 percent of the budget (again, excluding retired pay) is allocated to the near-term and longer-range modernization of our combat capabilities. It is, in effect, our investment in the future. These costs are shown for both FY 1979 and FY 1980 in Table 2-5.

Table 2-5

Total Obligational Authority (Billions of Dollars)

<u>Budget Title</u>	<u>FY 1979</u>	<u>FY 1980</u>
Procurement	31.5	35.4
Research, Development, Test, and Evaluation	12.8	13.6
Military Construction	<u>2.6</u>	<u>2.2</u>
TOTAL	46.9	51.2

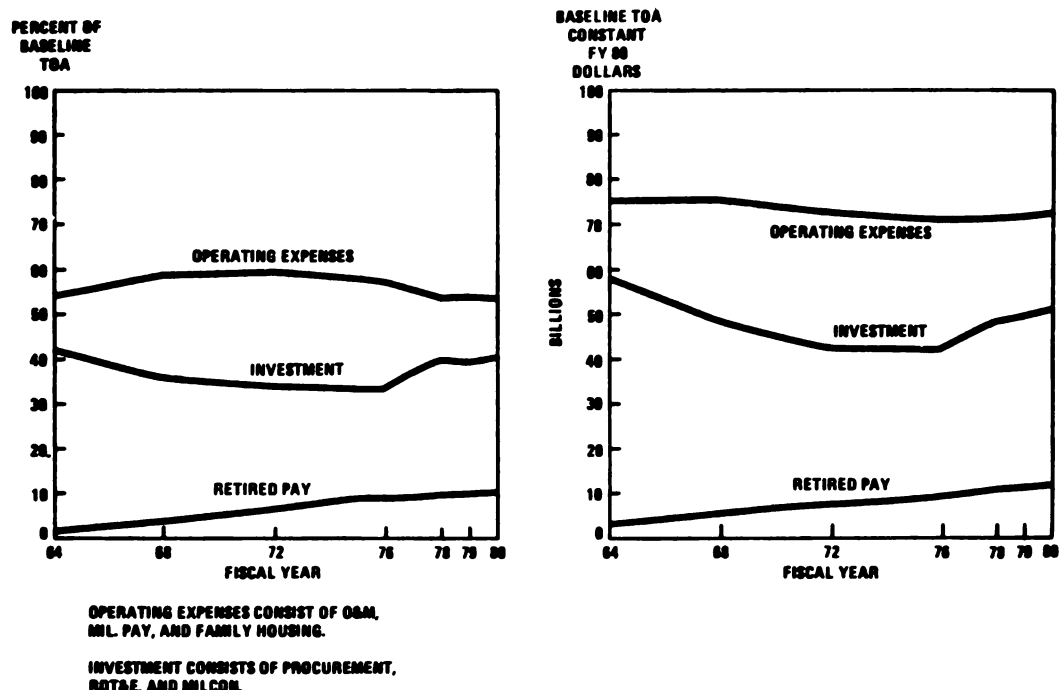
As these tables indicate, the investment accounts rise from 40.6 to 41.3 percent of the total budget (with retired pay excluded). This increase is important if we are to equip and modernize our forces in response to the great expansion of Soviet efforts in those areas.

The trends in the allocation of our baseline defense budget (defined here as TOA with the incremental costs of the war in Southeast Asia excluded) are shown in Chart 2-2. Operating expenses during these years

have remained relatively stable, in real terms. The reason is not that we have kept the funding up, but that we have brought our personnel requirements down. Military personnel in the baseline force have dropped by about 700,000 men. And only very recently have we begun to invest at close to the level that prevailed in the early 1960s. We are now living off those earlier investments.

Chart 2-2

ALLOCATION OF US DEFENSE SPENDING



At the same time that we are submitting the FY 1980 defense budget, we are requesting a supplemental appropriation of \$4.4 billion for FY 1979. This supplemental consists of:

Pay increases	\$1.8 billion
Other fact-of-life increases	0.4 billion
Program adjustments and additions	<u>2.2 billion</u>
for a total of	\$4.4 billion

During its last session, the Congress effectively reduced the defense budget to \$121.3 billion for FY 1979. This supplemental will bring the total defense appropriation for FY 1979 to \$125.7 billion, or just \$300 million short of the amount originally requested by the President a year ago.

The supplemental of \$1.8 billion for pay increases reflects the decision to increase military and classified civilian pay by 5.5 percent, effective October 1, 1978, and the expected Wage Board actions on blue-collar pay during the course of FY 1979. The other fact-of-life increases, amounting to \$400 million, include the additional costs of overseas subsistence and construction projects brought on by the decline in the value of the dollar relative to other major currencies.

The final \$2.2 billion of the supplemental will permit us to continue the planned expansion of U.S. capabilities in several areas.

- On the order of \$430 million is requested for improvements in the strategic nuclear forces. Of this total, \$190 million will continue the development of the M-X missile, and another \$75 million will go to a further exploration and preliminary development of M-X basing options.
- We are also asking for about \$1 billion to fund a wide variety of programs, including more than \$35 million for implementation of provisions of the Panama Canal Treaty. However, the bulk of these funds will go to heightened readiness and an improved NATO posture. Around \$99 million is essential for removal of the defects we found in our mobilization plans and programs as a result of last year's Exercise NIFTY NUGGET. Another \$85 million is needed to fund the FY 1979 U.S. share of the NATO AWACS program which is so important to the collective defense of Europe.
- Finally, we are requesting about \$675 million for naval shipbuilding. Of that total, about \$110 million will go to the settlement of claims by the Newport News Shipbuilding and Drydock Company. Another \$363 million is allocated to a DD-993 (a more capable version of the DD-963-class destroyer), and \$194 million is for one additional FFG-7, the frigate that will become a workhorse of our escort force in the coming decades.

I realize that, as always, there will be less than universal agreement with these budget totals, their allocation, and the forces we are programming for FY 1980 and the years ahead. Most of the issues will arise, I suspect, not because of differences about the importance of national defense, but because of disagreements over the key factors that affect our judgment about specific defense needs. Some may simply feel

that, in a period when total federal resources are declining as a percent of GNP, other national needs should receive a higher priority than defense. Some may consider the international environment so dangerous that many domestic needs, however meritorious, should take second place to defense. Still others may hold to the view that we are neither conservative enough nor sensitive enough to perceptions (however ill-founded) in the planning of our forces. And there will certainly be those who regard aspects of the worldwide balance of military power as too precarious for comfort.

It would be idle to pretend that a report such as this -- or a defense program -- could reconcile all these differences. But it can and does attempt to deal with the main factors to which our defense budget and forces must be sensitive. And it does seek to assess the adequacy of our capabilities in light of our national objectives and the problems ahead of us. Even if agreement about the proposed budget does not follow, understanding of our own assumptions may increase. If so, we can count on an enrichment of the defense debate.

I. PREPARATION OF THE BUDGET

Although the fact is not widely appreciated, the defense budget is shaped by the way in which it is prepared. At one extreme, the budget total can be reached by building from the ground up. This approach requires a detailed specification of needs, and an aggregation of those needs into a posture that we would then attempt to acquire at the least possible cost, but without regard to what the total might be in relation to federal revenues. At the other extreme, some percentage of the federal budget can simply be allocated to defense, and we could then attempt to create the most effective possible posture out of those resources.

For a variety of reasons, we must resort to some combination of these approaches. One of the realities facing us is that, in practice, we can never arrive at a fixed determination of needs -- a requirement -- on which everyone could agree, or on which everyone could agree independently of a host of other considerations. For the most part, that is because we are not talking about a capability that will either surely succeed or surely fail at its assigned task. Usually, we are considering forces with a certain probability of success, although we may not be all that confident about the probability. For some tasks -- the deterrence of nuclear war, for example -- we rightly insist that the probability of success be very high. For others it can be lower.

Probability of success in a given assignment is not the only factor we must consider. We must also recognize that a certain posture has some probability of success -- not in performing every conceivable task -- but in doing a specific set of jobs. There is no sovereign posture suitable for all times and places; we must decide what we want ours to do.

It is essential, in these circumstances, to consider a range of postures, along with their costs, the tasks they are designed for, and the estimates of their probability of success in performing these tasks. In this process, the judgments of the Joint Chiefs of Staff and the Military Departments are indispensable ingredients.

It is equally essential to receive budget guidance reflecting the President's judgment on the nature of the posture he considers appropriate. Resources are finite. Not all of them can go to defense, even in wartime. In peacetime, especially difficult choices have to be made among competing demands and objectives, as the Congress fully recognizes in its own budgetary procedures.

Budgetary guidance, in short, is a fact of life. We have found, moreover, that we gain more effectiveness overall by maximizing a posture and its probability of success within a budget constraint than we do by tearing apart a "requirement" in order to squeeze it into what ultimately must be a resource limitation.

That being the case, we should not be arguing about some hypothetical military "requirement" reached independently of any estimate of costs or probability of success. Nor should we be debating whether the FY 1980 defense budget and Long-Range Defense Projection are identical and consistent with what we projected a year ago. What must concern us is whether the budget guidance and the projections we have reached this year are justified in light of current and future problems -- non-military and military -- as we now see them.

II. THE DEMANDS OF SECURITY

How we respond to these issues is bound to depend in part on what we see as threats to the nation's security. We who are concerned with military forces may tend sometimes to regard security as a function exclusively of external military threats to the United States, and of our ability to counterbalance or remove them. In defining these external threats, it should be added, we have almost always recognized that foreign capabilities should be only one factor in determining what constituted a danger. We have, for the most part, taken into account the intentions of other powers and the forces of potential allies in designing our own capabilities.

Now, in addition, we understand very well that life, liberty, and the pursuit of happiness require much more than freedom from external military threats. We are not secure as a nation -- in fact, we cannot even be secure militarily -- if our economy is under repeated attack from inflation, recession, and shortages of energy or essential raw materials. We are not secure as a nation if we are increasingly an island of democracy surrounded by authoritarian states and cut off from external markets and cultural exchanges. And surely, we are not secure

as a nation if we lose confidence in our ability to cooperate among ourselves in the solution of our foreign and domestic problems. Non-military threats are no less real because they may be less palpable, and their claims for resources are no less legitimate because they may be less immediately lethal.

To recognize these other claims is not to disparage the importance of military security. The Constitution makes providing for the common defense the first duty of government, and quite properly so. Without a sufficient defense, we are unlikely to maintain the other conditions necessary to the enhancement of our values. That is well understood; it is not one of the issues we should have to resolve. What we do have to decide, however, is the size and urgency of our defense needs: the extent to which we must sacrifice other national objectives in order to meet those needs, and the speed with which we must remedy any current or anticipated defense weaknesses.

At one extreme, we could postulate -- and some have -- a set of international conditions so charged with danger and so likely to eventuate in a major war that our only recourse would be a desperate one. We might then decide we needed to commit 20 percent or more of the national income to our defense establishment -- over \$400 billion a year. At the other extreme, we might argue -- and some have -- that no real military threat existed, that all the trends pointed in the direction of international peace and stability, and that we could reduce our defense expenditures substantially. Figures of as little as three percent of the national income -- about \$60 billion a year -- have been suggested.

Most of us, I believe, would reject either extreme. Our rejection would probably be based in part on the recognition that international conditions are neither so ominous nor so benign that drastic action in either direction is warranted. We would also be aware that a defense posture and effort disproportionate to the situation could be counterproductive. By being too large, they could become a self-fulfilling prophecy in producing some of the dangerous conditions (an arms race, for example) that we had falsely anticipated. By being too small, they could encourage precisely the aggressive behavior we had so benignly overlooked.

In fact, we already have rejected the extremes. Critics have suggested more than doubling or more than halving the defense budget, at the extremes. But most suggestions fall into a more limited range. In these circumstances, the issues facing us are moderately narrow in scope. Basically, we must consider whether conditions have changed sufficiently to warrant an adjustment, on the margin, in the resources we allocate to defense.

CHAPTER 3

THE INTERNATIONAL SITUATION AND DEFENSE POLICY

Section 812 of the FY 1976 Department of Defense Appropriation Authorization Act directs the Secretary of Defense, after consultation with the Secretary of State, to "prepare and submit to the Committee on Armed Services of the Senate and House of Representatives a written annual report on the foreign policy and military force structure of the United States for the next fiscal year, how such policy and force structure relate to each other, and the justification for each."

The requirement is well taken. It is essential to recognize not only how closely related our defense posture is to international conditions, but also how sensitive those conditions are to a wide variety of factors.

This chapter responds specifically to Section 812 of the Department of Defense Appropriation Authorization Act of 1976, but the entire FY 1980 Defense Report is intended to comply with its provisions. The Secretary of State has indicated that he considers the report to be responsive to these provisions.

I. U.S. INTERESTS

International conditions are vital to us because the United States has become irreversibly involved in world issues and politics. That involvement has been precipitated by a number of forces. The technology of nuclear weapons and long-range delivery systems has made the United States vulnerable in an unprecedented way, and has forced us to concern ourselves with events abroad to an unprecedented degree. Modern communications have strengthened this involvement by bringing the rest of the world to our doorstep in great detail and with remarkable speed. Our economy has come to depend heavily on imports of energy supplies and raw materials, and nine percent of our GNP now results from the sale of U.S. goods and services abroad. We must inevitably be interested in these sources of supply and markets if we are to maintain and improve our standard of living and keep up our economic strength -- on which our military power depends.

The forces of history have been at work as well. They have made us the leaders of the West and given us the burdens of organizing its security. Those burdens have led to the establishment of a number of alliances and the creation of a collective system of defense designed to prevent the concentration of overbearing power against the United States and its friends. Nowhere are those commitments stronger than to the great industrial democracies.

Because of our current interests as well as our historical commitments, we are bound to have a strategic stake in such distant places as the Sea of Japan, the Strait of Malacca, the Persian Gulf, the Dardanelles, the Baltic, and the Barents Sea. Even our most basic principles have contributed to this involvement. Our defense of democracy and human rights is not new; it revives a tradition that goes back to the founding of the Republic. And that defense of individual liberties cannot be strictly confined to the United States. Though we do not assert that our own ideals must be adhered to by other nations -- we do not always live up to them ourselves -- we believe it would be very difficult to assure the institutions of the United States in a world environment marked principally by authoritarian rule and an absence of law.

Not only are we inextricably involved in world affairs; that involvement is growing. We have already passed the point of no return; we cannot turn back. Nor, for the foreseeable future, can we expect any nation or combination of nations to act as understudy or substitute for the United States in its worldwide role. That role is a fact with which we must live for a long time to come.

U.S. involvement and leadership, with the inevitable exposure to international rivalries that follow from them, mean that we have a large stake in the peaceful settlement of disputes and world stability. Involvement and leadership also mean that passivity, and the pretense that distant conflicts do not concern us, cannot be a realistic policy for us. We are not the world's policeman, and could not play the part if we wanted it. We are not, and should not be engaged, in every foreign dispute -- however much the parties may wish to involve us. The world has not become that interdependent. Nor have other powers, equally interested in a stable world order of independent states, lost the capacity to play a constructive role in many of these disputes. But where our interests are at stake -- as they are in so many parts of the world -- it is to our advantage to act early and positively.

II. INTERNATIONAL CONDITIONS

An active and creative foreign policy is more than desirable for the United States on abstract grounds. Such a policy, despite its admitted risks, is essential. Deep and continuing domestic divisions, such as we have seen most recently in Iran, can tempt outsiders to intervene for their own purposes. International economic problems have grown to such a magnitude that they pose a threat to international trade and investment. A number of ancient disputes, most notably in southern Europe and the Middle East, have explosive possibilities. The collapse of 19th-century empires in the wake of World War II has left large post-colonial problems in Africa and Asia. The continued strength of nationalism has contributed to divisions between the Soviet Union and the People's

Republic of China (PRC), between the Soviet Union and its restive East European buffers, and, upon occasion, even within NATO itself.

Many of the same forces that have led to these troubles have also brought about the international sabotage and terror that contribute further to domestic and international instability. Where differences have continued unresolved, nations have turned to the international market for the acquisition of modern conventional arms, and some may even be tempted by the lure of nuclear weapons.

A. The Soviet Union

Whether the Soviet Union would act more constructively in a less turbulent world is, of course, impossible to say. We can only note that in existing circumstances, the Soviet Union remains a major force for instability -- not the only one but the biggest one.

Views differ on exactly why the Soviets persist in this role. However, the facts of their contribution to instability are hardly a secret. Domestically, they have perpetuated a political system of such authoritarianism, secrecy, and internal repression that they inevitably trail a cloud of suspicion and doubt about their intentions and motives wherever they go. Internationally, the Soviets have continued to encourage groups seeking to undermine established governments, sponsor so-called wars of national liberation, seek permanent footholds with their clients, and frequently oppose the constructive settlement of international disputes.

Most disturbing of all, the Soviets have undertaken a long-term military buildup that still continues after more than 15 years. What lies behind this buildup is a subject for debate. There can be no doubt, however, about the fact of the buildup itself.

We have attempted to measure the scale of the Soviet effort in a number of different ways: by estimating what would have been the costs if we had made a comparable effort in the U.S. economy; by calculating what the posture and programs must have cost in the Soviet economy; and by comparing physical outputs wherever possible with what the United States has produced. Each method has its own drawbacks. But all of them underline certain indisputable trends. Among the most significant of those trends should be counted:

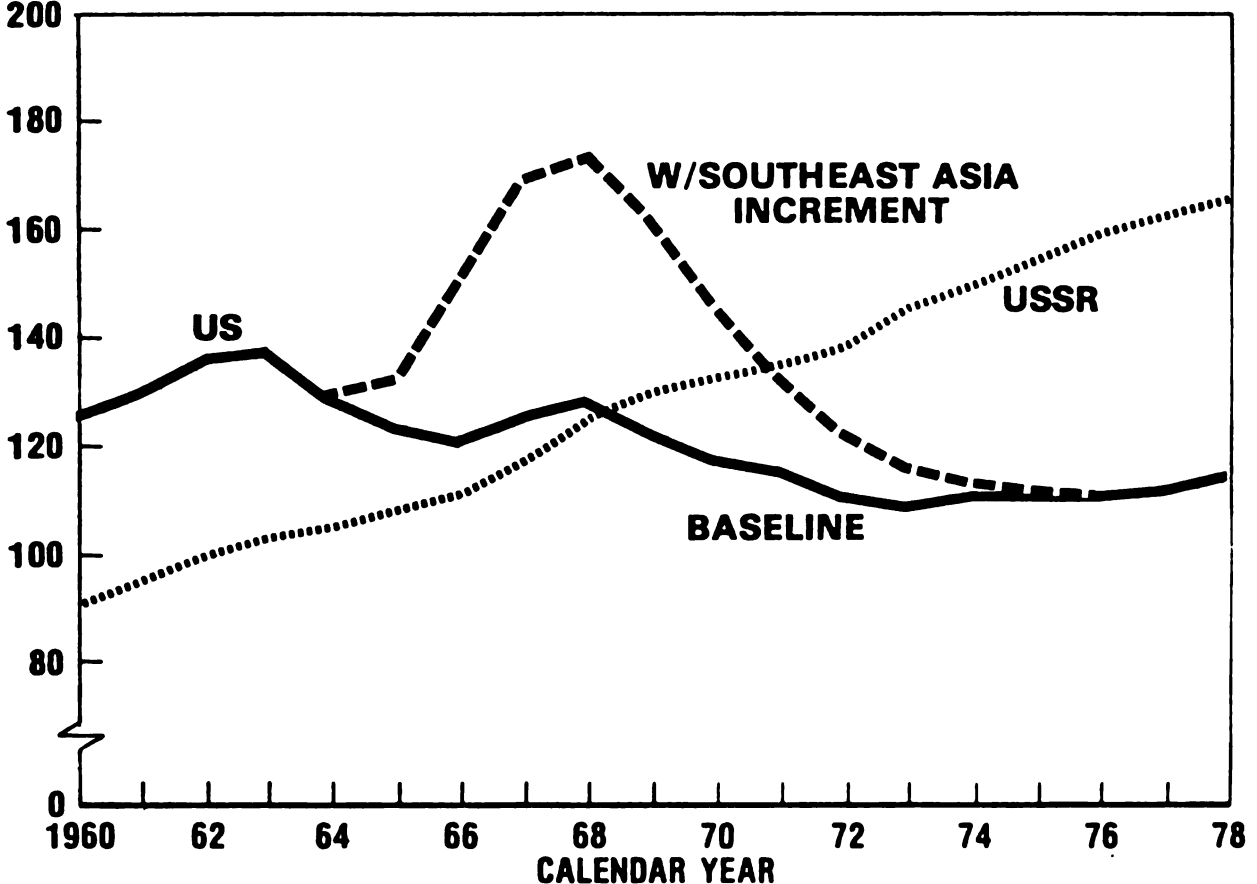
- The steady growth of the Soviet defense effort. Over a period of more than 15 years, the growth rate has probably averaged in the vicinity of three percent a year in dollars, and between four and five percent a year in rubles. In other words, this growth has been at about the same rate as the growth in the overall Soviet economy.

- The general magnitude of the effort. We estimate that, on the average, it has accounted for somewhere between 11 and 13 percent of GNP. Other analysts put the level of effort at 15 percent or higher.
- The size of the effort relative to that of the United States. We believe that when the two programs are measured in U.S. prices, the Soviet effort came to equal ours by about 1971, and now exceeds it by something like 25 to 45 percent (with retirement costs excluded on both sides), depending on whether the ruble or the dollar measure is used. The general character of these trends is shown in Chart 3-1.

Chart 3-1

COMPARISON OF US DEFENSE OUTLAYS AND ESTIMATED DOLLAR COST OF SOVIET DEFENSE PROGRAMS

BILLIONS OF FY 1980 DOLLARS

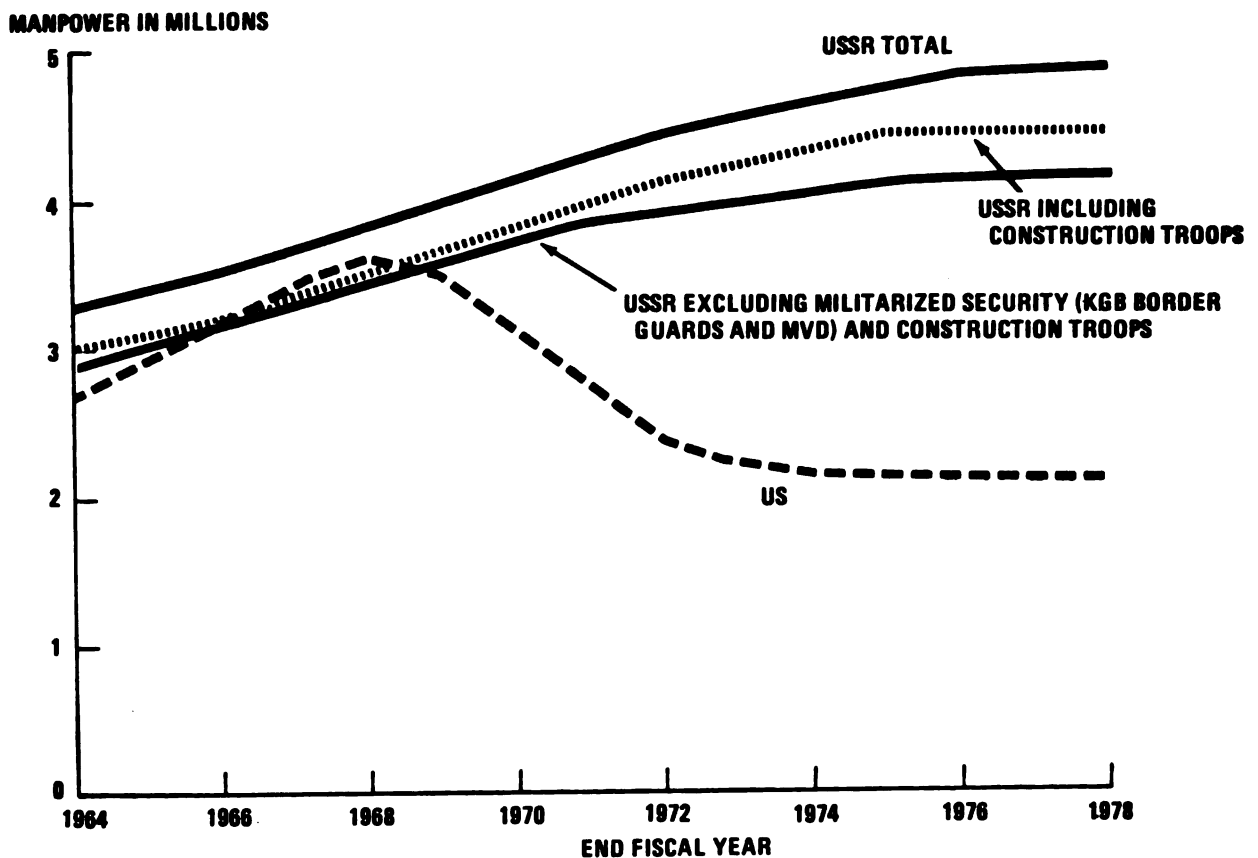


NOTES: 1) INCLUDES NON-DoD-FUNDED DEFENSE PROGRAMS (e.g., COAST GUARD)
 2) EXCLUDES RETIREMENT COSTS

These trends in the level of resources allocated to defense are consistent with what we know about the growth and improvement in Soviet military capabilities. Military manpower, as shown in Chart 3-2, has risen from about 3.4 million in 1964 to roughly 4.4 million in 1978 -- not counting armed border guards and internal security police. Strategic nuclear delivery vehicles (ICBMs, SLBMs, and heavy bombers) have risen from approximately 450 in 1964 to 2,500 in 1978. While their peripheral attack forces have not increased significantly in numbers, older Soviet systems are being augmented or replaced by the much more sophisticated SS-20 mobile, MIRVed IRBM and the BACKFIRE bomber. The ground forces have been expanded from 148 divisions in 1964 to over 170 divisions in 1978, and Frontal Aviation (the Soviet tactical air forces) has gone from about 3,500 to 4,500 first-line combat aircraft. Both the ground and the tactical air forces have been extensively modernized.

Chart 3-2

U.S. — U.S.S.R. ACTIVE-DUTY MILITARY MANPOWER



The Soviets already have an open-ocean navy. During the past decade, it has seen more qualitative improvement than quantitative growth. With the appearance of two light aircraft carriers (a third is under construction) and a large ocean-going amphibious ship with surface-effect landing craft, and with the fitting-out of what could be a large, nuclear-powered cruiser, we may now be witnessing the beginnings of a true naval power projection capability. In sum, the Soviets have finally arrived in most respects as a modern military power with a limited global reach.

The seriousness with which the Soviets have undertaken -- and give every sign of continuing -- this effort is as impressive as its magnitude. One reflection of that seriousness is the emphasis in Soviet military doctrine on the achievement of balanced war-fighting capabilities in both nuclear and non-nuclear forces. Another reflection of seriousness has been the steadiness of purpose evident in the buildup. The Soviets expanded their effort as our own grew in the 1960s. But theirs continued to expand as ours began to decline.

Their programs seem to have been equally insensitive to the possibility that we might react and intensify the competition. Although it is clear in retrospect that we had the superior technology, the Soviets did not hesitate to try for a number of technological firsts. They were the first to deploy MRBMs and IRBMs, the first to deploy ICBMs and ABMs, and the first to demonstrate modern anti-satellite (ASAT) systems. Though we have not yet responded with an ASAT of our own, the Soviets continue to work on and test new versions. Other of their initiatives, such as the Fractional Orbital Bombardment System (FOBS) and the MIRVed IRBM, have not seemed worthy of a response. Obviously, we cannot afford to underestimate the Soviet dedication to the achievement of expanding military power, or overestimate the effectiveness of unilateral restraint on our part as a way of controlling or reversing the military competition.

It is essential, at the same time, that we not exaggerate what the Soviet buildup has meant for the worldwide balance of military power and its stability. While the Soviets have accomplished a great deal, their accomplishment must be seen in perspective.

For a number of Khrushchev's years, not only did the Soviets spend less than the United States; Khrushchev himself seems to have insisted on his own kind of New Look, with a heavy emphasis on the deterrent value of nuclear capabilities, a reduction in ground forces, and a general deemphasis of conventional capabilities. A significant percentage of what we now count as a past buildup in ground and tactical air forces must have gone to a restoration and modernization of the capabilities cut back during those still earlier years.

Even where Soviet strategic nuclear forces are concerned, today's capabilities are so impressive in part because they arose from such a low base. Whether the Soviet efforts in this realm have been worth the cost remains problematic. We ourselves did not find our numerical nuclear superiority particularly useful or usable when we had it. In fact, those were the years of the Berlin blockade and wall, of the North Korean adventure, successive repressions of Czechs, East Germans, Hungarians, and Poles, and the Cuban missile foray. The Soviets, of course, are different. Should they somehow obtain a perceived nuclear superiority, they might mistakenly try to use it for political advantage. But it seems doubtful that they would be any more comforted by nuclear equivalence than we were by nuclear superiority in the past. Despite their vast nuclear superiority to the PRC, the Soviets have deemed it necessary to station as much as a quarter of their ground and tactical air forces in the vicinity of China.

These differences in force deployments, and in the contributions of allies, are part of what make U.S. and Soviet military capabilities so hard to compare. Some of the Soviet forces deployed along the border with the PRC could, in a matter of months, be redeployed to Eastern Europe. And we cannot be certain that the Soviets would reduce their defense establishment even in the event of restored friendship with the PRC. It remains the case, nonetheless, that they must carry a burden with their Far Eastern deployments -- a burden amounting to between 11 and 20 percent of their total defense effort -- that we no longer find it necessary to incur on anything like a comparable scale.

The United States, for its part, has long air and sea lines of communication to its allies in Europe, the Middle East, and the Far East, and we must pay heavily for their use and protection. But the Soviets have severe geographic problems of their own. Their forces in the Far East subsist at the end of a lengthy and vulnerable railroad line, and even supplies and reinforcements to their forces in East Germany must pass through territory that, in many circumstances, could prove less than hospitable.

Soviet naval forces must cope with particularly awkward operating conditions. Attempts to defend against our nuclear forces are expensive, but do not guarantee much in the way of return. It may cost them less to attack our lines of communication than it costs us to defend them, but even that is not certain. They have long and harrowing distances to go in order to reach those LOC's; they have to invest in the defense of the Barents Sea and the Sea of Japan; and they have found it necessary to divide their forces into four separate fleets with poorly located home bases. As the Secretary of the Navy points out, "The Soviet Baltic Fleet can be bottled up in the event of hostilities by mining the Danish Straits. The Soviet Black Sea Fleet can be bottled up by mining the Turkish Straits. The Soviet Mediterranean Squadron would

lead an exciting, but brief, existence in the event of war, and would have no way of getting out of the Mediterranean, the exits to which can easily be mined or blocked by submarines Large portions of the Soviet Fleet are based at Vladivostok on the Sea of Japan and can be bottled up by similarly closing the straits leading out into the Pacific. The only fleet having a semblance of access to the open oceans is the Northern Fleet, and even that fleet has to travel all the way around Norway and fight its way through the Greenland, Iceland, United Kingdom gap into the Atlantic Ocean"

To these geographic encumbrances, the Soviets must add a host of other difficulties. They have allies of sorts, to be sure, and we count the forces of those allies in the Warsaw Pact order of battle. But they are allies unlike our own. It would seem plausible that some portion of the Soviet theater capability has at least an additional mission: the need to watch Soviet friends.

The inefficiency of the Soviet economy is another burden the Kremlin must bear. It has been noted with some dismay that the Soviet investment in military research and development may be 75 percent larger than ours. This is a matter of legitimate concern. But several other facts are also worth noting. Our technology, on balance, continues to surpass theirs by a considerable margin. Our allies make a substantial investment in military R&D, in contrast to the allies of the Soviet Union. The Soviets, for their part, must deal with a civil sector that does not produce technology of use to the military sector to nearly the same extent as ours does. For that reason alone, the Soviets probably have to invest more defense resources than we do to achieve a comparable military result.

There is a significant probability that the current Soviet economic problems will be aggravated in the years ahead. A downturn in the growth of the working-age population in the Soviet Union has already occurred; it will probably continue until the mid-1980s. The average annual rate of increase in GNP has slowed from 5.5 percent between 1966 and 1970 to less than four percent in the last seven years. The growth in industrial production appears to have become sluggish, and the expansion in energy production -- particularly of oil -- has decreased.

As far as we can tell, the slowdown in economic growth has been sharper than the Soviet leadership had anticipated. What it means, inevitably, is that a smaller volume of goods and services is being added each year to be divided among consumption, investment, and defense. Nonetheless, all of the evidence available to us on Soviet defense programs under way and planned suggests that the long-term trend in allocation of resources to defense is likely to continue into the 1980s.

B. Cooperation with the Soviet Union

Because of that expectation, and because of what has already occurred, we have good grounds for concern about Soviet intentions as well as Soviet capabilities. It is troublesome that the Soviets place so much emphasis on the competitive side of their relationship with the United States. With so many problems, but with so much military power, a desperate leadership could cause unparalleled international turmoil. Soviet difficulties, in short, will not necessarily redound to our benefit. Those difficulties, as well as Soviet military accomplishments, make it essential that we maintain our defenses.

At the same time, it is well to recall that the basis for a more cooperative relationship continues to exist. In President Carter's words: "We remember that the United States and the Soviet Union were allies in the Second World War In the agony of that massive conflict, 20 million Soviet lives were lost. Millions more who live in the Soviet Union still recall the horror and the hunger of that time." As the President went on to say, "I am convinced that the people of the Soviet Union want peace. I can't believe that they could possibly want war."

The Soviets appear not to have cultivated much of a taste either for great unilateral restraint in their defense decisions, or for reciprocity to U.S. and allied restraint. They have proved willing, however, to engage constructively in a range of negotiations to constrain the military competition on the basis of detailed and verifiable arms control agreements. Undoubtedly they do so principally or at least largely to constrain the United States. Our motive with respect to them is similar. Where mutual constraint is in the interest of both, agreement should be possible.

1. SALT

Paramount among those negotiations has been SALT -- the strategic arms limitation talks between the United States and the Soviet Union. The ABM treaty of 1972, a major achievement of arms control, remains in force. Although the five-year Interim Agreement on offensive strategic nuclear weapons expired in October, 1977, both the Soviet and the U.S. governments have announced their intention to take no actions inconsistent with the terms of the Agreement as negotiations continue on a replacement -- SALT II. We are now close to such an agreement.

The SALT II agreement will consist of three parts: a basic Agreement which would be in force through 1985; a Protocol of about three years' duration; and a Joint Statement of Principles to guide future negotiations.

for: The SALT II agreement, as it now stands, will provide

- an equal aggregate limit on the number of strategic nuclear delivery vehicles -- ICBM launchers, SLBM launchers, heavy bombers, and long-range air-to-surface ballistic missiles (ASBMs). This ceiling, initially, will be set at 2,400 vehicles, as agreed at Vladivostok in 1974. It will subsequently be lowered to 2,250.**
- an equal aggregate limit of 1,320 on the total number of MIRVed ballistic missile launchers and aircraft equipped with long-range cruise missiles.**
- a limit of 1,200 on the total number of MIRVed ballistic missile launchers.**
- a limit of 820 on MIRVed ICBM launchers.**
- in effect, a ban on increasing the number of fixed heavy ICBM launchers.**
- a ban on the construction of additional fixed ICBM launchers.**
- limits on the introduction of new ICBMs.**
- an agreement to exchange data on the numbers of strategic weapons systems in constrained categories.**
- advance notification of certain ICBM test launches.**

The agreement will also include provisions to enhance verification, such as: bans on interference with national technical means of verification and on deliberate measures of concealment that impede verification by national technical means. The agreement will also establish counting rules to facilitate verification of the MIRV and bomber limits; and a provision outlining the duties of the Standing Consultative Commission (SCC) in connection with the SALT II agreement. The agreement will include a ban on circumvention of its provisions. However, SALT II will not interfere with continued nuclear or conventional cooperation with our allies.

We have taken the position that the Soviet BACKFIRE bomber can be excluded from the aggregate defined by the SALT II agreement only provided that the Soviets undertake commitments to inhibit

BACKFIRE's effective use in an intercontinental role, and to impose limits on its production rate. Soviet compliance with these commitments will be essential to the obligations assumed under the SALT agreement.

The Protocol will allow development and flight-testing of air-launched, ground-launched and sea-launched cruise missiles to unlimited range, but will ban for its duration the deployment of ground and sea launched cruise missiles capable of a range in excess of 600 kilometers. There will be no maximum on the range permitted for deployed ALCMs. The Protocol will ban flight-testing and deployment, but not development, of missiles for ground-mobile and air-mobile ICBM launchers. We have proposed that the Protocol expire in 1981, and, in any case, before the initial operating capabilities of our affected cruise missile programs or the initial flight tests of U.S. mobile ICBMs.

The United States will not deploy a mobile ICBM system that would prevent adequate verification of the number of launchers deployed. We will insist that any Soviet system meet the same verification standards. It is our government's view that those parts of the joint draft text of the SALT II agreement already agreed to allow deployment of mobile ICBM systems of the types we are considering. The draft agreement explicitly permits deployment of mobile ICBM launchers during its term, but after the expiration of the Protocol period, which would end well before mobile ICBM systems could be ready for deployment.

The limitations in the Protocol in no way set a precedent for the way in which SALT III will deal with any of these systems. The rest of the agreement will survive as a self-contained commitment after Protocol expiration. Any future limits on the systems covered in the Protocol (other than those already contained in the basic agreement) will require U.S. agreement and Congressional approval.

In the Joint Statement of Principles to guide SALT III, the two sides have agreed to seek further reductions in the ceilings of SALT II, further qualitative limitations on strategic systems, strengthened verification, and resolution of the issues temporarily covered by the Protocol. Each side, in addition, may raise any issue related to the further limitation of strategic arms.

It would be a mistake to believe that a SALT II agreement along these lines, by itself, will solve all our defense problems or end the strategic nuclear competition. It will not. It would also be a mistake to pretend that such a SALT agreement will be ideal from the standpoint of the United States or, for that matter, of the Soviet Union. It will not be, though it is the best agreement that both sides will accept.

In recognizing the limits of SALT, it would equally be a mistake to ignore the important ways in which the agreement will contribute to our security. Those contributions will be lost if we do not have a SALT agreement.

I say this for a number of reasons. The agreement will firmly establish the principle of equal aggregates by fixing and equalizing the total number of strategic delivery vehicles each side can have. As a consequence, it will require the dismantling of several hundred operational Soviet strategic delivery vehicles, but will not require any such reductions on the part of the United States. It will hold the deployment of Soviet strategic forces well below the number they would be capable of deploying during the period of the agreement, but would not prevent the United States from making some additions to our deployments. The provisions limiting new types of ICBMs are potentially among the most important in the agreement because they constrain qualitative improvement.

The agreement will allow us to continue the planned development of such new weapons as we may need to ensure our own and allied security. At the same time, it will reduce uncertainty about the nature of Soviet strategic forces in the 1980s, and thus make it easier to plan our own.

I should emphasize that SALT II will not result in any reduction in the resources we allocate to our strategic forces during the life of the agreement. The resource level may well have to be higher than now, though lower than during the 1960s (in constant dollar terms). But the growth will still be considerably less than if there were no agreement. Perhaps most important of all, in addition to its direct benefits, this agreement will constitute another step in a difficult and delicate process that could lead not only to greater international stability and reduced competition, but also to closer cooperation between the United States and the Soviet Union in the creation of a more peaceful world order.

Questions will undoubtedly arise about our ability to verify Soviet compliance with the terms of SALT II. We have considered the issue carefully and, based on our experience with SALT I, together with the foreseeable provisions of SALT II, we believe that our verification procedures will be adequate for this purpose. To detect violations of arms control agreements with the Soviets, we have been employing a set of intelligence capabilities known as "national technical means." As the President has stated, photo-reconnaissance satellites constitute one of them. These means have enabled us to monitor many aspects of the development, testing, production, deployment, training, and operation of Soviet strategic capabilities, despite the closed nature of Soviet society.

The SALT I agreements recognized the role of these national technical means in verifying compliance with their terms. They also required that neither side interfere with these means or resort to deliberate concealment that impedes verification. A U.S.-Soviet Standing Consultative Commission (SCC) was also established to deal with issues of interpretation and compliance. In the years since SALT I was signed, the United States has raised with the Soviets in the SCC a number of unusual or ambiguous activities that were, or could become, grounds for more serious concern. The Soviets have also raised issues with us. In every case we raised, either the activity ceased or we obtained an acceptable explanation of it from the Soviets. In short, one of the most important benefits of SALT has been that it legitimizes U.S. monitoring of Soviet strategic weapons development and deployment, and prohibits Soviet interference with such monitoring activities.

We and the Soviets are now tightening up and codifying these verification procedures for SALT II in a more rigorous way. I am confident that SALT II will be adequately verifiable. We believe that, to go undetected, any Soviet cheating would have to be on such a small scale that it would not be of any military significance. Not only would any cheating serious enough to affect the terms of the agreement be detectable; we would discover it in sufficient time to take whatever action the situation required. None of the above comment is intended either to condone or to predict cheating, whatever its scale. We expect compliance with any agreement, and we intend to verify that compliance.

2. Other Negotiations

Along with SALT, various other aspects of the military competition are under discussion between the United States and the Soviet Union. With the evidence that the Soviets had successfully tested an anti-satellite system, we proposed talks aimed at banning or limiting anti-satellite capabilities and keeping space open for free and peaceful use by all. The Soviets agreed to such talks, which have now begun.

We also continue to be engaged with the Soviets, and the United Kingdom, in negotiations for a comprehensive ban on nuclear testing. While these talks have made progress, obstacles to a treaty remain. We are committed to the achievement of an adequately verifiable treaty. But we must be sure that, under its terms, we can retain confidence in the reliability of our nuclear warheads.

The talks on mutual and balanced force reductions (MBFR) in Vienna have now been going on for more than five years. Progress toward an effective agreement has been minimal. Disagreement continues on the basic issue of the size of the currently deployed Warsaw Pact

forces in East Germany, Poland, and Czechoslovakia. The West has good reason to believe that there are considerably more Eastern military personnel in the area than the East claims. But the East has at least agreed to the principle of parity of outcome, and of a reduction in NATO and Warsaw Pact forces to a common ceiling.

The President, I should note, has now ordered the modernization of the nuclear warheads for the LANCE missile and the 8-inch howitzer. The designs are such that the option is kept open to add later, with reduced lead time, their enhanced radiation elements. His ultimate decision will be influenced, as he has said, "by the degree to which the Soviet Union shows restraint in its conventional and nuclear arms program and force deployments affecting the security of the United States and Western Europe."

Last year, I described the President's policy for controlling the international traffic in conventional arms. We are now actively discussing with the Soviets how our two nations might encourage restraint consistent with the legitimate right of self-defense and international obligations.

Although our discussions with the Soviets on stabilizing the military presence of the two sides in the Indian Ocean have been in abeyance, we still hope to achieve that stability at the levels that prevailed during recent years. However, we will not accept an increased Soviet naval presence as the price for such an agreement.

In sum, fundamental differences in economic, social, and political beliefs and objectives lead to an adversary relationship between the United States and the Soviet Union. The two sides nevertheless share the common goal of avoiding direct confrontation and reducing the risk of nuclear war. Such a goal is not a comfortable basis for international peace and stability, but it is a far cry from an uninhibited arms race and all-out, across the board enmity. It is important to recognize that fact. It is equally important, in the President's words, to "avoid excessive swings in the public mood in our country -- from euphoria when things are going well, to despair when they are not; from an exaggerated sense of compatibility with the Soviet Union, to open expressions of hostility." The present situation, in our judgment, warrants neither extreme. The military capabilities and policies of the Soviets still constitute a threat to our security. The threat, while greater than in the past, will remain manageable as long as we and our allies make gradual but steady improvements in our own defenses.

C. Worldwide Developments

Our relationship with the Soviet Union is not the only basis for characterizing international conditions. How we view the current and future situation, and what we do about our defense posture, both depend on a number of worldwide developments.

A continued spread of nuclear weapons would result in greater insecurity worldwide, whatever the temporary advantages individual nations might anticipate from the acquisition of those weapons. We remain determined, therefore, to support an end to nuclear proliferation. We have already begun to investigate new technologies and examine new institutional arrangements that will enable the nations of the world to harness nuclear energy while not increasing the availability of nuclear weapons. On June 12, 1978, Secretary Vance announced that the United States would not employ nuclear weapons against countries that have undertaken a legally binding commitment not to develop such weapons, and are not allied to a nuclear power or associated with it in attacking the United States or its allies. That statement, I should add, does not impair the readiness of the United States to use nuclear weapons in defense of its allies in Europe and Asia if any of them is attacked either by a nuclear power or by an ally or associate of such a power.

Much more needs to be done. The United States continues to support the development of safeguarded nuclear power, and the provision of assured supplies of nuclear fuel. It is equally important to prepare fully for the 1980 Non-Proliferation Treaty Review Conference. We also need continued progress with our 56 partners in the International Fuel Cycle Evaluation. Over the longer term, however, we must recognize that the continued willingness of many nations to refrain from seeking nuclear weapons will depend on the maintenance of international political and military stability.

The President has already transmitted to the Senate the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques, signed at Geneva on May 18, 1977. We also continue to seek limits and controls on the use of new weapons that would have a particularly deadly impact on civilian populations. To that end, treaties dealing with radiological and chemical agents are under negotiation, but remain to be completed.

We are beginning to check the flow of our own conventional arms exports, but we recognize that slowing down the global spread of these arms cannot be achieved by the United States alone. We are discussing possible multilateral measures with other arms suppliers, in addition to the Soviet Union, and we are encouraging the purchasing nations to adopt regional agreements that limit arms competition. So far, however, our progress in these directions must be characterized as modest.

On the international economic front, world trade has continued to expand. Despite the recession of the early 1970s, we have avoided the trading wars of the 1930s and have continued negotiations to liberalize and improve the world trading system. Differences between North and

South on global needs and priorities have also been narrowed. There has been progress in the negotiations on the Law of the Sea. However, the commitment to open international trade remains fragile, and protectionist pressures are rising. The value of the dollar has declined, the U.S. trade deficit is still large, and inflation remains a serious and persistent problem. A stalemate over seabed mining means that the oceans could become an arena for conflict rather than cooperation. The President's energy and anti-inflation programs, along with the drive to increase U.S. exports, should help to deal with some of these problems. But without growing economic self-discipline on the part of the United States, especially in the use of imported fuels, the threat of international economic disorder could become as great as the military danger from the Soviet Union.

While economic growth and stability may be threatened, individual liberties and democracy have been strengthened by the campaign for human rights. Thousands of political prisoners have been freed in more than a dozen countries. The torture of prisoners has been reduced, and the trials of political prisoners have become open more often to the public. The campaign itself has won support both from many governments and from people living under the governments we criticize. In some instances, we have witnessed encouraging beginnings in the process of broadening political freedoms. The tide may not yet be running strongly in this area of vital concern to the United States, but it is running in our favor.

D. Regional Developments

Many of the most serious international crises of the postwar era have arisen, not from these great global issues, but from regional threats and instabilities. Because the United States cannot escape worldwide involvement, our security and our defense needs are a function of these developments and of the success of our foreign policy in dealing with them. I want to emphasize that frequently the effectiveness of our foreign policy depends on the military power in back of it. Nowhere are the two more closely related than in Western Europe.

1. Western Europe

As President Carter has emphasized on a number of occasions, Western Europe is of vital interest to the United States. Outside the United States and Canada, it constitutes the greatest aggregation of economic and democratic strength in the world. The members of the European Economic Community by themselves have a total population, military manpower pool, and GNP well in excess of the Soviet Union. They have been able to provide their people with a much higher standard

of living than prevails in the USSR or any of its allies. We must prevent the hostile domination of this region, and we must help bring the talents and resources of Europe both to its own defense and to the creation of more peaceful and stable world conditions.

Europe's troubles in the past (through World War II) arose largely from quarrels internal to the region. Most of those problems have fortunately become, and been recognized as, obsolete. Unity in Western Europe, though more advanced economically than politically, now is a statesman's objective rather than a philosopher's dream.

This is not to say that Europe is now free of internal problems, or that they could not be exploited by unfriendly elements. The various Western European communist movements that go under the name of Eurocommunism do not seem to be the force that they were a year ago, but some communist parties in Western Europe remain politically significant and potentially disruptive. Inflation continues at a threatening level, economic growth is sluggish, and unemployment is high by European standards. In southern Europe, the disputes between Greece and Turkey still simmer, and all of us must watch carefully the future turn of events in Yugoslavia.

These problems could be serious. But the three greatest dangers to Western Europe lie elsewhere. The first is the continuing prospect of instability in Eastern Europe which could result once again in a deserved but perilous challenge to Soviet hegemony there. The second is the continuing presence of large Soviet nuclear and non-nuclear forces in East Germany, Poland, Czechoslovakia, and Hungary backed by equally large peripheral attack and other theater-oriented capabilities in the western military districts of the USSR. The third is the vulnerability of Western Europe's oil supply, some 60 percent of which moves by sea from the Persian Gulf.

We have worked with our friends in Europe to deal with most of these problems. As a result of four economic summits, the economic policies of the major industrial powers, including Japan, are better coordinated. Many states have made progress with energy conservation and oil stockpiling programs. Greece, Portugal, and Spain continue to uphold the democratic principles established there in recent years. With Congressional repeal of the Turkish arms embargo, not only have our relations with Turkey improved; so have the chances of reducing tensions between Greece and Turkey. My own visit to Yugoslavia, and a return visit by the Federal Secretary for National Defense, General Ljubicic, have increased our joint appreciation of Yugoslav security needs. Most important of all, we are making progress toward a strengthened and modernized defense of Western Europe through the North Atlantic Treaty Organization (NATO).

Following the May, 1978, meeting of NATO heads of government, the President reaffirmed that "the U.S. is prepared to use all the forces necessary for the defense of the NATO area." A substantial number of U.S. programs are now under way in fulfillment of that commitment. We have presented the Alliance with a plan to speed up the deployment of U.S. reinforcements to Europe in the event of emergency. The plan, as I indicated last year, entails the capability to triple U.S. combat planes in the theater to 1,900 within a week, and to increase troop strength from 200,000 to 350,000 within two weeks. We are already in the process of developing the logistical and host-nation support necessary to carry out the plan. We will also test and measure our ability to match up Army battalions with supplies and equipment prepositioned in Europe, and will have them train and operate with these prepositioned resources. At the same time, we are developing plans to deploy Marine units to strategic locations along or near the NATO flanks.

That is by no means all. We have already increased our forces stationed in Western Europe by 9,500 since early 1975. With those deployments, about six U.S. division equivalents are stationed in Europe. Of these forces, one brigade from the U.S. 2nd Armored Division has been deployed to the North German Plain and is now based at Garlstedt.

In the last two years, we have also added 47,000 anti-tank guided missiles to our NATO inventory, begun upgrading our M-60 tanks, introduced more helicopters, and added two more artillery battalion equivalents to those already in Europe. During 1977, we deployed four additional F-111 squadrons to the United Kingdom; in 1979 we will be assigning the new A-10 close support aircraft to Air National Guard units, and deploying an active A-10 wing to the United Kingdom. In 1977, we began basing the F-15 in Europe, and we will supplement it with the F-16 in 1981.

The readiness of these growing capabilities is being improved as well. We are upgrading and continuing to expand our prepositioned materiel configured to unit sets (POMCUS). One additional division equivalent is scheduled to be in place by the end of 1980, and another two division equivalents will be added by the end of 1982. We are also increasing our stocks of ammunition, moving munitions forward, and uploading basic ammunition onto selected combat vehicles.

We are not alone in making these improvements. In 1979, most of our allies plan to average a three percent real growth in defense spending to support the modernization of their forces. Both we and our allies are upgrading the ability of our forces to operate in concert on the battlefield. Beginning in 1984, XM-1 tanks will be produced with the German-designed 120mm main gun. New allied tanks, attack helicopters, aircraft, anti-tank weapons, artillery pieces, air defense

systems, and ships are coming on line. More agreements for host-nation support of U.S. forces are being cemented. Collocated operating bases are being provided to support wartime deployments of U.S. tactical aircraft. Belgium, Denmark, the Netherlands, and Norway have agreed to produce 348 F-16s for their air forces. Most recently, the Alliance agreed to the collective acquisition and deployment of the E-3A Airborne Warning and Control System (AWACS). This program will significantly improve NATO's command and control as well as the effectiveness of air operations.

Many of these activities are a part of NATO's Long-Term Defense Program (LTDP). The LTDP was developed to bring increased efficiency to NATO's defenses by explicitly improving the levels of coordination and joint planning, and by increasing the standardization of equipment and materiel among NATO forces. President Carter introduced the LTDP at the May, 1977, London meeting of heads of government. Its implementation was endorsed at the May, 1978, meeting of the same officials in Washington. Participation in the LTDP involves the allies in each of ten program areas where improvements in NATO capabilities are to be specified and scheduled: readiness; reinforcement; reserve mobilization; electronic warfare; air defense; logistics; theater nuclear modernization; maritime posture; communications, command, and control; and rationalization of armaments production.

The Soviets are producing new tanks, guns, and aircraft at two or three times the rate of the United States. They are investing nearly twice as much in defense research and development, as I noted earlier. Part of this investment imbalance can be offset by a strong U.S. industrial R&D effort, provided that we make use of it effectively in our defense programs. But we must count on our NATO allies to make up much of the difference, both in research and development and in procurement.

Europe, while willing to cooperate, has called for more of a "two-way street" in defense buying. In response, we have signed memoranda of understanding with many NATO countries to allow fair competition for the alliance-wide defense industry. We are also making major efforts to buy already-developed European equipment for U.S. use where it meets our needs at a competitive price. In addition, we are proposing to the allies that they focus their R&D spending on the production of the best equipment for the Alliance in their areas of specialization.

We are already discussing with the Armament Directors of our NATO allies how to specialize in the next generation of anti-tank weapons, air-to-air missiles, anti-ship missiles, and air-to-ground weapons. In the field of anti-tank weapons alone, the U.S. Army is

planning to develop replacements for the TOW and DRAGON missiles at an R&D cost of about \$250 million each, as well as indirect-fire anti-tank weapons. Anti-tank programs are planned in several European countries. We have proposed, as an alternative, that the United States develop some anti-tank systems, while the Europeans form a consortium to develop others. Each side would agree to make the resulting data packages available to the other for production purposes. This would not only cut aggregate R&D costs (and release resources for other defense purposes). It would allow for consolidation of European production to reduce unit costs -- and provide a degree of cost competition even after production begins, by having two lines, one in Europe and one here.

Finally, we are working on a "Dual Production" program in which we will make our latest existing defense developments available for production in Europe. This will be an alternative both to the purchase in the United States of units by the allies, and to one or more of the European countries developing their own competitive systems. We have already signed agreements on the AIM-9L (heat-seeking air-to-air missile), MODFLIR (night vision devices), and COPPERHEAD (laser-guided artillery shell). We plan to negotiate similar agreements on the STINGER (heat-seeking surface-to-air missile) and PATRIOT (air defense system). R&D savings, reduced unit costs as a result of a single European consortium for each system, and interoperability should all result.

Taken in the aggregate, these three initiatives -- Fair Competition in Defense Procurement, Families of Weapons and Dual Production -- can effect a major improvement in the efficiency of defense R&D and procurement for the NATO alliance as a whole. We will continue them.

Despite this record of progress in planning and procurement, it would be a mistake to pretend that the security of Western Europe is assured. Some of the problems -- particularly those internal to Europe -- do not appear as imminent as they did a year ago. It remains the case, however, that only in Europe is there so direct a confrontation of western -- specifically American -- and Soviet military power. The probability of crisis and conflict remains low, but the importance of the region remains high. Nothing there justifies the view that the claims of defense have declined in urgency, or that the goal of a real increase in the region of three percent a year in spending by the United States and its allies for the defense of Western Europe is any less necessary than it was a year ago.

2. Asia

Asia, like Western Europe, is of vital concern to the United States. Geographically, the United States -- with the Aleutians, Hawaii, and Guam -- extends into the heart of the Pacific. Economically, our trade with Asia grows at enormous speed. In 1977, it reached a total of \$60 billion exceeding our trade with Western Europe.

Japan, now probably the second largest economy in the world in real terms (with a GNP either slightly greater or slightly smaller than that of the USSR), is the major element in that trade. Our trade with Japan probably exceeded \$31 billion in 1978; it is by far the largest between non-contiguous states in history. Some of the problems associated with this trade are also large. But it is worth noting that close and complex ties are being developed as a result of it. Direct Japanese investment in the United States passed \$1.7 billion in 1977, and the Japanese estimate that their combined direct and indirect investment here now exceeds \$4 billion. Japan imports roughly half of its food requirements, and the United States is the largest supplier of those needs, accounting for a third of the total, or \$3.9 billion in 1977. In fact, there is more farm land in production for Japan within the United States than there is in Japan itself.

Japan has also become a bastion of democracy and one of our staunchest allies. As late as 1969, Japanese public opinion polls showed that the Japanese-American Mutual Security Treaty commanded the support of only 44 percent of the public; by 1978, support had risen to 68 percent. Clearly, it is critical to U.S. foreign policy that Japan remain a stable political and economic partner in the coalition of industrial democracies which provides the foundation for western political and economic stability.

That there are dangers in Asia hardly needs emphasis. But conditions there are different from those in Europe. We can, as one example, gradually withdraw our ground combat forces from South Korea -- as we had considered doing for many years -- because of such changed conditions on the peninsula and in the region. South Korea has been transformed into a modern state of impressive economic and military dimensions. North Korea also has developed larger and more modern military capabilities; in fact, those capabilities are probably larger than we previously believed. The exact scope of what has been a decade-long expansion is not yet clear. But it is clear that the expansion has been incremental, with no recent surge in North Korean capabilities.

Of course, the geopolitical situation of the North has changed substantially since 1950 as well. As far as we can tell, neither the Chinese nor the Soviets seem willing to lend support to any North Korean impulse for adventurous aggressive action.

The South, moreover, is far more dynamic, its economic superiority over the North is increasing, and the long-term economic trends are clearly in its favor. During the past decade, Seoul has clearly surpassed Pyongyang in raising labor productivity, absorbing modern technology, and building international financial strength. In that decade, the South's GNP tripled, growing at a rate 50 percent faster than the GNP of the North. The South has also developed the basic industries -- steel, shipbuilding, electronic, and petrochemical -- so essential to the support of a modern defense establishment.

The people of South Korea have done more than perform an economic feat of major proportions. They have also shown an unswerving dedication to the preservation of their independence and territorial integrity. The share of GNP they devote to national defense rose from some four percent in the early 1970s to almost seven percent in 1977, a larger percentage than we or our European allies now spend. In this decade, the South Koreans have taken over responsibility for the entire Demilitarized Zone (DMZ) along the 38th Parallel (with the exception of a small area near the Military Armistice Commission Headquarters Area) and, with their 20 divisions, virtually the entire forward defense of the nation. For some time now, the one remaining U.S. division -- the 2nd Infantry -- has been positioned in reserve. The South Koreans, clearly, are willing to defend their country. In our judgment, they are largely able to do so, given the maintenance of our defense commitments.

We have, nonetheless, been extremely deliberate in shifting responsibilities. We have established a Combined Forces Command, composed about equally of Korean and U.S. military staff, and commanded by a U.S. general, to plan jointly for deterrence and defense on the peninsula. We are helping the Koreans to develop their own capability to design, develop, and manufacture some weapons of their own. In November, 1978, we added a squadron of F-4 fighters from outside the Pacific theater to our USAF tactical air forces stationed in South Korea. And we have kept our schedule for withdrawing ground combat forces from the peninsula under constant review. In fact, the President revised the schedule in April, 1978. All the first 6,000 troops will not have left until the end of 1979 (instead of 1978), and two brigades of the division, along with its headquarters, will remain in place until the final withdrawal in 1981 or 1982. With Congressional approval, we are transferring to South Korea certain key equipment of the departing forces, or its equivalent. Also with Congressional approval, we are continuing to make substantial foreign military sales credits available to South Korea. As a consequence of these steps, South Korea fully cooperates with our programs, and fully recognizes our determination to continue the fulfillment of our security commitments.

Change has also come to other areas of Asia. The friends of the United States have grown more prosperous and united. Meanwhile, the Soviets have not been able to translate their growing military strength into notable political influence. The non-communist states of Asia continue to be wary of Soviet intentions. China and the USSR remain mutually hostile; Soviet relations with North Korea have cooled; even Vietnam, in spite of the recent USSR-SRV Friendship Treaty, is seeking ways to reduce its reliance on the USSR. As the Sino-Soviet dispute has festered, it has drastically reduced the probability that the United States would become engaged in an Asian war against either China alone or the Soviet Union and China together.

The long period of political confrontation between the United States and the PRC has in fact ended. In President Carter's words, we can now "establish normal patterns of commerce, and scholarly and cultural exchange. Through common effort, we can deepen these new ties of friendship between our peoples, and we can jointly contribute to the prosperity and stability of Asia and the Pacific region."

On January 1, our two governments implemented full normalization of diplomatic relations. Embassies will be established and ambassadors exchanged on March 1. Both countries have reaffirmed the principles agreed on by the two sides in the Shanghai Communiqué. At the same time, we will continue to have an interest in -- and expect -- the peaceful resolution of the Taiwan issue. As President Carter has pointed out, the people of the United States "will maintain our current commercial, cultural, and other relations with Taiwan through nongovernmental means," as many other countries are already doing successfully. All arms sold to Taiwan, and now in the supply pipeline, will be delivered. No new commitments will be made during calendar year 1979. Thereafter, the United States will make available to Taiwan arms of a defensive character on a restrained basis. Congress will be asked for legislation establishing the legal basis for any arms supply in the future.

There have also been widespread changes in Southeast Asia. After the collapse of South Vietnam, there were widespread fears that the communist tide would sweep over the rest of Southeast Asia. Cambodia and Laos have indeed gone that way. But for the rest of Southeast Asia, that has not happened. Vietnam, Laos, and Cambodia are in deep economic distress. National feelings and historical enmities have destroyed ideological ties. Large parts of Cambodia have been overrun by Vietnam; tension has risen sharply between Vietnam and China. The non-communist nations of Southeast Asia, by contrast, are enjoying a period of vigorous economic development, and have shown their independence and strength through the increasing vitality of the Association of Southeast Asian Nations (ASEAN). Not only have they demonstrated great political and economic sophistication; they have displayed a remarkable determination to resist outside pressures as well.

Japan has made a fundamental contribution to stability in Asia. Her economic prowess continues and expands. The recently signed treaty of peace and friendship between Japan and China is a mark of her willingness to play an influential role in the region.

The U.S.-Japanese security relationship remains the key element in our Asian security policy. This relationship is fundamentally sound, has enabled the two countries to work in concert, and has permitted Japan to develop significant but purely defensive military capabilities. Even though Japanese defense expenditures remain small as a percent of gross national product, they are now the ninth largest in the world, and they are increasing. The Japanese defense budget for 1977 was \$6.1 billion. Because of changes in the exchange rate (as well as real growth), the total went to \$10 billion in 1978, and the projected figure for 1979 is \$11.2 billion. Growth in constant Yen was 5.5 percent a year.

While we have not urged Japan to expand the size of her self-defense forces, we have encouraged qualitative improvements in Japanese capabilities, and increased complementarity between our forces and theirs -- as, for example, through the purchase of the F-15 fighter and the P-3C anti-submarine warfare aircraft. As a response to the rising costs of maintaining U.S. forces in Japan, the Japanese not only have showed their understanding of the problem; they have taken steps voluntarily to assist in offsetting the increases in these costs. As a result, Japan now contributes substantial financial support for U.S. forces stationed on Japanese soil. Those contributions amounted to an estimated \$565 million in 1977, and are scheduled to increase. Moreover, the Japanese took the initiative to provide \$118 million in 1979 and 1980 for the construction of housing and other facilities on American bases in Japan, plus an additional \$35 million a year to help cover the mounting wage bill for local Japanese employees of the U.S. forces. All told, Japanese contributions, including allowances for the rent-free use of bases, will come to about \$750 million this year. However, the United States will still incur direct annual costs of more than \$1.1 billion for the stationing of U.S. forces on Japanese territory.

Those costs will have to continue. In Europe, the military alignments are clear -- with the Soviets and their satellites on one side, and with the United States and its allies firmly on the other. Soviet military capabilities in Europe are large and focused. The dangers in Asia, though more diffuse, are just as real. Our improvements in Europe cannot and will not be at the expense of our Pacific capabilities.

It is true that conditions in Asia have grown more favorable to our interests than in the past. But the current equilibrium is not necessarily permanent. Soviet military strength in Asia and the

Pacific continues to grow, though at a moderate pace. Changes of fundamental strategic significance in Sino-Soviet relations are unlikely but possible. North Korea remains unpredictable: its military capabilities have grown, and it could disrupt the peace on the peninsula and embroil the great powers. Economic development in the ASEAN nations could still falter. Renewed conflict in Southeast Asia threatens the stability of the area and could further strain Sino-Soviet relations.

In the circumstances, we will continue and strengthen our deployments in the Western Pacific. We are already replacing older destroyers with the new and more powerful DD-963 SPRUANCE class. The PERRY class FFG and the LOS ANGELES class SSN-688 will soon be deploying with the Seventh Fleet, and by early 1980, all four "large deck" aircraft carriers in the Pacific Fleet will carry F-14 aircraft instead of the older F-4J. We have already exercised the E-3 AWACS aircraft in the western Pacific and, beginning in 1980, AWACS will be deployed full-time to Japan. Air Force F-4s will be replaced, in part, by F-15s, beginning in late 1979, and other F-4s several years later by F-16s. Our ability to deploy additional ground forces into the theater will also improve as we expand our strategic airlift capacity. As a consequence, I believe that our forces, in conjunction with allied capabilities, will remain fully adequate to the challenges of the region.

3. The Middle East

What constitutes the area of the Middle East is best left to the geographers. For strategic purposes, it may be considered as the large arc of territory running from Egypt through Iran. Its importance to the United States, whatever its precise boundaries, is well understood. We have deep moral and historical commitments to the independence and territorial integrity of Israel. The United States, Western Europe, and Japan depend heavily on the oil that flows from and transits through the Middle East. We see it as an area that is playing an increasing role in the world economy. We rely on the moderation of key Arab states to check the growth of radicalism in the area.

Stability in the Middle East is essential to the well-being of the United States and the western democracies. Stability, however, is not what the region has enjoyed. For 30 years or more, the Arab-Israeli conflict has dominated the politics of the Middle East. But inter-Arab conflicts have also been common. Disputes have arisen between Libya and Egypt, between Syria and Iraq, between Iraq and Iran, and between North and South Yemen. Internal instabilities have overturned a government in Afghanistan, and are threatening the government of Iran. They have nearly destroyed any semblance of government in Lebanon.

The Soviets have participated actively in the politics of the Middle East. Since so much of their influence has stemmed from arms transfers and the support of extremist groups, it has generally increased the instability of the region. There remains, in addition, the combination of traditional Russian interest in the area of the Persian Gulf and the growing costs of Soviet domestic energy supplies which, under deteriorating regional conditions, could propel the Soviet Union toward various forms of intervention in the Middle East -- moves that would inevitably produce worldwide repercussions.

Despite these dangers, recent events may have contributed to a reduction in the vulnerability and explosiveness of the Middle East. A spectacular, courageous, and essential step in this process was taken by President Sadat with his visit to Jerusalem in November, 1977. Significant Israeli movement followed, and permitted the Arab-Israeli dialogue to begin. Congressional assent to the sale of U.S. aircraft to Egypt, Israel, and Saudi Arabia through the security assistance program undoubtedly contributed to the process by establishing the bona fides of the United States as a friend of moderate regimes in the Middle East.

Both steps helped to bring about President Carter's successful meeting with President Sadat and Prime Minister Begin at Camp David in September, 1978. The agreements reached there between Egypt and Israel, achieved with the active participation of President Carter, constitute the framework for a comprehensive settlement of Arab-Israeli differences. They offer the hope that a turning point has at last been reached in the Middle East.

Much admittedly remains to be done in ensuing negotiations. But as negotiations are pursued on the basis of the Camp David framework, we may legitimately hope that attitudes will change on the issues remaining to be resolved. Progress on an Egyptian-Israeli peace treaty has been slower than we had wished. However, we continue to expect that such a treaty will be completed, and that all parties can move to a broader peace settlement.

President Carter, in his address before a joint session of Congress, noted that no peace settlement will be either just or secure if it does not resolve the problem of the Palestinians in the broadest sense. As Secretary of State Vance has put it, "We believe that the Palestinian people must be assured that they can live with dignity and freedom, and have the opportunity for economic fulfillment and for political expression. The Camp David Accords state that the negotiated solution must recognize the legitimate rights of the Palestinian people."

It is perhaps too much to hope that peace and stability can be reached in the Middle East without further pitfalls and detours. The fighting and the loss of life in Lebanon continue intermittently. The friction between the Yemens threatens further instability on the Arabian peninsula. Revived turmoil in Iran is of the deepest concern. Although significant progress has been made toward an Arab-Israeli peace, many areas of tension remain in the region. Conditions are more stable in most of the region than a year ago, but not by as much as we would like.

4. Africa

Africa is important to the United States because of its geography, because of its extensive natural resources, the growing importance of its states in international forums, and our concern that independence and racial justice be achieved in southern Africa without resort to violence or foreign intervention.

Instability has been common in post-colonial Africa, and this instability has been seriously aggravated by the racial policies of the minority governments in Rhodesia and South Africa, and by Soviet and Cuban military involvement in a series of local conflicts, principally in Angola and Ethiopia. More than 3,000 Soviet military technicians and advisory personnel are now in Africa. However, Cuban troops -- about 37,000 of them -- and a much smaller number of East Germans are the main tools of this widespread intervention.

The United States opposes both racism and outside military intervention in what are internal African affairs. In President Carter's words, "we and our African friends want to see a continent that is free of the dominance of outside powers, free of the bitterness of racial injustice, free of conflict, and free of the burdens of poverty, hunger, and disease. We are convinced that the best way to work toward these objectives is through affirmative policies that recognize African realities and aspirations."

We are striving to create those conditions. We have worked closely with France, Morocco, and others to assist Zaire in restoring order in Shaba province, and in avoiding economic collapse. At the same time, we have insisted that American economic or military assistance to Zaire be accompanied by internal reform, and that Zaire seek better relations with Angola. We have substantially increased U.S. economic assistance to Africa in general, and we hope to increase it still further to deal with the severe economic problems of the continent. In private and in public, we have expressed our strong concern about the destabilizing effects of Soviet and Cuban activities in Africa, and we continue consultations with European, Arab, and African governments that share our concern.

We have worked with the various interested parties in the Rhodesian situation to advance a negotiated solution which would pave the way for true majority rule. Despite our continuing contacts and consultations with the United Kingdom, the governments in the immediate region, and the contending parties, time may be running out for the possibilities of diplomacy.

Together with other Western members of the United Nations Security Council, we have reached agreement on a plan for peaceful transition to independence and free elections in Namibia. Although South Africa has taken steps that we regard as inconsistent with this plan, we remain determined to see Namibia achieve independence in accordance with U.N. Security Council Resolution 431.

We have constructed a solid political base in Africa as a result of our efforts. Our relations with the nations of Africa are better today than they have been in many years. In the words of Secretary Vance, "We are convinced that an affirmative approach to African aspirations and problems is also the most effective response to Soviet and Cuban activities there. Any other strategy would weaken Africa by dividing it. And it would weaken us by letting others set our policies for us."

5. Latin America

As I pointed out last year, Latin America as a whole retains a special importance for the United States. It is a neighbor and a vital trading partner. With Mexico as a major new energy source, more than compensating for a future decline in Venezuelan and Canadian supplies, our economies will become more interdependent. We have a common history: Latin America escaped colonial status, for the most part, only 50 years after we did, and often with the United States as a model. We have had close if sometimes turbulent relations. Our security is intertwined.

No immediate external dangers threaten Latin America at this time. However, problems internal to the region could be exploited from the outside. No better example of the possibility and the consequences exists than in Cuba. The Soviets have gained a foothold there, and the Cubans are now pursuing interventionist policies in Africa. Not only does this behavior create uneasiness and instability abroad; it threatens to prolong the misery of the Cuban people. We and our friends in Latin America have much to learn from it.

We have made a good beginning, I believe, in resolving the issue of the Panama Canal. The Panama Canal Treaties, ratified in 1978, ensure that Panama's sovereignty is respected. At the same time,

they assure our ability to use and protect the Canal. They are a heartening demonstration of how we and our Latin American allies can, in President Carter's words, "work together in a new spirit of cooperation to shape the future in accordance with our ideals, and to resolve all areas of friction in the region by peaceful means."

We are determined to build on the goodwill created by the Panama Canal Treaties so that attention can be focused on economic cooperation and integration, and on strengthening solidarity among the peoples of the Americas. Our policy, as President Carter has emphasized, is based on the premise that U.S. security interests have been enhanced by the growing strength of Latin America and by its expanding role in international affairs. While recognizing that those trends have enabled the governments of Latin America to act more independently of the United States, we welcome them because we believe our long-term interests will be better served by a more balanced relationship.

As one step in that direction, President Carter has signed and submitted to the Senate for ratification Protocol I of the Treaty of Tlatelolco, which establishes a nuclear-free zone in Latin America. The United States has already ratified Protocol II, applicable to nuclear weapons states. Ratification of Protocol I would forbid the deployment of nuclear weapons in Latin American areas for which the United States is responsible (e.g., Puerto Rico, the Virgin Islands, and Guantanamo Naval Base). The Soviet Union has signed Protocol II (Protocol I is not applicable to the USSR) and is in the process of ratification, and France has ratified Protocol II and has announced her intention to ratify Protocol I. Once these ratifications are completed, all concerned nations will have adhered to both protocols.

The treaty in no way affects or limits the rights of innocent passage, or control of transport and transit privileges. This treaty significantly enhances national security by preventing the development of nuclear weapons or their deployment in Latin America. It provides for verification of compliance, and requires IAEA safeguards on all nuclear materials and facilities.

As another step, we are encouraging the limitation of conventional arms in Latin America. Only three percent of all U.S. arms sales now go to Latin America. As our arms supply role in the region has decreased, so have the U.S. personnel available to manage security assistance programs. In fact, our military presence in the area related to security assistance will drop from a high of 769 in 1968 to fewer than 100 in FY 1979. Only Panama will have a security assistance management group of more than six military personnel.

With few exceptions, the Latin American nations have refused to sacrifice their development goals for weapons. Unfortunately, however, this record is under some strain because of the increased cost of modern military equipment. Recognizing this fact, six Andean nations -- Bolivia, Chile, Colombia, Ecuador, Peru, and Venezuela -- joined with Argentina and Panama in 1974 to sign the Declaration of Ayacucho, which stated their intent to cooperate in limiting arms acquisition. At Venezuelan initiative, the foreign ministers of the Ayacucho countries announced in June, 1978, that they wished to explore with other regional countries the possibilities for a region-wide agreement to restrain conventional arms. Mexico subsequently circulated and is actively following up a similar and more detailed proposal at a meeting of the Organization of American States.

The United States fully supports these initiatives and is prepared to work with other suppliers to help ensure that any agreements worked out by the Latin American states are respected. Most of our Latin neighbors do not feel sufficiently threatened to justify a high priority for external defense requirements. It is to our advantage, as well as theirs, to maintain these conditions of stability.

III. Conclusions

At the outset of this review, I indicated that the overriding objective of our foreign policy is to maintain U.S. interests under conditions of international peace and stability. At present, our basic interests remain intact. Perhaps the greatest immediate threat to them comes from economic and monetary forces. It would be a mistake, however, to underestimate the problems created by the military buildup of the Soviet Union. Those problems are real. They are serious. They are continuing. They could become critical -- and if they do, we would regret not having started to build up our own military capability now. It may be too late if we wait much longer.

While the Soviets seem determined to push on with their armament regardless of what we do, we must keep several other aspects of their policy in mind. First, there are matters on which the Soviet leaders continue to cooperate with us. Second, those leaders have shown due caution about the issues on which they commit their power and prestige. Third, though they may try to create opportunities for influence and control, their successes are most likely to come in areas where profound instabilities already exist. Fourth, while it is evident that the Soviet leadership has authorized and encouraged a major military buildup, it does not appear to be an all-out effort.

The Soviets have obviously found what they see as exploitable opportunities in Africa, although it is still too early to judge whether they will establish any more durable a foothold in Angola and Ethiopia

than they did in Egypt, Guinea, and Somalia. Nevertheless, these adventures have created unease elsewhere in Africa and in the Middle East. Aside from that, the prospects for significant gains from relatively modest Soviet investments of assistance and support to sympathizers or dissidents appear to have declined, except in Afghanistan and possibly in Iran. Thanks to events, and the successes of U.S. diplomacy in the Middle East and Latin America, the world does not appear to have grown significantly more turbulent than it was a year ago. International stability is by no means assured, especially in light of current economic and monetary uncertainties, the heavy concentration of Soviet forces in Eastern Europe, and the continuing growth of military capabilities throughout the world. But on the whole I would not characterize current trends as in any way resembling those in evidence before World War II. To the extent that major military confrontations might occur, they are as likely to arise from instabilities in the East as in the West. A desperate Soviet Union could be even more of a problem than a confidently aggressive one.

If this assessment is correct, it has several implications for our defense posture and the allocation of our resources. First, current conditions do not justify complete sacrifice of the fight against inflation, the battle to improve our energy position, or our most critical domestic programs in order to meet increments of defense demand beyond the gradual buildup proposed in the Administration's program. Second, where defense itself is concerned, stability should remain on a par with deterrence among our objectives. That ranking, I should add, is reflected in the Administration's annual Arms Control Impact Statements that are submitted to the Congress.

We will obviously have to continue maintaining three levels of defense capability: strategic nuclear, theater or tactical nuclear, and non-nuclear. We must not allow the Soviets to believe that they can adopt adventurous and aggressive behavior in areas where the stakes are high. But we must avoid acting as though we were engaged in a terminal arms race. Our posture can be basically conservative in nature, designed both to control Soviet actions and to hedge against the main uncertainties of the future. Because we are interested in both deterrence and stability, we need a posture that is not so heavily biased toward one objective that it slights the other.

Even a defense posture with these relatively restrained objectives can absorb substantial resources. We can always make it more modern, more ready, more capable of deploying overseas and sustaining combat. As a consequence, we always have to ask not only how far we should go in those directions, but also how much it will cost to complete the last part of the journey. At some point, a budget constraint must be imposed. The level of effort set for FY 1980 seems entirely reasonable in light of international conditions and our previous investments. But we still must determine whether it actually permits a defense posture and program adequate to the military situation and our defense objectives.

CHAPTER 4

THE PROBLEM OF ASSESSMENT

In the interests of deterrence, we maintain enough strength to repel any attack on the United States or its allies. In the interests of stability, we avoid the capability of eliminating the other side's deterrent, insofar as we might be able to do so. In short, we must be quite willing -- as we have been for some time -- to accept the principle of mutual deterrence, and design our defense posture in light of that principle.

The task is a delicate one, especially when the other side appears to be relatively insensitive to these considerations. To what extent we have been and will continue to be successful in the task depends heavily on military considerations. But judgments about our success will also depend on the system of assessment being used. It is all well and good to say that we want both deterrence and stability. But how do we know when we are strong enough to deter, but not so strong as to drive the other side to actions detrimental to both?

I. DETERRENCE

Deterrence is usually seen as the product of several conditions. We must obviously be able to communicate a message to the other side about the price it will have to pay for attempting to achieve an objective unacceptable to us. We must have the military capabilities necessary to exact the payment (at a cost acceptable to ourselves), whether by denying our opponent his objectives, by charging him an excessive price for achieving them, or by some combination of the two. We must have the plans and the readiness necessary to demonstrate that we can deliver on our "message." We must be sure there is no way for the opponent to eliminate our deterrent capability. At the same time, our deterrent message must have some degree of credibility. That is to say, both we and our opponent must believe there is a real probability that we will indeed perform the promised action, if required.

A number of shorthand ways have been developed for describing the state of our deterrent. The most popular way, much used in the world of sports, is to rate the United States relative to its opponents. You will hear it said that we are Number One or Number Two -- as though we had gone through a series of contests from which, like the New York Yankees, we had emerged as world champions or, like the Los Angeles Dodgers, had lost the World Series after six games.

A variant of this approach is to talk about the balance of power, much in the manner of the 18th century -- as though we were dealing with a set of cosmic scales -- and indicate whether the balance has tilted

toward or against us. The implication seems to be that the United States and the Soviet Union, like two boxers, periodically go to the scales and get weighed.

II. STATIC MEASURES

Since we do not engage in any season of military play with the Soviets, a number of measures have been devised for comparing the United States with the Soviet Union and deciding whether -- if we ever weighed or played -- we would be Number One or Two.

When the strategic nuclear forces are measured, for example, a whole battery of these static indicators is available: numbers of missiles, bombers, and warheads, throw-weight, megatons, equivalent megatonnage, and so on. There are even more complicated measures, such as lethality indices.

The general purpose forces have been subjected to similar if somewhat more aggregate measurements. Numbers of military personnel in the United States and the Soviet Union are compared, although the rules governing the comparisons are neither well established nor applied with an even hand to both sides. Tanks, artillery, armored personnel carriers, tactical aircraft, and ships are added up for the two sides -- and ships are (in some sense) even weighed.

The various comparisons of relative military health or power are frequently made in an historical context. Trends are observed. Judgments follow as to whether the United States is rising or falling in the ratings, whether our side of the scales has gone up or down.

These measures and comparisons are not without interest. Indeed they are necessary. However, unless viewed carefully, they can be extraordinarily misleading when it comes to making judgments about the adequacy of our forces, or how to correct their deficiencies. While we would be fighting alongside allies in most cases, the comparisons frequently omit their forces. They also leave out such crucial variables as objectives, geography, and contingencies. The impression they give is that the United States and the Soviet Union are going to meet on a jousting field, where they will engage in a fight to the finish with all their bombs, bullets, tanks, ships, and aircraft -- possibly with allies, but more likely without them.

Since there is a strong propensity to compare like systems -- tanks with tanks, and destroyers with destroyers -- the comparisons are likely to overlook such considerations as the decision by NATO to counter Soviet tanks with anti-tank weapons, or the effort by the United States in many areas (perhaps mistakenly) to reduce the quantity of its weapons in order to buy individual weapons of very high quality (and cost).

These comparisons can also lead to the conclusion that the way to improve or restore our posture is to make its details a mirror-image of Soviet capabilities. That would be a mistake. The Soviets have built an air defense system that, whatever its utility for them, would be quite unsuitable for the United States. The Soviets, for a variety of reasons -- including the nature of their economy -- have over four million people in their armed forces. It would obviously be foolish for the United States -- with a very different economy, and very different scarcities -- to imitate Soviet personnel policies. The Soviets, in any event, are claimed to have -- and probably do have -- objectives that differ quite substantially from ours. Certainly they face different geography and have different relations with nations on their borders. Presumably, U.S. capabilities should be tailored to our objectives, not theirs.

III. ANALYSIS

The main alternative to these simple comparisons is the use of maneuvers, war games, combat experience, and various analytical techniques to test the adequacy and credibility of our deterrent capabilities. What these approaches assume, in one way or another, is that -- at least hypothetically -- deterrence has failed and forces have been committed to combat. They also assume that if the forces can perform their missions under wartime conditions (or our best estimate of them), and if the missions to be performed are desirable as well as feasible under these conditions, the deterrent must be considered to have a high degree of credibility both in the probability of its use and in its effectiveness. On the other hand, even if the achievement of a mission proves quite feasible to the level of effectiveness deemed sufficient, but the overall consequences are seen as disastrous to the United States as well as its opponent if deterrence should fail, its credibility must be re-examined carefully.

In short, this approach specifies that the way to measure the adequacy of our capabilities -- and to determine our programmatic needs -- is by analyzing hypothetical conflicts and their outcomes. Presumably, if these outcomes are acceptable to us, we can be satisfied with our posture. If the results are unsatisfactory, we should be able to find out wherein the deficiency lies, and remedy it.

There are, I realize, a number of objections to the use of this methodology for the assessment and design of our forces. One of the criticisms is that the technique -- by requiring the use of highly specific and structured conflicts -- does not allow sufficiently for the uncertainties of the present or the future. Some years ago, the difficulty was put in these terms: Suppose that when Lewis and Clark were instructed to explore the West by President Jefferson, they had been confined to preparing for only a few well-specified contingencies; would

they have been able to deal successfully with all the complexities and dangers that they actually encountered on their voyage? The answer, of course, is that Lewis and Clark did think about contingencies, and did prepare for them. That is not the issue. The issue is whether we, like Lewis and Clark, have -- in our preparation -- tested our capabilities hypothetically against a broad enough range of contingencies.

The range of contingencies, fortunately, is not infinite. Our opponents, too, must choose their capabilities; they can do only so many things at once; and there is a quite finite number of places in which they can operate without prolonged and obvious preparations. This does not mean that all uncertainty can be removed from the assessment and planning process. But we can place some boundaries on the uncertainties, and see how sensitive our results and needs are to changes in conditions and contingencies within those boundaries.

The future obviously presents greater difficulties because the uncertainties grow larger and more numerous with time. Nonetheless, we can take some small comfort from the fact that our opponents must face the same uncertainties, so that all of us are likely to find ourselves interacting in an evolutionary way. It is also well to recall that when revolutionary changes do come along -- such as the self-propelled anti-ship torpedo in the late 19th century and the DREADNOUGHT battleship in the early 20th century -- the resources and the time (if sometimes not the wit) can usually be found to manage the change.

All things considered, then, it seems desirable to continue basing our assessments and our planning on the analysis of hypothetical conflicts anchored to specific contingencies that are both conceivable and of vital interest to us. That being the case, it should be evident that when we speak of the balance of power, or of being Number One, we are making those statements in specific contexts. We are not, and do not wish to be, superior to the Soviet Union in the Caspian Sea or Lake Baikal. We do want and intend to be able to defeat any Soviet attempt to sever our sea lines of communication across the North Atlantic and Western Pacific and we want to be able to use maritime forces for power projection. As another example, we and our allies need to be Number One in our ability to halt any attack on Western Europe or other vital areas. Those and other balances are what we must consider and evaluate.

One more consideration must be mentioned. Perceptions of the military balance, correct or not, affect political behavior both of our own nation and of others as well. Instability can result from swings in perceptions, which can be much greater than the changes in the factual situation. The best way to avoid that instability is to avoid, to the maximum extent possible (it is a difficult task) expressing the balance in tendentious terms or, even worse, shading it, whether this be in order to excite alarm or to calm fears.

CHAPTER 5

THE NUCLEAR BALANCE

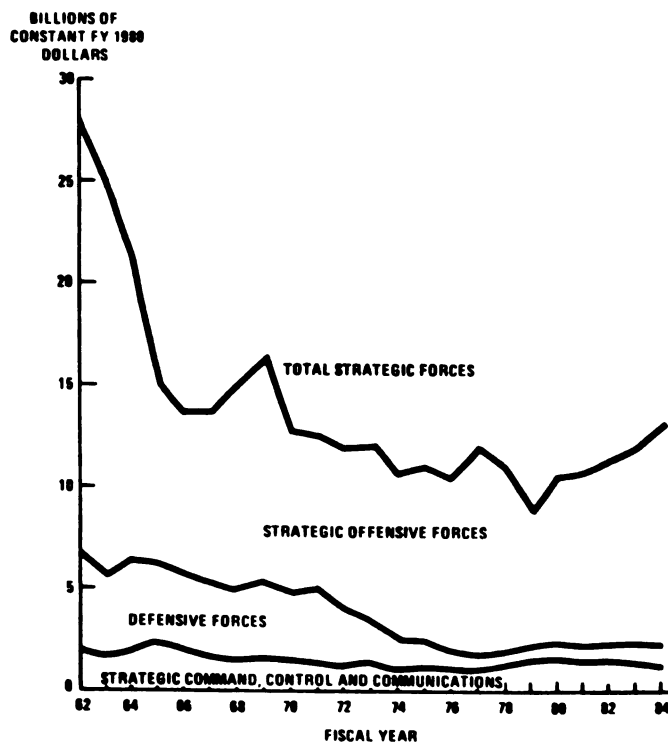
No nuclear weapons have been used in combat since 1945. A two-sided nuclear war has never been fought. It is generally conceded that the probability of a nuclear attack on the United States and its allies is very low at the present time. It is also the case, however, that the consequences of a major nuclear exchange would be so terrible that -- in the absence of complete and verifiable nuclear disarmament -- we must, at all times, maintain strategic forces powerful enough to keep that probability at a comparably low level in the future. We must, at the same time, ensure that our forces do not have characteristics that could make nuclear war more likely.

I. CURRENT U.S. STRATEGIC CAPABILITIES

The past and projected trend in total obligational authority allocated to the U.S. strategic nuclear forces is shown in Chart 5-1. The threat to part of our strategic force is already growing. But our most serious concerns -- which we need to act now to meet -- are about the period of the early-to-mid 1980s. Those concerns derive from the capabilities of the Soviet forces being deployed now and through then.

Chart 5-1

STRATEGIC FORCES BUDGET TREND



During 1979 and 1980, the U.S. ICBM force will continue to consist of 54 TITAN IIs, 450 single-warhead MINUTEMAN IIs, and 550 MINUTEMAN IIIs with MIRVs. We will also begin a program of refitting 300 MINUTEMAN IIIs with the MARK 12A warheads which, in conjunction with the NS-20 guidance improvements (already completed), will give the MINUTEMAN III a higher -- but still modest -- kill probability against hard targets.

The submarine-launched ballistic missile (SLBM) force will consist of 41 submarines. Of these, 10 will carry a total of 160 POLARIS (A-3) missiles, each equipped with multiple re-entry vehicles (MRVs). Another 27 will have 432 POSEIDON (C-3) MIRVed missiles, while four POSEIDON submarines will carry 64 TRIDENT I (C-4) missiles. We anticipate that the first TRIDENT submarine, equipped with 24 TRIDENT I (C-4) MIRVed missiles, will enter service early in FY 1981. Backfitting of the C-4 missiles into an additional four POSEIDON submarines will continue.

The air-breathing leg of the strategic TRIAD will contain unit equipment of 316 B-52 long-range bombers, 60 FB-111 medium bombers, and 615 KC-135 tanker aircraft. As in FY 1979, about 30 percent of the total bomber/tanker force will be kept at a high level of ground alert, and we will have the option to increase the fraction on alert from that steady-state level, should conditions warrant it. We also expect to begin deploying the first of our air-launched cruise missiles (ALCMs) to the B-52 force in September, 1981.

Inventory force loadings -- those independently targetable weapons in our ICBMs, SLBMs, and long-range bombers -- will amount to over 9,000 warheads and bombs.

Our continental anti-bomber defenses will continue to depend on six squadrons of active-duty manned interceptors, and 10 squadrons of Air National Guard manned interceptors. In the future, six Airborne Warning and Control System (AWACS) aircraft will be assigned to CONUS defense. Depending on the nature of an emergency, CONUS-based tactical fighters and additional CONUS-based AWACS aircraft could augment the dedicated anti-bomber defenses. All dedicated surface-to-air missiles (SAMs) have been phased out of the basic CONUS defenses. However, we continue to deploy SAMs from our general purpose forces to sites in Florida and Alaska. In 1976, we deactivated and dismantled our one anti-ballistic missile (ABM) site in North Dakota, which was deployed to defend a MINUTEMAN wing. However, we keep its Perimeter Acquisition Radar operational as a missile warning and attack characterization sensor.

Surveillance and early warning of missile attacks will continue to be based on early warning satellites. The Ballistic Missile Early Warning System (BMEWS) and the PAVE PAWS SLBM Radar Warning System will

provide both radar confirmation of satellite reports and additional attack characterization data. Warning of attacks from air-breathing systems will come from the Distant Early Warning (DEW) line along the 70th parallel, the Pinetree Line in mid-Canada, and CONUS-based radars. Over-the-horizon (OTH) radar will remain in prototype development status.

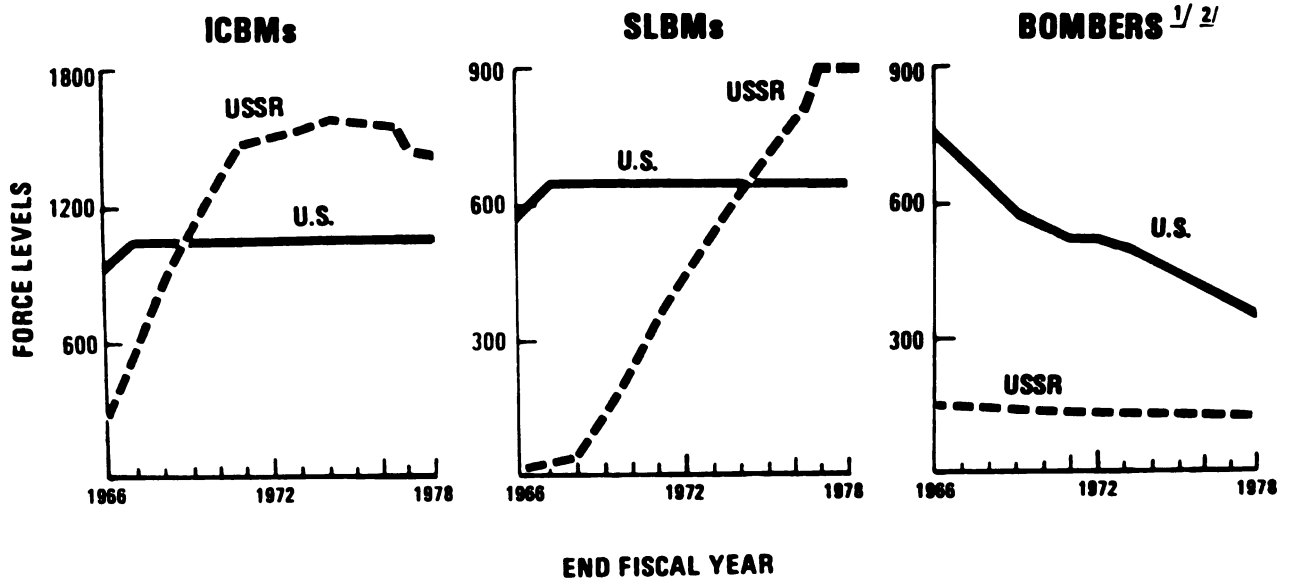
We are reviewing our passive defense programs. In the meantime, a modest civil defense effort will continue to be funded, but through the Federal Emergency Management Agency starting in FY 1980. In addition to continuing crisis relocation planning, shelter surveys, improved communications, and emergency planning, the FY 1980 budget contains about \$15 million for studies of how the existing U.S. personal transportation assets and housing patterns outside of but near urban areas might serve as mechanisms for dispersing the urban population over a period of days or weeks during an extended crisis.

Whether these strategic force capabilities, and current programs for their improvement, are at the appropriate level for strategic deterrence and stability is not an easy issue to resolve. Despite SALT, the competition from the Soviet Union in strategic forces remains strong. The assessment is also made difficult by substantial differences over what measures to use in evaluating strategic deterrence; what Soviet measures and attitudes may be; and what, as a consequence, constitutes sufficiency to deter the Soviets under various situations.

II. SOVIET STRATEGIC CAPABILITIES

The trends in Soviet strategic offensive forces for the last 13 years are shown in Chart 5-2. These forces are at the limits set by the Interim Offensive Agreement of 1972. That agreement froze Soviet ICBM and SLBM levels at the number operational and under construction in 1972. In effect, it permitted the Soviets a strategic missile force of 950 SLBMs in 62 modern submarines and about 1,400 ICBM launchers. In order to build SLBMs within these limits, the Soviets have deactivated a large number of their older SS-7 and SS-8 ICBM launchers.

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



1/ FB-111 and BACKFIRE are excluded.

2/ Excludes approximately 220 B-52s in deep storage.

A. Offense

The Soviet long-range bomber force continues to consist of 150 BISON and BEAR strike aircraft. There are also 125 BISON tankers, BEAR reconnaissance aircraft, and BACKFIRES in the Soviet Long-Range Air Force (LRAF), and additional BACKFIRES in Soviet Naval Aviation. The BACKFIRE bomber has been in production for several years, and current production averages two and a half aircraft a month. We continue to believe that the primary purpose of the BACKFIRE is to perform peripheral attack and naval missions. Undoubtedly, this aircraft has some inter-continental capability in that it can surely reach the United States from home bases on a one-way, high-altitude, subsonic, unrefueled flight; with refueling and Arctic staging it can probably, with certain high altitude cruise flight profiles, execute a two-way mission to much of the United States.

We estimate that total Soviet force loadings (weapons that can be carried by the deployed strategic missiles and bombers) have risen from around 450 in 1965 to 5,000 at the present time. They have increased by around 1,000 since last year, reflecting the MIRVing of ICBMs and SLBMs.

B. Active Defenses

Soviet active defenses have not changed appreciably during the past year. The Moscow ABM defenses, which are more an area than a point defense system, still consist of only 64 GALOSH missile launchers, although the ABM Treaty of 1972 permits expansion of the system to 100 launchers. Anti-bomber defenses continue to depend on about 2,600 manned interceptors and up to 10,000 SAM launchers (which accommodate around 12,000 missiles, since some of the launchers have multiple rails). The Soviets also have a limited anti-satellite (ASAT) capability. The Soviets conducted one test against a target vehicle in 1978.

C. Passive Defenses

The Soviet civil defense program is not a crash effort, but its pace increased beginning in the late 1960s. It is directed by a nationwide civil defense organization consisting of over 100,000 full-time personnel at all levels of the Soviet government, military and economic system. We believe that the combined cost of salaries for full-time civil defense personnel, operation of specialized civil defense military units, and shelter construction amounted to about one percent of the estimated Soviet defense budget in 1976 (with the corresponding figure for the United States at about a tenth of a percent).

The Soviets probably have sufficient so-called blast-shelter space in hardened command posts for virtually all the leadership elements (roughly 110,000 people) at all levels of government, although these shelters could not withstand an attack directed specifically at them. Other shelters at selected key economic installations could accommodate about 25 percent of the total work force. Some 19 million people in all, or about 15 percent of the total population in urban areas (including essential workers), could be given some protection in shelters (based on an allowance of 0.5m² of space per person). We have only limited information about the adequacy of the supplies with which the shelters have been stocked.

About 70 percent of the urban population is defined as non-essential and would presumably have to be evacuated. We estimate that it would take at least two or three days to move them out of most Soviet cities. Evacuation from larger cities such as Moscow and Leningrad could take as much as a week. The required times could be lengthened by shortages in transportation, other bottlenecks, or adverse weather. After evacuation, temporary quarters would have to be found or built for many of the evacuees.

As is shown in Table 5-1, the Soviet program for geographic dispersal of industry is not being implemented to a significant extent. New plants have often been built next to major existing plants. Existing plants and complexes have simply been expanded. In fact, the value of overall productive capacity has been increased proportionately more in previously existing sites than in new areas. Little evidence exists to suggest a comprehensive program for hardening economic installations. The Soviets, at least in their literature, appear to have given greater emphasis to rapid shutdown of equipment and to other measures which could facilitate longer term recovery of installations after an attack.

Table 5-1

Estimated Cumulative Percentage Distribution of Soviet
Population and Industrial Production

<u>Number of Cities</u>	<u>Population</u>		<u>Industrial Production</u>	
	<u>1966</u>	<u>1975</u>	<u>1966</u>	<u>1975</u>
10	8.0	8.7	18.4	17.1
50	17.2	19.6	40.0	38.4
100	22.5	26.0	52.4	51.9
200	28.1	32.9	64.5	65.3
300	31.4	36.6	70.9	72.5

The U.S. and Soviet strategic postures as of January 1, 1979 are shown in Table 5-2.

D. Force Improvements

The Soviets are continuing to modernize their strategic nuclear capabilities. Like our own programs of modernization, these activities are taking place within the limits set by the SALT I agreements.

Table 5-2

U.S. AND SOVIET STRATEGIC FORCE LEVELS

	1 JANUARY 1979	
	U.S.	USSR
	OFFENSIVE	
OPERATIONAL ICBM LAUNCHERS <u>1/</u> , <u>2/</u>	1,054	1,400
OPERATIONAL SLBM LAUNCHERS <u>1/2/3/</u>	656	950
LONG-RANGE BOMBERS (TAI) <u>4/</u>		
OPERATIONAL <u>5/</u>	348	150
OTHERS <u>6/</u>	221	0
VARIANTS <u>7/</u>	0	120
FORCE LOADINGS <u>8/</u>		
WEAPONS	9,200	5,000
DEFENSIVE <u>9/</u>		
AIR DEFENSE SURVEILLANCE RADARS	59	7,000
INTERCEPTORS (TAI)	309	2,500
SAM LAUNCHERS	0	10,000 ^{10/}
ABM DEFENSE LAUNCHERS <u>2/</u>	0	64

1/ Includes on-line missile launchers as well as those in construction, in overhaul, repair, conversion, and modernization.

2/ Does not include test and training launchers, but does include launchers at test sites that are thought to be part of the operational force.

3/ Includes launchers on all nuclear-powered submarines and, for the Soviets, operational launchers for modern SLBMs on G-class diesel submarines.

4/ Excludes, for the U.S.: 3 B-1 prototypes and 68 FB-111s; for the USSR: BACKFIRES.

5/ Includes deployed, strike-configured aircraft only.

6/ Includes, for U.S., B-52s used for miscellaneous purposes and those in reserve, mothballs or storage.

7/ Includes for USSR: BISON tankers, BEAR ASW aircraft, and BEAR reconnaissance aircraft. U.S. tankers (641 KC-135s) do not use B-52 airframes and are not included.

8/ Total force loadings reflect those independently-targetable weapons associated with the total operational ICBMs, SLBMs and long-range bombers.

9/ Excludes radars and launchers at test sites or outside CONUS.

10/ These launchers accommodate about 12,000 SAM interceptors. Some of the launchers have multiple rails.

1. Offense

The deployment of the SS-17, SS-18, and SS-19 ICBMs is continuing at a combined rate of approximately 125 missiles a year. There are now nearly 200 SS-18 launchers in converted SS-9 silos, and about 300 SS-17 and SS-19 launchers in converted SS-11 silos. All three types of missiles can carry either single, high-yield warheads or MIRVs. The SS-17 and SS-18 are designed for cold launch, the SS-19 for hot launch.

The SS-16 is a solid-fuel, three-stage ICBM with a post-boost vehicle (PBV), but armed thus far only with a single warhead. The SS-16 has been designed as a land-mobile missile, but it has not been deployed as a mobile system. It has only been tested once since 1975.

A derivative of the SS-16, the SS-20, is a mobile intermediate-range ballistic missile (IRBM). It consists of the first two stages of the SS-16, is configured to carry three MIRVs, and has a range of well over 3,000 kilometers with that payload. It is already in the field, and will replace or augment the current force of medium-range ballistic missiles (MRBM) and IRBM launchers.

As I noted last year, the Soviets have a fifth generation of ICBMs, consisting of four missiles -- some of which are probably modifications of existing ones -- in development.

We estimate that, in the past, the Soviets have kept a rather small fraction of their ICBMs on what, by our standards, would constitute a quick-reaction alert. Today, a much higher percentage is on alert, as newer missiles come into the force. Soviet long-range and medium bombers do not stand on quick-reaction alert.

The Soviet SLBM force has reached the limit of 950 modern launchers allowed under the Interim Offensive Agreement of 1972, and modernization of the force continues. Construction of the YANKEE-class submarine stopped at 34 boats (540 tubes). The SS-NX-17 solid-fuel missile with a post-boost vehicle, and greater accuracy than the SS-N-6, was backfitted into only one YANKEE submarine.

The Soviets now have a total of around 29 operational DELTA submarines. The DELTA Is and IIs continue to be armed with the SS-N-8, a single-warhead, liquid-fuel missile with a range of more than 8,000 kilometers. The Soviets have begun to deploy the SS-N-18, a liquid-fuel missile installed in the DELTA III. This missile has a range of about 7,500 kilometers, and a post boost vehicle capable of dispensing three MIRVs. With the SS-N-8, the Soviets already have a missile with a greater range than our TRIDENT I. Both the SS-N-8 and the SS-N-18 permit the Soviets to cover targets in the United States from patrol areas in the Barents Sea and the western Pacific.

We believe that, with the advent of the newer, longer range missiles and the elimination of long transits to patrol areas, the percentage of on-station submarines will rise significantly in the near future.

The first prototype of a new, modern, long-range Soviet bomber may be rolled out in the near future. If deployed, this aircraft would presumably replace the aging force of BISONs and BEARs as the backbone of the Soviet Intercontinental bomber force. Both the BEAR and the BACKFIRE can carry air-launched cruise missiles with ranges of about 500 kilometers. As yet, there is no evidence that the Soviets have developed a cruise missile comparable to our ALCM although they may be developing a long-range cruise missile of their own design.

2. Defense

As permitted by the ABM Treaty of 1972, the Soviets continue an active ABM research and development program. The main efforts appear to be going toward improving large phased-array detection and tracking radars, and toward developing a new interceptor. Research work is undoubtedly proceeding on lasers and charged particle beams as well, although there are severe technical obstacles to converting this technology into a defensive weapon system that would offer a capability against ballistic missiles. There is no evidence, furthermore, that the Soviets have yet devised, even conceptually, a way to eliminate these obstacles.

The Soviets have not yet solved the problem of bombers and cruise missiles penetrating their defenses at very low altitudes. They have two operational over-the-horizon (OTH) radars facing the United States, but presumably for early warning of approaching missiles. They have the MOSS aircraft for airborne early warning; they are developing an AWACS-type aircraft with a lookdown radar; they are improving their manned interceptor force with the FLOGGER B (MIG-23); they are working on a modified FOXBAT with a lookdown/shutdown capability; and they continue to develop a new SAM, the SA-X-10, for low-altitude intercepts. However, they have not yet developed a lookdown radar comparable to AWACS or completed the development of the shutdown capability to go with it. Such an AWACS aircraft is unlikely to become operational even in small numbers before 1982, although a lookdown/shutdown fighter with a capability against bombers and fighters could begin to enter the force in 1981.

The Soviets continue to search for a strategic anti-submarine warfare capability. However, the performance of their ASW forces is evolving gradually and remains substantially less effective than that of the United States. The VICTOR-class nuclear-powered

attack submarine (SSN) constitutes the most capable Soviet ASW platform, but neither it nor other currently deployable Soviet ASW systems represent a serious threat to our ballistic missile submarines.

In the realm of passive defenses, the Soviets will probably continue their emphasis on the construction of blast-resistant shelters in urban areas. If this results in a pace of construction matching what has happened since 1968, by 1988 the number of people who could be sheltered (which is not the same thing as surviving) in urban areas could increase to some 30 million -- about 17 percent of what we project the Soviet urban population to be at that time.

III. CHINESE NUCLEAR CAPABILITIES

There are no striking new developments to report in the nuclear programs of the PRC. The delivery force includes liquid-fuel MRBMs, liquid-fuel IRBMs, and more than 80 TU-16 and TU-4 medium-range bombers with operational radii of around 3,000 kilometers.

The PRC has developed a few multi-stage, limited-range, liquid-fuel ICBMs. A full-scale, liquid-fuel ICBM continues under development. Full-range testing has not yet been attempted, but the missile has been used successfully as a launcher of satellites.

There are no new developments in the SLBM program of the PRC. However, we believe that the Chinese are continuing to work on nuclear-powered submarines and solid-fuel missiles.

IV. THE ADEQUACY OF THE U.S. STRATEGIC CAPABILITIES

The adequacy of the U.S. strategic capabilities must be judged primarily in light of Soviet offensive and defensive forces. It must be recognized, in this connection, that Soviet nuclear forces can threaten our friends as well as the United States. If we are unable or unwilling to counter this range of threats in a convincing manner, we must -- at a minimum -- face a growing vulnerability on the part of our friends to threats and blandishments from the other side, and a deterioration in the cohesion of our alliances. The loss of confidence in the U.S. nuclear deterrent could, as one extreme result, lead to heightened and accelerated efforts by other nations to acquire nuclear capabilities of their own, and, as another, to major Soviet political gains.

A. Targeting Issues

This problem has been with us for some time. Not only has it complicated our force planning; in the process, it has raised difficult questions about how the nuclear forces should be used: what should be

the targets for these forces, how many targets should be covered, and under what circumstances, and in what numbers, particular sets of targets should be attacked.

It is tempting to believe, I realize, that the threat to destroy some number of cities -- along with their population and industry -- will serve as an all-purpose deterrent. The forces required to implement such a threat can be relatively modest, and their size can perhaps be made substantially, though not completely, insensitive to changes in the posture of an opponent. In that way, at least our side of the arms race could be ended, since an opponent could never be certain that the threat of city-destruction would not be executed.

Unfortunately, however, a strategy based on assured destruction alone no longer is wholly credible. A number of Americans even question whether we would or should follow such a strategy in the event of a nuclear attack on the United States itself, especially if the attack avoided population centers and sought to minimize the collateral damage from having targeted military installations. (I myself continue to doubt that a Soviet attack on our strategic forces whose collateral damage involved "only" a few million American deaths could appropriately be responded to without including some urban-industrial targets in the response.) Our allies, particularly in Europe, have questioned for some time whether the threat of assured destruction would be credible as a response to nuclear threats against them.

True, bluffing is always possible, and nuclear bluffs may be more difficult to call than most. But if we try bluffing, ways can be found by others to test our bluffs without undue risk to them. Moreover, military postures and plans cannot very well be constructed on the basis of pretense. And Presidents, understandably, will never be satisfied in a crisis to have only one plan -- and such a catastrophic plan as assured destruction. It is little wonder, in the circumstances, that for many years we have had alternatives to counter-city retaliation in our plans, and a posture substantial enough and responsive enough to permit the exercise of these options.

B. Objectives and Measures

I do not wish to pretend, in pointing out some of the problems with a strategy and a posture based on assured destruction only, that anyone has found a way of conducting a strategic nuclear exchange that remotely resembles a traditional campaign fought with conventional weapons. We are not talking here about a Schlieffen working out a great flanking attack on France, or an Eisenhower planning an assault on Germany. We are talking about successive bombardments delivered by

long-range missiles and bombers with nuclear weapons -- weapons that are capable of destroying targets and producing large amounts of lethal radiation, but quite incapable of holding or occupying territory, or even of blockading it.

Admittedly, counterforce and damage-limiting campaigns have been put forward as the nuclear equivalents of traditional warfare. But their proponents find it difficult to tell us what objectives an enemy would seek in launching such campaigns, how these campaigns would end, or how any resulting asymmetries could be made meaningful. We are left instead with large uncertainties about the amounts of damage that would result from such exchanges, about escalation, and about when and how the exchanges would terminate.

These uncertainties, combined with the heavy responsibilities that have fallen on the United States, leave us with a dilemma. We now recognize that the strategic nuclear forces can deter only a relatively narrow range of contingencies, much smaller in range than was foreseen only 20 or 30 years ago. We also acknowledge that a strategy and a force structure designed only for assured destruction is not sufficient for our purposes. At the same time, we have to admit that we have not developed a plausible picture of the conflict we are trying to deter.

One way of escaping the dilemma would be to design our forces on the basis of essential equivalence, assuming we know what is meant by the term. By one definition, U.S. capabilities could be made roughly comparable to those of the Soviet Union in each of such static measures as numbers of delivery systems, throw-weight, and equivalent megatonnage. A more reasonable interpretation demands that judgments be made and would require us to be ahead by some measures if behind in others. However, even that approach mixes together our deterrent strategy with our arms control criteria.

The Soviets have made a great deal of requiring equality with the United States in strategic nuclear forces, and we do not disagree. But since precise equality is impossible to define when the forces of the two sides differ in so many respects, we have adopted the principle of essential equivalence as a surrogate for equality. Among other reasons, that is why the issue of the BACKFIRE bomber has loomed so large in SALT. But to plan our forces, and measure their adequacy, simply on the basis of essential equivalence would give no assurance that the forces would perform their essential deterrent functions. We must insist on essential equivalence with the Soviet Union to symbolize the equality that both sides accept in this realm. But we must not mistake the symbols, however important, for the substance. We may be able to obtain deterrence, and can achieve assured destruction or more, without equivalence; it is by no means certain that equivalence alone will give us deterrence.

There is no obvious solution to our dilemma at this juncture. † As a reasonable minimum (but this may also be the best we can do), we can make sure that, whatever the nature of the attacks we foresee, we have the capability to respond in such a way that the enemy could have no expectation of achieving any rational objective, no illusion of making any gain without offsetting losses. This countervailing strategy has a number of implications. We must have forces in sufficient numbers and quality so that they can: (1) survive a well-executed surprise attack; (2) react with the timing needed, both as to promptness and endurance, to assure the deliberation and control deemed necessary by the National Command Authorities (NCA); (3) penetrate any enemy defenses; and (4) destroy their designated targets.

We must also have the redundancy and diversity built into these forces to ensure against the failure of any one component of the capability, to permit the cross-targeting of key enemy facilities, and to complicate the enemy's defenses as well as his attack. Survivable command-control-communications are equally essential if we are to respond appropriately to an enemy attack and have some chance of limiting the exchange. High accuracy and reduced nuclear yields can be equally important in minimizing collateral damage and the escalation that could follow from it. Even some measure of civil defense evacuation can be desirable, if only to reduce the effects produced by attacks on targets other than population centers.

To have a true countervailing strategy, our forces must be † capable of covering, and being withheld from, a substantial list of targets. Cities cannot be excluded from such a list, not only because cities, population, and industry are closely linked, but also because it is essential at all times to retain the option to attack urban-industrial targets -- both as a deterrent to attacks on our own cities and as the final retaliation if that particular deterrent should fail. The necessary forces should be included in whatever requirements we set for a strategic nuclear reserve following initial exchanges.

The degree to which hard targets such as missile silos, command bunkers, and nuclear weapons storage sites need to be completely covered as part of the list is a more difficult issue. As the growing Soviet threat to our ICBM force indicates, this kind of targeting, by forcing the other side to respond with redesigned capabilities, is bound to affect long-term stability, in what could be (but need not be) a negative way. On the other hand, attacks on these targets would not disarm an enemy in a first-strike (because of his survivable non-ICBM forces), but on a second-strike could suppress his withheld missiles and recycling bombers that could otherwise be used against crucial targets.

One resolution of this issue, in light of the conflicting pressures, would lie, first, in being able to cover hard targets with at least one reliable warhead with substantial capability to destroy the target and, second, in having the retargeting capability necessary to permit reallocation of these warheads either to a smaller number of crucial hard targets, or to other targets on the list. Even with slow-reacting capabilities such as cruise missiles, this would ensure that an enemy's silos are not a kind of sanctuary from which he can shoot with impunity. Uncertainties on the part of each side about the other's capabilities make it likely, I should add, that fixed ICBMs will have to be regarded by both as having, at best, uncertain survivability as we reach the late 1980s (although these uncertainties will affect the U.S. ICBMs earlier).

A variety of other targets warrant inclusion on the list. No enemy should be left with the illusion that he could disable portions of our nuclear forces -- CONUS-based or overseas -- as a preliminary to attacks in specific theaters with his general purpose forces. The latter can and should be targeted. Under many conditions, moreover, they may be more time-urgent targets than residual missiles. So might the command-control, war reserve stocks, and lines of communication necessary to the conduct of theater campaigns. In some circumstances, we might also wish to take war-related industries under attack, especially those decoupled from cities.

I realize that such a list of targets, military and non-military, could be long. It is quite finite, however, and not all the targets on the list would necessarily have to be covered by the strategic forces. I also recognize that the strategy behind such a list is essentially defensive in nature, designed primarily to prevent an enemy from achieving any meaningful objective. Nonetheless, the times and the uncertainties surrounding nuclear deterrence warrant such an approach. With careful design, it ensures that we cover targets of concern to our friends as well as ourselves; and it permits us to respond credibly to threats or actions by a nuclear opponent. No matter what the nature of the attack, we would have the option to reply in a controlled and deliberate way, and to proportion our response to the nature and scale of the provocation.

Equally important, this approach gives a concrete basis on which to assess the adequacy of our strategic forces. It would be inefficient to base those forces on such a conservative definition of the assured-destruction mission that it would provide us with a surplus of warheads in most circumstances (but perhaps of the wrong types) for use against non-urban targets. It would be an equally questionable measure of success to have, after an exchange, a residual capability -- whether measured in throw-weight or warheads -- that is equal to or

larger than the residual capability of the Soviet Union, especially if both nations had been reduced to radioactive rubble in the meantime. The U.S. interest appears to me to lie in a countervailing strategy, the targets that go with such a strategy, and the forces to cover those targets under second-strike conditions.

If our forces are able, with high confidence, to destroy those targets, our deterrent should be adequate to cope with a wide variety of contingencies in as credible a fashion as nuclear weapons permit. Such a deterrent should also retain the confidence of our friends, help to minimize pressures for nuclear proliferation and permit us, with confidence, to resist coercion short of attack.

C. Assessment

In my judgment, we currently have an adequate strategic deterrent by these standards. I believe, moreover, that we can maintain the deterrent for the foreseeable future with the resources we have requested in the FY 1980 defense budget, and in the Long-Range Defense Projection we have developed.

At the present time, our alert bombers, SLBMs on patrol, and a large percentage of our ICBMs are survivable, even in the face of a well-executed Soviet surprise attack, and most of them could penetrate Soviet defenses and destroy their designated targets. The force has the capability to carry out a variety of attacks, and respond at the appropriate level to varied provocations. In particular, we can cover targets of special concern to our allies. Furthermore, the number of surviving warheads would be sufficient in a full retaliation to cover a comprehensive set of targets in the Soviet Union. I do not wish to pretend, however, that current capabilities would give us high confidence of destroying a large percentage of Soviet missile silos and other very hard targets on a time-urgent basis, that is, with ballistic missiles. Nor do I mean to suggest that our retaliatory capability is not effectively matched by that of the Soviet Union. Even after a hypothetical U.S. first strike, the Soviets could retaliate with approximately equal force, although they could not cover an equally comprehensive target list in the United States because of their smaller inventory of warheads. In that sense, a situation of mutual nuclear deterrence prevails at the present time. A reasonable degree of nuclear stability in a crisis is probably assured as well.

Unfortunately, longer-term stability is not fully assured, and the future competition in strategic capabilities is likely to become more dynamic than need be the case. As I pointed out last year, the main impulse for this dynamism comes from the Soviet Union in the form

of a large ICBM force with an expanding hard-target-kill capability, a much publicized civil defense effort, and the likelihood of significantly upgraded air defense capabilities.

These programs make it clear that the Soviets are concerned about the failure of deterrence as well as its maintenance, just as we need to be and are; and that they reject the concept of minimum deterrence and assured destruction only, just as we should and do. That much is understandable. More troublesome is the degree of emphasis in Soviet military doctrine on a war-winning nuclear capability, and the extent to which current Soviet programs are related to the doctrine (which sounds like World War II refought with nuclear weapons).

To say this is not to suggest that the Soviets have any serious prospect of succeeding in this kind of an enterprise. They do not. But if they persist in their efforts, and we do not, they will -- at least hypothetically -- make our strategic retaliatory capability less fully effective than we want it to be. Short of a U.S. response, moreover, they will achieve that result without paying any penalty in resources or in political terms, for causing instability. They might even see opportunities in that case for political intimidation. That cannot be permitted to happen.

There is no prospect that the Soviet Union, any more than the United States, can develop a disarming first strike in the decade ahead -- if the United States reacts to modify its forces appropriately. Similarly, there is no prospect that the Soviet Union, any more than the United States, can -- over the next 10 years -- design a serious damage-limiting capability, if we react. That is simply not in the cards.

What is in prospect is this: the Soviets will have at least the hypothetical capability, in the early to mid-1980s, to destroy a large percentage of our ICBM silos, non-alert bombers, and SSBNs that might be in port; they may also be able to give as much as 10 to 20 percent of their population at least some kind of temporary protection against our retaliation. Even so, we would still have the capability, with our SLBMs on patrol and alert bombers armed with cruise missiles, to deliver thousands of warheads on target in the Soviet Union. In addition, the USSR can never be sure that our ICBM force would not be launched under the attack, increasing the number of U.S. delivered warheads still further.

It is difficult to imagine any circumstances or expectations that would prompt Soviet leaders to undertake such a self-destructive attack. There are, nonetheless, several reasons why it would be unacceptable not to take measures to correct our impending vulnerabilities. Although the total number of warheads in the U.S. force will be increasing with the deployment of TRIDENT and ALCM, the destruction of the ICBM

force could result in a net loss of second-strike target coverage with our forces on day-to-day alert, decrease our ability to attack time-urgent targets, and reduce the flexibility with which we could manage our surviving forces. The threat of such a loss would also undermine our confidence in the strategic TRIAD, and quite possibly encourage the Soviets to strive for a similar success against our other second-strike capabilities.

I realize that, quite apart from the implausibility of a Soviet first strike in these circumstances, a number of questions have been raised about the feasibility of executing a successful attack on our ICBM force. In fact, I pointed out some of the difficulties in this report a year ago. It is equally important to acknowledge, however, that the coordination of a successful attack is not impossible, and that the "rubbish heap of history" is filled with authorities who said something reckless could not or would not be done. Accordingly, we must take the prospective vulnerability of our ICBM force with the utmost seriousness for planning purposes. Even where the probability of an event seems low, it may (depending on how costly the effort) be worth reducing still further when the consequences of its occurrence are so great. A focus of our planning, in these circumstances, is on how to deal with this problem. SALT II will leave open all options.

I should note, in this connection, that a criticism of SALT is that it has failed to remove or postpone significantly the vulnerability of MINUTEMAN. That criticism is unwarranted. SALT cannot be expected to solve all our strategic problems for us. But as it proceeds, SALT can continue to contribute to stability and ensure, where the problems are too knotty for the bilateral process, that we retain the freedom to solve them unilaterally. SALT II will permit us to do just that.

While I have emphasized the impending vulnerability of our ICBM force, it is not the only problem that will face us in the years ahead. We must be concerned about the aging of our bomber and SSBN capabilities. We must also recognize that our current civil defense program can do little to limit collateral damage even should the Soviets not attack urban areas directly. If our limited, second-strike, response options are to be fully credible, our friends as well as our opponents must understand not only that we can use our strategic forces in a deliberate and controlled way against meaningful targets, but also that people at risk in potential target areas in the United States can be evacuated and protected, at a minimum, from the short-term effects of nuclear weapons.

Clearly, we have a number of tasks ahead of us. I am confident that the FY 1980 defense budget and the Long-Range Defense Projection, as currently visualized, will enable us to get on with those tasks at an acceptable pace.

V. THE THEATER NUCLEAR CAPABILITIES

As I emphasized last year, our theater nuclear forces do not constitute a full-fledged and independent capability. They are, for the most part, organic to the general purpose forces. The longer range systems are integrated in targeting with the central strategic forces, many of which are programmed against theater targets. Thus, should their weapons be released, our theater nuclear forces would probably be used in conjunction with regular ground, tactical air, naval, and in many cases strategic forces.

A. Current U.S. Capabilities

The PERSHING missile is the only U.S. delivery system currently dedicated solely to the tactical use of nuclear weapons. For the rest, we rely on dual-purpose artillery, missiles such as LANCE and HONEST JOHN, aircraft, surface ships, submarines, and SAMs -- systems with a non-nuclear capability -- to deliver our theater-designated weapons.

Of the nuclear weapons allocated to tactical use, about 7,000 are in the European theater. In addition, a significant number of PCSEIDON RVs are formally committed to NATO, as well as the considerable nuclear capability of our aircraft carriers and other naval vessels. A large percentage of the U.S. warheads in Europe are deployed under Programs of Cooperation (POCs). These bilateral agreements between the United States and other nations involve the transfer of nuclear-capable delivery vehicles or the deployment of nuclear weapons to host countries. Host nations provide support for U.S. weapons and weapons provided for their use. All nuclear weapons remain in U.S. custody until they are released by the President.

These weapons include atomic demolition munitions (ADMs), artillery projectiles, bombs, depth charges, and missile warheads. Some of their yields exceed the lowest yields of warheads carried by our strategic delivery vehicles. There is, in fact, no such thing as a weapon whose yield makes it intrinsically a tactical nuclear weapon; there are only nuclear weapons delivered against strategic and tactical targets.

The costs of these capabilities are small compared with the costs of our strategic forces. We continue to estimate them at roughly \$2 billion a year, including the investment costs of the nuclear weapons themselves. These latter costs appear largely in the budget of the Department of Energy, and account for about half that total.

B. Soviet Capabilities

Judgments about the adequacy of our theater nuclear forces will be affected strongly by the role given to them in deterring Soviet nuclear or conventional attacks. These judgments, in turn, are affected by the counterpart capabilities of the Soviet Union. The Soviets, by now, have deployed a large number of theater nuclear delivery systems, and we believe they have stockpiled sufficient warheads to support these systems.

The Soviets, like us, have relied on dual-capable systems for much of their tactical nuclear delivery capability. Some of their artillery weapons are capable of delivering nuclear projectiles, and we believe that their more modern fighter/attack aircraft -- the SU-17 (FITTER C/D), FENCER, and some versions of the FLOGGER (MIG-23 and MIG-27) -- are also dual-capable. The Soviets, more than the United States, have emphasized specialized (single-purpose) nuclear delivery systems organic to their general purpose forces, and in much larger numbers. They have launchers at divisional and higher levels, consisting of the FROG series, the SCUD B, the SS-12 SCALEBOARD, and two follow-on systems -- the SS-21 replacement for the FROG, and the SS-22 missile for the SCALEBOARD launcher. Many of these missiles are longer in range than their counterpart NATO systems.

The other members of the Warsaw Pact also have FROG and SCUD launchers as well as some nuclear-capable aircraft. However, the nuclear warheads for them remain under Soviet control. All members of the Warsaw Pact continue to equip and train their forces to fight in both chemical and nuclear environments. They also continue to improve their capabilities for the conduct of chemical warfare.

In addition to these capabilities, the Soviets maintain large, nuclear-capable, peripheral attack forces based in the Soviet Union. These forces include medium-range bombers (in addition to the BACKFIRES discussed previously), MRBMs and IRBMs (including initial deployments of the new, mobile, MIRVed SS-20 ballistic missile), and older submarines armed with ballistic and cruise missiles. While the Soviets have deployed nuclear capabilities in the Far East, most of their peripheral attack forces appear to be oriented toward Western Europe. NATO, by contrast, has few theater nuclear systems that can reach these Soviet forces. Coverage of the Soviet peripheral attack forces would have to come primarily from the U.S. strategic capabilities, as NATO recognized some time ago.

None of the Soviet peripheral attack systems are now included in either the SALT or the MBFR negotiations. NATO forces of comparable range are involved, however: GLCM and SLCM in the SALT Protocol, and dual-capable aircraft and PERSHING in NATO's MBFR Option III proposal.

Soviet military doctrine continues to stress the likelihood that any clash in Europe would escalate to nuclear warfare. Indeed, Soviet military authorities seem to see combined nuclear-conventional operations as essential to the successful conclusion of any future campaigns against NATO. However, some recent doctrinal writings have adopted the view that even a conventional war in Europe need not necessarily lead to a nuclear exchange. And lately, there has been mounting evidence of a recognition by the Soviet military that such a war could have an extended conventional phase. Nonetheless, these authorities continue to stress the destruction of our tactical nuclear forces at an early stage of a European conflict.

C. Objectives

It is generally agreed in the United States that while theater nuclear capabilities are no substitute for non-nuclear capabilities, they have critical symbolic and deterrent functions of their own. These capabilities permit us to exercise nuclear options without immediately having to resort to strategic nuclear forces. At the same time, by increasing the risk of escalation, they link the theater with the U.S. strategic nuclear forces. In sum, the United States fully supports the NATO strategy of flexible response and forward defense, and remains committed to the continued overseas deployment and modernization of its theater nuclear forces.

That commitment is not in question. But whether current deployments and programs are adequate in light of Soviet capabilities has become increasingly the subject of debate both here and in Western Europe. At issue, basically, is whether these capabilities deter over a broad enough range of contingencies. At one end of the range of possibilities, they could be configured as a mirror-image of the Soviet peripheral attack and theater nuclear capabilities, independently of the targets the U.S. strategic forces might cover. They might also be configured to provide cross-coverage of some deep targets. As another possibility, they could be designed primarily to deal with attacking field forces, and emphasize short-range and medium-range systems.

Current U.S. and NATO theater nuclear capabilities obviously do not fit the extremes. With few exceptions, their range is too short for them to reach the Soviet peripheral attack forces, but their numbers go well beyond what might be considered sufficient to trigger escalation. For now, I do not see any basis for changing either their functions or their capabilities relative to other NATO forces, but I believe the question needs more attention.

The Soviets, for at least 20 years, have maintained a large nuclear threat pointed at Western Europe with their SS-4 and SS-5 ballistic missiles and their medium-range BADGER bombers. The deployment

of the SS-20 missile and BACKFIRE bomber does not initiate -- though it modernizes and expands -- the threat. That threat has been and remains a grim fact of international life. If the Soviets should decide to commit the ultimate barbarity and destroy Western Europe, they could do it -- just as they could at any time destroy a large part of the United States. In either event, retribution would surely follow.

It is not possible to design against such madness; we can only attempt to deter it. That is why some degree of retaliatory capability against deep (especially military) targets can be usefully based in the theater as insurance and as assurance of a nuclear continuum. Accordingly, we and our NATO allies are carefully examining the adequacy of our longer-range theater nuclear capabilities, as well as considering how arms control can be of benefit in limiting the threat. However, we are not considering any dramatic changes that would alter the role of long-range theater nuclear forces in NATO's overall posture.

We must remain equally skeptical about small-scale nuclear demonstrations as the sovereign remedy -- to be followed, if they do not work, by all-out nuclear exchanges. The capability for a small-scale demonstration should be preserved. But as long as the tactical nuclear forces are to serve as a major deterrent, they must be able to perform serious military missions. Such missions can be generally described as:

- Limited nuclear options designed to permit the selective destruction of fixed enemy military or industrial targets;
- Regional nuclear options intended, as one example, to destroy the leading elements of an attacking enemy force; and
- Theaterwide nuclear options directed at aircraft and missile bases, lines of communication, and troop concentrations in the first and follow-on echelons of an enemy attack.

D. Assessment

Our deployed tactical nuclear forces are being modernized to ensure that they remain adequate in terms of delivery systems and nuclear weapons stocks to execute a broad range of options. However, in the face of improving Warsaw Pact forces, we must be alert to the possibility that the Soviets might seek a first-strike capability with their theater nuclear or even their newly acquired conventional aircraft delivery capabilities.

U.S. and NATO strategy allows for a possible NATO first use of nuclear weapons, if that should prove essential. But the Soviets might pre-empt us. For our forces to serve their deterrent functions not only must we give them options suitable to their tactical missions, and the delivery systems capable of precise and discriminating attacks on battlefield and deep targets; we must also be able to enhance their survivability and ensure their capabilities for target acquisition and command-control-communications.

We will continue to review the adequacy of our theater nuclear posture in light of the Soviet emphasis on peripheral attack and tactical nuclear capabilities, and the availability of new systems such as PERSHING II (including its extended range version) and ground-launched cruise missiles (GLCM). But the continued forward deployment of the theater nuclear forces cannot and will not be at issue. As far as the United States is concerned, NATO needs its own TRIAD (different from the U.S. strategic force TRIAD). The NATO TRIAD must contain strategic nuclear, theater nuclear, and non-nuclear forces at its collective disposal to assure the security of Western Europe. Our friends in Asia must also be supported by the U.S. nuclear guarantee. It remains the firm policy of the United States to maintain our nuclear contribution to the mix.

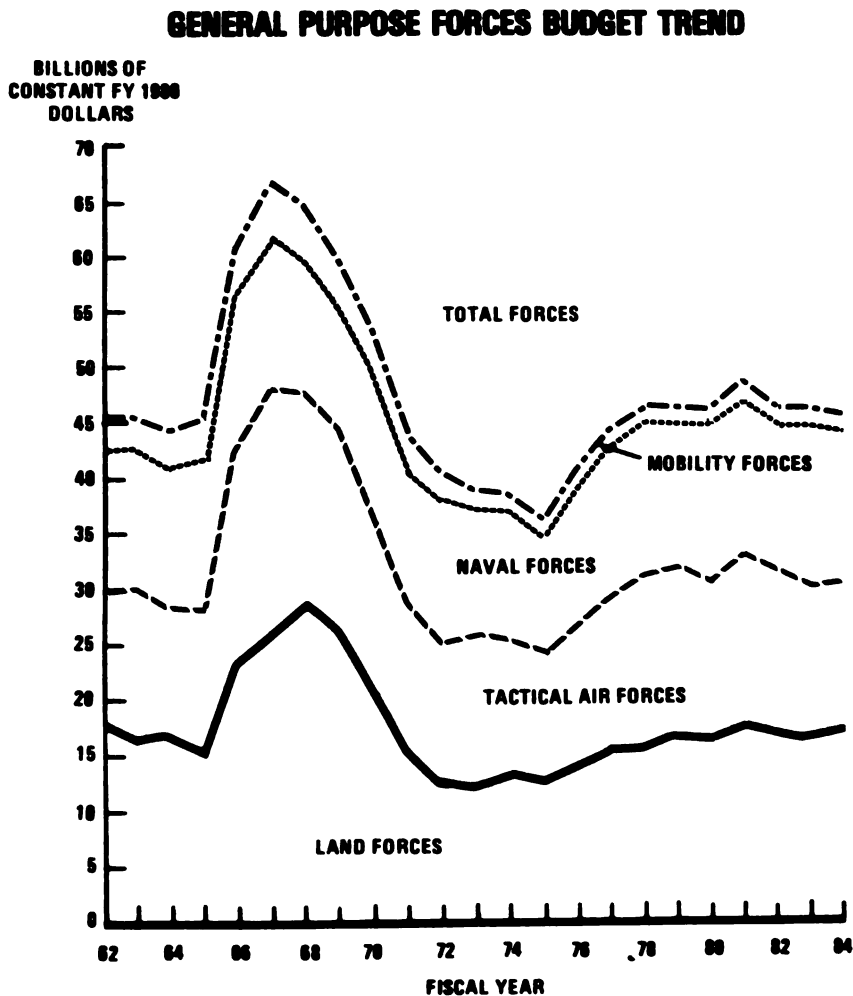
CHAPTER 6

THE NON-NUCLEAR BALANCE

Although we like to call this the nuclear era, non-nuclear forces are the real cutting edge of our military power. Nuclear relationships understandably exercise a fascination over our analytical community. For one thing they appear easier to analyze, at least at first glance. But the state of the non-nuclear balance is the most critical immediate military determinant of world peace and security. Nuclear warfare, thus far, remains a deadly abstraction; non-nuclear conflict is -- sadly -- an almost daily fact of life.

For these and other reasons, we continue to maintain substantial and costly general purpose forces, most of which are designed for the deterrence and conduct of non-nuclear warfare. Chart 6-1 shows the trend in TOA allocated to the general purpose forces since FY 1962.

Chart 6-1



I. SOVIET CAPABILITIES

Judgments about the adequacy of the general purpose forces are strongly affected by our estimates of Soviet conventional capabilities. Those capabilities are, of course, substantial.

In the mid-1960s, Soviet land and tactical air forces consisted of about 1.4 million men. We believe that they have now expanded to over two million men, not including 450,000 border guards and internal security units of an essentially military character. Much of this expansion has resulted from the Soviet military buildup in the Far East, which went from 20 divisions and 210 fighter/attack aircraft in 1965 to well over 40 divisions and more than 1,000 fighter/attack aircraft in 1978. However, approximately 150,000 men have also been added in the past ten years to the Soviet forces stationed in Eastern Europe, including the 70,000 men and five divisions deployed in Czechoslovakia since 1968.

During the last 13 years, the Soviets have increased the total number of their divisions from 148 to over 170, added about 1,300 aircraft and 24 regiments to their tactical air armies, and expanded not so much the numerical size as the capacity of their long-range airlift. Soviet naval forces have declined somewhat in numbers during this period, but their quality has increased. The chemical warfare capabilities of the theater forces have also been improved.

A. Ground Forces

Soviet ground forces consist of roughly 1.8 million men, in contrast to the U.S. Army and Marine Corps which contain just under a million men and women. Since the Soviets maintain over 170 divisions compared with our 19, it is evident that their division forces (or slices) are much smaller than ours. Furthermore, the Soviets keep most of their divisions at less than full combat readiness. Only about a third of them are fully-equipped active units deployed primarily in Eastern Europe or along the Sino-Soviet border. The remaining two-thirds are at reduced or cadre strength. They have varying percentages of active-duty personnel and equipment assigned to them.

In addition to the divisions in the Far East, there are over 100 divisions stationed west of the Urals.

The Soviets began expanding the size of their tank and motorized rifle divisions in the mid 1960s. At the same time, they started adding to their non-divisional combat capability (at Army and Front levels), and modernized their weapons and equipment, most notably in the Group of Soviet forces in Germany (GSFG). Since the 1960s, about 1,000 men have been added to the authorized strength of the tank divisions, and 1,500 to the authorized strength of the motorized rifle

divisions. In the GSFG, at least, modern tanks and self-propelled artillery, new anti-tank guided missiles and armored personnel carriers, attack helicopters and organic air defenses have been provided in quantity. About half of the tanks in the GSFG are the relatively modern T-62, and the T-64 has been deployed to replace older tanks. A large number of the T-72 and T-64 tanks have been produced. The T-72 is now being deployed to ground units in the Soviet Union, but it is also expected to be the major Soviet export and co-production tank. The BMP, an armored fighting vehicle rather than an armored personnel carrier (APC) makes up about half of the combat troop vehicles in the GSFG. The newer artillery consists of heavy, mobile, multiple rocket launchers and the self-propelled armored versions of the 122mm and 152mm guns. Organic air defenses now rely on the S-60/57mm anti-aircraft gun, the ZSU-23/4 fully tracked, radar assisted anti-aircraft gun, and five types of mobile or man-portable surface-to-air missiles.

Although the GSFG has undergone impressive changes, its exact level of readiness and sustainability remains uncertain. At any one time, about 20 percent of the enlisted personnel are recruits who are rotated into the divisions every six months, and most of their basic training takes place within the divisions themselves. The Warsaw Pact logistic system could become a serious weakness, depending upon the ability of NATO to exploit it.

As I emphasized last year, we should not attach too much significance to these considerations. The Soviets appear confident -- and rightly so -- that they need not be prepared for a surprise attack by NATO. Being able to choose their own time for an attack, and having the tactical initiative, mean that they could repair most of these deficiencies at their convenience.

B. Tactical Air Forces

Soviet Frontal Aviation is organized into 16 air armies with 109 regiments and six independent squadrons. Of the 16 air armies, four are based in Eastern Europe. The others are stationed in various military districts in the Soviet Union.

The total fighter/attack, electronic countermeasures (ECM), and reconnaissance force consists of approximately 4,500 first-line combat aircraft. In addition, some 500 BADGER/BLINDER medium-range bombers and BACKFIRES from Long-Range Aviation could conceivably be used for conventional operations.

The Soviets have continued to modernize their air armies with late-model MIG-21s (FISHBED), MIG-23s and MIG-27s (FLOGGER B and D), SU-17s (FITTER C and D), and FENCER. About 80 percent of the fighter/attack force in Frontal Aviation now consists of these aircraft; the

proportion is expected to increase steadily through the mid-1980s. Because of their ranges and payloads, these aircraft give the Soviets -- for the first time -- the capability to attempt deep air superiority and interdiction missions with nuclear or non-nuclear munitions, which enhance their capability to attack targets such as command centers, nuclear storage sites, stockpiles of ammunition and equipment, and many of the maritime and aerial ports in Europe. However, I must stress that Soviet avionics, munitions, pilot training, and flying time do not approach U.S. standards.

C. Naval Forces

The overall size of the Soviet general purpose naval forces has not changed significantly since last year. The ocean-going surface combatant force consists of: two KIEV-class light, VTOL, guided missile carriers -- one in operation, one undergoing sea trials, and a third under construction; two MOSKVA-class aviation cruisers; and 266 other surface combatants, including 20 with anti-ship missile launchers. What could be a nuclear powered cruiser displacing over 20,000 tons is being fitted out in the Baltic. Construction continues on KRIVAK-II and GRISHA class surface combatants.

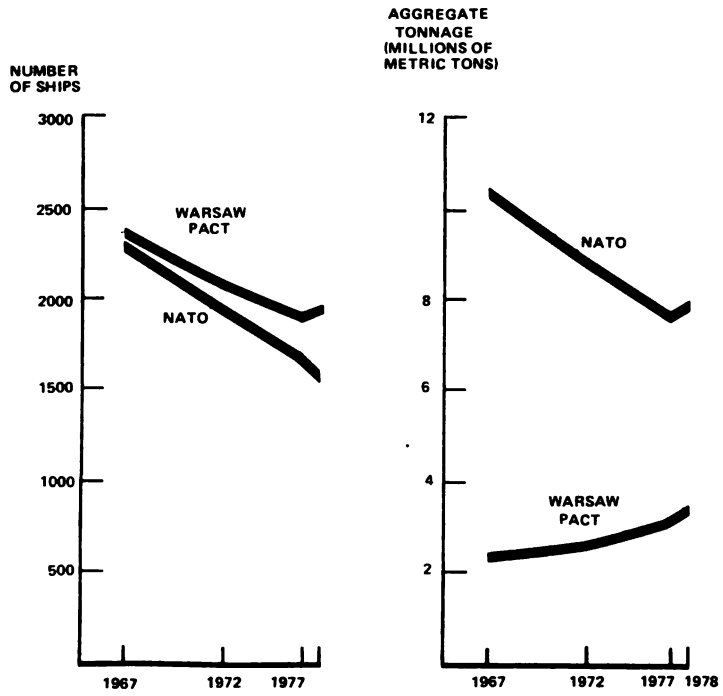
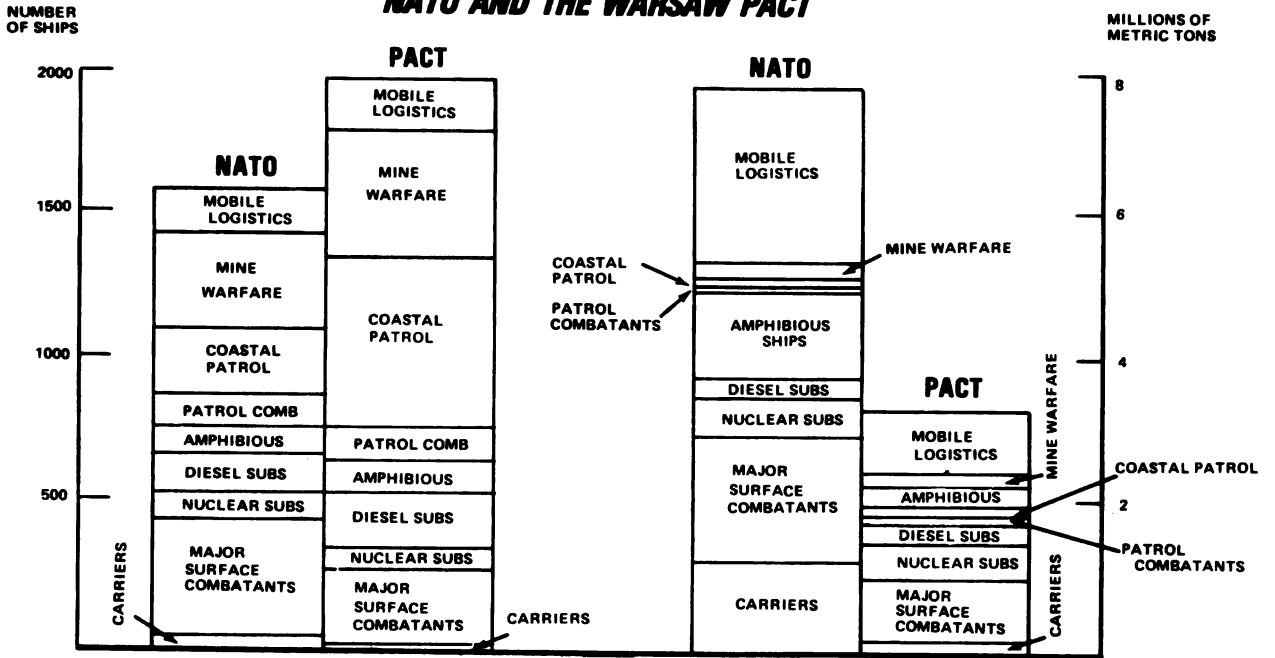
The general purpose submarine force (excluding SSBs and SSBNs) consists of 195 attack submarines and 65 cruise missile submarines the majority of which are nuclear powered. Submarine production emphasizes evolutionary improvements rather than revolutionary change.

The Soviets now have 101 amphibious ships, of which 25 are capable of extended operations and open-ocean transit. A new amphibious ship of about 13,000 tons, the IVAN ROGOV Amphibious Assault Transport Dock (LPD), has now completed sea trials. It will probably accommodate an infantry battalion as well as air cushion landing craft in its well. New construction of amphibious ships, however, continues at a modest level. In addition, the Soviet merchant marine has the capability to support overseas operations, especially with roll-on/roll-off ships, of which at least 25 are now in service. Estimated Soviet naval infantry consists of about 12,000 men.

Direct support to the fleet comes from 85 replenishment ships. There are 215 other major auxiliaries in support of the fleet.

Trends in the number and tonnages of the NATO and Warsaw Pact navies (with ballistic missile submarines and their supporting vessels excluded) are shown in Chart 6-2.

GENERAL PURPOSE NAVAL FORCES OF NATO AND THE WARSAW PACT



- NOTES:
- MOBILE LOGISTICS SHIPS INCLUDE ONLY THOSE AUXILIARIES WHICH PROVIDE UNDERWAY REPLENISHMENT OR DIRECT MATERIAL SUPPORT TO UNITS OPERATING AWAY FROM HOME BASE. A NUMBER OF OTHER AUXILIARY TYPES ARE NOT INCLUDED IN THESE TOTALS.
 - DISPLACEMENTS SHOWN ARE FULL LOAD FOR SURFACE SHIPS AND SUBMERGED FOR SUBMARINES.

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The Soviets assign around 350 of their medium bombers to Naval Aviation, including BACKFIRES. These aircraft will be able to attack ships with air-to-surface missiles at extended distances from their home bases. Chart 6-3 shows the operating radius of the BACKFIRE on an anti-shipping flight profile. In addition, there are 60 fighter-bombers assigned to Soviet Naval Aviation.

Chart 6-3

SOVIET BACKFIRE OPERATING RADIUS (ANTI-SHIPMING MISSION PROFILE)



The distribution of major ships, submarines (excluding SSBNs), and combat aircraft among the four Soviet fleets is shown in Table 6-1. The Northern and Pacific Fleets continue to include in their missions defense against U.S. aircraft carriers and interdiction of the major shipping lanes. However, we still estimate that the Soviets give the highest naval priority to ASW against ballistic missile submarines and that the KIEV class guided missile VTOL aircraft carrier was designed primarily for this purpose. The KIEV is assigned to the Northern Fleet.

Table 6-1

Distribution of Soviet Navy - 1978

	<u>Northern Fleet</u>	<u>Baltic Fleet</u>	<u>Black Sea Fleet</u>	<u>Pacific Fleet</u>	<u>Total</u>
General Purpose Submarines					260
Nuclear					80
Non-Nuclear					180
Surface Warships	68	48	81 <u>1/</u>	73	270
Amphibious Warfare Ships					101
Naval Aviation					1,310
Bombers <u>2/</u>	80	130	105	95	410
Other Aircraft <u>3/</u>					900

1/ Includes frigates in the Caspian Sea Flotilla.

2/ Includes strike, bomber, and fighter-bomber aircraft.

3/ Includes ASW/patrol, reconnaissance/EW, tanker and VTOL aircraft and helicopters.

The KIEV class carriers, with their vertical takeoff and landing (VTOL) aircraft, HORMONE helicopters, long-range anti-ship missiles, and ASW weapons, could engage in general sea control as well as power projection missions. They can already provide a limited amount of protection to Soviet sealift in distant operations, and they could afford a modest amount of air cover for amphibious assaults. Whether this capability will be substantially expanded in the future is still uncertain.

II. OBJECTIVES

While these capabilities are impressive, we must not exaggerate them. As Table 6-2 shows, NATO has greater economic resources and a larger population than the entire Warsaw Pact, and nearly as many people under arms. At the same time, the richer alliance -- richer by almost a factor of three -- is poorer in tanks, armored personnel carriers, artillery tubes, rocket launchers, and even slightly in combat aircraft (with air defense interceptors included).

Table 6-2

NATO AND WARSAW PACT RESOURCES

	<u>NATO</u>	<u>Warsaw Pact</u>
GNP (\$ Billions)	3,773	1,396
Population (Millions)	564.0	368.2
Military Manpower (Millions)	4.8	5.2

The static comparisons of NATO and Warsaw Pact assets have led some (wrongly, in my view) to quite opposing conclusions. The first is that we cannot hope to deal with this massive Pact capability by conventional means, and must resort to a nuclear defense. The second is that, while we can manage the problem, we must somehow match the Warsaw Pact in all military categories if we are to have adequate forces.

A. Contingencies

Neither of these conclusions has much merit. As I have already stressed, our concern with the balance of power and the adequacy of our forces is not an abstraction and cannot be properly portrayed in some worldwide balance sheet. We are interested in the balance of power and the adequacy of our forces at those specific points where our interests could be jeopardized.

Our interests, admittedly, are worldwide, and we cannot deploy great power everywhere at once, except at unacceptable cost. But neither can the Soviet Union. In some classical, geopolitical sense, the Soviets may enjoy interior lines of communication, and may be able to move their forces around more easily than we and our allies can. However, their interior lines of communication do not give them any great advantage because of the weaknesses in their transportation system.

These problems aside, many of the Soviet forces are tied down by security concerns of their own, and therefore are quite static in their missions. Units, obviously, could be moved from the border of the PRC to Eastern Europe. But such a move would take time and involve risks; and it would permit us to reinforce our own capabilities.

We must include the forces of Soviet satellite countries in our calculations, but the Soviets must include those of our friends in theirs. The Soviets have concentrated large forces in Eastern Europe and its immediate vicinity, and their satellites facing West Germany (East Germany, Czechoslovakia, and Poland) could, in the short-run,

provide additional divisions and tactical aircraft, although their political reliability may be open to question. After long and arduous efforts, the Soviets have developed another and lesser concentration of force in the Far East. But they would be hard put to achieve a comparable concentration elsewhere without a major and time-consuming mobilization. And they would probably encounter severe difficulties -- without further and large-scale preparations -- in trying to launch major and sustained offensive operations in two widely separated geographic theaters.

A two-front war is not an attractive prospect even for the United States, although we conducted simultaneous campaigns in Europe and the Pacific during World War II. But historically, such a possibility has been anathema to Russia. Thus, while it is true that the Soviets have general purpose ground forces of 1.8 million men and over 170 divisions, it is highly unlikely -- short of a full-scale mobilization to which we could respond -- that we would see all of those forces concentrated in a single theater of vital interest to us. It is almost equally unlikely that we would see all of those forces engaged in simultaneous offensive operations in two vital theaters. The threat that counts, in other words, is not necessarily the full inventory of Soviet conventional capabilities, but the forces that actually can be used at any given time to threaten our interests.

In measuring the adequacy of our non-nuclear forces, not only must we explicitly take these considerations into account; we must also remember that the burden of responding to the threat will rarely fall on the United States alone. In fact, I consider a conventional conflict with the Soviet Union that does not involve U.S. allies quite incredible. We frequently complain about the burdens of our commitments; we rarely count their benefits. Yet in Europe, our allies provide the bulk of the day-to-day defenses and help with the support of our deployed forces in a number of ways. A similar spirit of cooperation prevails in the Far East. Where nuclear deterrence is concerned, we shoulder virtually the entire responsibility; in the case of non-nuclear defense, a genuine system of collective security, for the most part, exists. Accordingly, when we consider the non-nuclear balance and the adequacy of our forces, the contribution of allies is as important in our measurement as the location of the balance and the time at which we measure it.

B. Strategic Concept

An attempt to put the non-nuclear problem into perspective should not mislead us into believing that the problem is simple or easily solved. It is not. The world, unfortunately, is rich with dangerous contingencies, some of which could occur simultaneously. The concentration of Soviet forces in Eastern Europe and the western military districts of the USSR creates the ever-present risk of an attack

on Western Europe. The Middle East may have become less of a tinderbox; but a number of hostilities continue in the region, the nations there are heavily armed, and there is always the oil of Iran and the Arabian peninsula to tempt forces from the outside. In Asia, North Korea still does not appear to have accepted the independence of the South, and continues to seek the capabilities for an attack across the 38th parallel. The potentialities for further violence in Southeast Asia and Africa are large. We cannot foresee or prepare for all of them. Nor can we foreclose the possibility that several attacks on our interests might occur at once. Even much larger forces than we now support could be stretched to the breaking point under exceptional circumstances. Before we can assess the adequacy of our non-nuclear forces, we have to define where that breaking point should be.

Some history may help to illuminate the choices. We moved on a variety of fronts in World War II, but emphasized two and gave the highest priority to one -- the European theater. The basic constraint of our economy and population meant that, while we could deal with more than two contingencies, we still had to concentrate our military power and apply it sequentially in order to achieve our successes. During the 1960s, we designed and measured the adequacy of our general purpose forces on the basis of a somewhat similar strategic concept.

The assumptions behind the concept of the 1960s were that: (1) we faced two major opponents in the Soviet Union and the PRC (much as we had faced Germany and Japan in World War II); (2) the Soviet Union and the PRC could attack more or less simultaneously in Europe and Asia; (3) at the same time, another and much smaller contingency might arise in an area of vital interest to the United States -- an area such as Cuba or the Middle East -- that would require some commitment of U.S. forces.

We did not pretend that if organized violence erupted around the world, we would respond everywhere. We did not pretend that our responses would ignore the capabilities of our allies. We did not pretend that, at all times, we should have available the active-duty forces to fight our way to Moscow and Peking. We planned instead on the following basis: (1) we and our allies should have the capability to deal simultaneously with the first stages of two major contingencies and one lesser contingency; (2) behind the screen provided by our active-duty and high-priority reserve forces, we would mobilize and deploy the capabilities necessary to achieve our postwar objectives.

Simply because of the location of the Soviet Union and the PRC, and the limits on their ability to project large amounts of non-nuclear power beyond the Eurasian land mass, we assumed that major contingencies were most likely to occur in Europe, Korea, and Southeast

Asia. However, we were quite uncertain about the location of a serious lesser contingency, when it might occur in relation to the larger contingencies, and how long any of them might last.

To deal with these uncertainties and at the same time to get the most out of our defense resources we took six steps: (1) we maintained forces deployed in forward defenses in the two theaters of greatest danger and interest: Western Europe and the Western Pacific, with a particular focus in Asia on the Korean peninsula and the security of our Japanese ally; (2) we kept the bulk of our active-duty forces in a CONUS-based central reserve which could be used to move into one or more overseas theaters; (3) we built up our long-range mobility capability, principally in the form of strategic airlift, so as to be able to deploy or reinforce rapidly to a threatened theater; (4) we designated "swing" forces which would be capable of fighting effectively in both the Asian and the NATO theaters; (5) we sought to improve the early availability of our National Guard and Reserve ground and air units so as to reduce the burdens on and costs of our active-duty forces; and (6) we insisted on a two-ocean navy so as to assure, at a minimum, control of our sea lines of communication in the North Atlantic and the Western Pacific.

To the extent that we could maintain these various conditions -- both macroscopic and more microscopic -- we considered our non-nuclear forces to be adequate. We also defined, in effect, what we regarded as the relevant balances of power and where we insisted on being, as it were, Number One.

In my judgment, this approach of defining the number and magnitude of simultaneous contingencies remains the right one to use in making our non-nuclear assessments today. In reaching that judgment, I do not wish to pretend that these conditions of effectiveness have remained frozen since the 1960s. As we all know, a great deal has happened in the past decade. Soviet non-nuclear capabilities have grown in size and sophistication. Much of the numerical growth can be attributed to the decision to remain in occupation of Czechoslovakia, and to the deepening split with China. But we must recognize that the Soviet forces in Czechoslovakia are in a position to attack NATO. The Soviet forces in the Far East are less flexible in potential employment, but cannot be ignored.

We often overlook it, but U.S. and allied capabilities have changed as well. Most important, however, is the changed situation in Asia.

North Korea is no less a source of danger than it was a decade ago. But the Sino-Soviet split and our changed relationship with the PRC make it less likely that the North Koreans would receive any external encouragement or support for a major military adventure. Though they might attack without that support, its lack is an inhibiting factor. Our commitments in Southeast Asia are incomparably less than a decade ago. On the other hand, our interest in the Persian Gulf and Indian Ocean has understandably grown. Overall, it has become much more difficult than in the 1960s to imagine a large-scale conflict on the mainland of Asia requiring U.S. forces more or less simultaneously with the demands of a major crisis or conflict in Europe.

This is not to say that a clash between NATO and the Warsaw Pact would necessarily be confined to Europe and the Atlantic; it could spread to -- or conceivably start in -- other areas, including the Persian Gulf or Northeast Asia, despite the traditional Russian abhorrence of two-front wars. But the implications of a breakdown in the geographic limits to a conflict would be quite different from the occurrence of two major, simultaneous, but separate contingencies in Europe and Asia.

That is why, starting in 1969, it was decided to change the strategic concept and make our forces responsible, in conjunction with allies, for dealing simultaneously with one major and one lesser contingency -- but with the recognition that the major contingency could be worldwide in some of its repercussions. Continuation of that modified concept still seems justified today. We continue to recognize, however, that world events will not necessarily conform to our planning concept.

Because of the heavy concentration of Soviet forces in and near Eastern Europe, it is relatively easy (however unpleasant) to visualize a major conflict in central Europe that would create a demand for large U.S. forces. And it requires no great exercise of the imagination to visualize that conflict spreading, particularly at sea. It has become difficult, however, to imagine -- not so much a large-scale conflict developing elsewhere -- but another and separate large war with another major power breaking out, simultaneously with one in Europe, that would require a large U.S. intervention on the ground and in the air.

A simultaneous lesser contingency, on the other hand, not only seems quite plausible; it could also be the triggering event for a much larger conflict. The location of such a contingency remains as difficult to specify as ever. However, with the spread of the more sophisticated non-nuclear weapons, and the gradual growth in Soviet power projection capabilities, it could be more demanding of our capabilities. In the circumstances, we can probably make a larger proportion of our

ground and tactical air forces more specifically equipped for operations in Europe than in the past. In doing so, though, we must not become completely preoccupied with Europe. And we must not forego the flexibility and insurance that come from our geographic position, some "swing" forces, ready reserves, and strategic mobility.

III. ASSESSMENTS

These objectives dictate how we test the adequacy of our non-nuclear forces. Not only is an attack on Western Europe by the Warsaw Pact the most plausible major contingency that could arise; it is the most demanding one as far as we can foresee. If we and our allies can cope with such an attack, we are entitled to believe that our forces are adequate for the initial stages of any major war and its deterrence.

The basis for determining whether we also have the capability for a simultaneous lesser contingency is less easy to identify. A conflict in Korea might make demands on our tactical air, logistic support, and mobility forces. But short of intervention by another power in support of North Korea, it should not impose a requirement for U.S. ground forces on anything like the scale needed in a European war. A conflict in the area of the Persian Gulf, on the other hand, and occurring either prior to or simultaneously with a war in Europe, would obviously subject our posture to a most rigorous test. Presumably, if we could handle such a distant and difficult conflict, our forces should be adequate to deal with most of the other lesser contingencies that might arise.

Whether any of these contingencies would test our naval forces depends on the character of the conflict we postulate. A war in Europe could create heavy pressures for attack carrier and amphibious operations on or near the northern and southern flanks of NATO. Such a war, even if it were of quite short duration, would surely require that we protect our North Atlantic line of communications; and it would probably require protection of the sea lanes to Hawaii, Alaska, and our territories and allies in the Western Pacific, particularly in Northeast Asia. Attack carriers and amphibious forces could also be needed for a lesser contingency; and naval forces (like ground and land-based tactical air forces) could be used in a variety of peacetime situations for purposes of presence and demonstration. However, we are not attempting with naval forces, any more than with our other capabilities, to deal simultaneously with every contingency that might conceivably arise. We ask, rather, that our naval forces be sufficient to support U.S. national strategy in the most efficient way possible. The test of sufficiency, in our view, is primarily the degree to which U.S. and allied navies can protect the key lines of communication to Europe and Asia, while providing attack carrier and amphibious support to NATO on the flanks, and contribute simultaneously to a lesser contingency with amphibious and attack carrier forces. The threats posed by these carrier battle groups should tie down substantial Soviet naval and naval air capability.

Our assumption here, as elsewhere, is that if our naval forces can manage these contingencies, they should be quite capable of coping with any other demands we (or our opponents) might make on them.

There is, I realize, a great deal of confusion about what is meant by the balance of power and how to rank the United States in the worldwide military hierarchy. Therefore, I want to be quite clear about our objectives and what we ask our military capabilities to do. As has been the case since 1969, we want sufficient non-nuclear forces so that, in conjunction with allies, we can deal simultaneously with one major contingency (of the magnitude that could arise in Central Europe) and one lesser contingency (of the magnitude that could occur, for example, in the vicinity of the Persian Gulf). If, with our current and programmed capabilities -- and with our allies -- we can manage two such contingencies, we consider non-nuclear deterrence of attacks on our interests reasonably well assured. Whether these same capabilities will preserve the worldwide balance of power or make us Number One seems to me a less well defined question.

A. Western Europe

The greatest non-nuclear threat to Western Europe would arise from an attack by the forces of the Warsaw Pact on the Central Region of NATO. While there is a great deal of pessimism about the ability of NATO to withstand such an attack, at least by non-nuclear means, the pessimism usually exists for the wrong reasons.

In my view, NATO has the basic military assets on the ground and in the air to conduct a successful forward defense. However, its ability to use those assets effectively is highly sensitive to such factors as Warsaw Pact preparation and NATO warning time. If the Warsaw Pact required a month or more to prepare a large-scale attack on the Central Region, and if NATO received prompt and credible warning of these preparations, the Alliance could almost certainly mobilize, deploy, and make ready a force sufficient in size, firepower, and agility to establish a forward defense and stop the attack. Regrettably, however, it has become increasingly uncertain that we would be granted that amount of warning and time.

For some years, the Soviets have stressed in their military doctrine the advantages of short preparation times, tactical surprise (preceded by cover and deception), mass, concentrated firepower and shock to break through the enemy's defenses, and rapid movement to exploit the breakthroughs. With each passing year, their capability to conduct this modern form of blitzkrieg has come closer to matching their doctrine. Large quantities of self-propelled artillery and tanks, the BMP armored fighting vehicle, river-bridging equipment, organic and

mobile air defenses, and their newer aircraft with a deep-strike mission give them much of the capability for rapid offensive action. In addition, their ability to move their forces speedily into position for an attack is now estimated to be greater than we had previously thought. As a consequence, we now characterize the Warsaw Pact as having three major levels of attack.

Admittedly, neither the Soviets nor the other members of the Pact engage in large-scale maneuvers in Eastern Europe. It is estimated, nonetheless, that after a short period of preparation the Pact could launch an attack made up of two fronts from its forward deployed forces. It is believed that we would probably receive some warning of this attack.

After another short period of preparation, the Pact could attack with a total of three fronts from its forward deployed forces. If this attack occurred only after the three fronts had been deployed, NATO would probably receive a fairly substantial amount of warning.

It is conceivable that the Pact, with more time, would make ready all its forces in Eastern Europe, bring in additional divisions from the western military districts of the Soviet Union, and draw on aircraft from its reserve and training establishments before attacking. However, many of the Pact divisions would probably be at less than full combat readiness. Although NATO might receive considerable warning of preparations for this attack, the Soviets would probably seek to achieve tactical surprise.

NATO has the inventory of ground and tactical air forces to halt all three levels of attack, at least by most of the available measures. The generalship of our forces should be at least the equal of the Pact's, and the morale of our troops should be higher. We have good grounds for believing, in addition, that we would obtain excellent knowledge of Pact preparations for an attack within a relatively short time of those preparations having begun, although we could still be fooled as to the Pact's specific intentions and timing by various Soviet measures of cover and deception. When, in fact, NATO might react to these preparations would depend not only on the lag in warning, but also on decision times within the Alliance, which would be greatly affected by detailed political as well as military circumstances.

In sum, NATO already has a respectable ground and tactical air capability for a non-nuclear defense of the Central Region. At a rough estimate, the Alliance has actually bought and paid for most of what is needed to give that defense a high probability of success, even against the largest of the attacks the Pact could launch without extensive and time-consuming mobilization -- mobilization whose months would, if

efficiently used, probably benefit NATO more than the Pact. The difficulty of the Alliance is that it has simply not kept pace with the improvements made in the readiness and combat effectiveness of Soviet forces, particularly in the GSFG. We could not be any more sure of stopping quick attacks than the Soviets marshals could be confident of breaking through NATO's defenses. While I do not consider the balance a comfortable one, neither is it so discouraging as to paralyze our will to improve it.

I realize that even this moderate assessment is at variance with the view that the Pact -- with its large number of tanks -- would quickly tear gaping holes in NATO defenses manned with a relatively small number of tanks. But before we surrender to this dismal view, we should take several other considerations into account. First, NATO would oppose the Pact not just with tanks but with more than 17,000 anti-tank weapon launchers on the ground, and still more anti-tank kill capability in attack helicopters and close support aircraft. Second, it is quite doubtful that we would see all of the Pact tanks at any one time. The much more probable case is that we would have to fight off several echelons of tanks, and that the real test would be of our ability, not to destroy their inventory of tanks in a few hours, but to sustain our tank-killing capability under the impact of successive waves of tanks, preceded by heavy artillery barrages.

We are also short of indirect and direct firepower, although I do not believe that our tactical airpower (efficiently allocated) is sufficiently credited with being able to make up for this shortfall. The A-10 attack aircraft has especially impressive tank-killing potential. The fixed internal installation of the 30mm gun permits its high accuracy to be sustained over many sorties, and the high rate of fire of the weapon enables multiple rounds to be put on target in very short bursts.

Even the United States, but more particularly our allies, need more stocks of combat consumables, including modern munitions and war materiel to sustain intense combat for an extended period. All of our forces are deficient in chemical and electronic warfare capabilities, and our existing theater and field army air defenses would probably be inadequate against the newer Soviet aircraft. The unsheltered portion of our aircraft, our airfields and stocks of equipment and supplies, and the nuclear element of NATO's forces could, under current conditions, be excessively vulnerable to attacks by the newer Soviet deep penetration aircraft.

Perhaps even more disturbing, NATO's deployed forces are not yet sufficiently alert or combat-ready -- despite recent improvements -- to exploit the warning of a Pact attack they might receive. Our current LOC can be too easily severed. Lack of interoperability and cross-communication among allied forces would also hurt. Our forces, even if

in position, could be vulnerable to attacks along national interfaces, and the few reserves available in the first days of a conflict would have difficulty concentrating against the main axes of a Pact attack.

Whether adequate reserves would even be available in time must remain at issue. At present, there are too few ready allied reserve units available to counter an early Pact buildup and shore up the defenses pending the deployment of heavy U.S. tactical air and particularly ground reinforcements. As of now, the arrival of forces from the United States and their entry into combat would be delayed by the limited availability of strategic airlift (particularly of aircraft capable of moving oversize cargo) and by inadequate facilities and other resources in the theater -- with too few of the prepositioned division sets (POMCUS) needed for rapid reinforcement, too few stocks of modern munitions and other combat consumables, and a continuing serious shortage of bed-down facilities and protective shelters for our deploying aircraft. Once on line, these forces would also suffer from a lack of allied rationalization of doctrine and standardization of equipment.

Obviously, even though NATO already has all the basic economic and personnel resources necessary to halt a Pact attack in the Central Region by non-nuclear means, it has a great deal of collaborative effort ahead of it to make the investment pay off in a high-confidence defense. Increased outlays by all members of the Alliance will continue to be necessary if these last and crucial increments of effectiveness are to be achieved.

We would have to assume, in assessing our responsiveness to this major contingency, that the Pact would attack on one or both of NATO's flanks as well as in the Central Region. In the Northern Region, the Soviets might be expected to break out of the Murmansk area and try to control northern Norway and all the waters north of the Greenland-Iceland-United Kingdom (GIUK) barrier. In the Southern Region, we would have to anticipate efforts by the Pact to dispose of the threats to its flanks from Greece and Turkey, and to gain unimpeded access to the Mediterranean.

In the North, Norway (and perhaps Iceland) would be hard put to resist attack without allied support. In the South, Greece and Turkey have the forces on the ground to deal with the Pact, in part because they can benefit from the ruggedness of the terrain. But Thrace does not permit much defense in depth; both allies are short of modern air support; and they are badly deficient in combat consumables of all types.

These vulnerabilities are serious, and deserve more attention within NATO. However, I continue to believe that most of the weaknesses on the flanks can be removed primarily by improvements in the indigenous

forces, by better integration of, and logistics for, allied forces in the south, and by European commitments to reinforce the flanks on land, at sea, and in the air.

The United States, for its part, would be able to contribute significantly to a forward defense in the Northern Region through the deployment of Marine forces supported by both sea-based and land-based tactical air forces. Such a contribution would help to stabilize the situation in the North.

Although all naval forces in the eastern Mediterranean -- Soviet as well as allied -- are potentially vulnerable in some degree to surprise attack, we intend to continue operating in those waters as well as in the Norwegian Sea. The U.S. Sixth Fleet has a number of vital responsibilities in the eastern Mediterranean which it will continue to meet. One of them, in conjunction with land-based tactical air forces, is to provide air support for Greek and Turkish forces in the Southern Region. If necessary, we could make Marine units available. Logistic support would also be critical after several weeks. There is no reason why, with contributions of this order, this front could not be defended too.

In sum, NATO's position is neither as weak as the pessimists would have us believe, nor as strong as I think it needs to be. As I noted earlier, our allies already contribute 90 percent of the ground forces and 75 percent of the air forces needed to defend Western Europe against a surprise attack. The forces now deployed in the theater by the United States, and the reinforcements we would provide, are adequate in terms of combat force structure to round out this posture and give Western Europe high confidence of a successful, forward, non-nuclear defense on the flanks as well as in the Central Region. Thus, if a Warsaw Pact attack on Europe is the most demanding major contingency we could face, I believe that the United States has adequate capabilities -- at least as far as combat force structure is concerned -- to implement that part of its national strategy. The problems we have, which are major, lie in the other elements of our posture I have mentioned.

B. Northeast Asia

The international situation, and the progress we have made with our foreign policies, justify our continuing to plan for only one major non-nuclear contingency. Since our ground and tactical air forces are flexible enough to meet non-NATO as well as NATO contingencies, in conjunction with allies, they should be more than adequate to deal with any separate and major contingency in Northeast Asia, however unlikely. Moreover, any improvements we make in our rapid reinforcement capability for Europe (especially in the form of expanded strategic airlift) should give us more than enough capacity for any reinforcements we might have to provide in the Far East.

At the peak of the Korean war, our deployments on the Korean peninsula never exceeded eight divisions and 12 land-based tactical air wings. If a comparable situation were to arise again -- which is doubtful -- and if it were the only contingency to occur at the time, we could obviously make a larger effort than in 1951.

I realize, however, that concern about the situation in Korea stems less from these prospects than from the possibility of a surprise attack by North Korea. There are several grounds for this concern. The personnel strength of the North Korean ground forces now appears to be near parity with South Korean ground forces. The North Koreans have also formed a number of new combat units during the past decade; they have improved their battlefield mobility; they have a significant advantage in artillery tubes and a still larger advantage in medium tanks; and they would have the benefit of tactical surprise and the initiative.

Given a strong defense by South Korean ground forces, however, and a heavy commitment of U.S. airpower, the North Koreans could not be assured of achieving decisive results in the initial days of their offensive.

This relatively somber appraisal, and our vital interest in the Far East, leave no question about our need to continue a major military presence in the region. Despite the relative stability of the area and the growing self-defense capabilities of South Korea, we must maintain a powerful force in the Western Pacific both to demonstrate our interest and to help deter any reckless actions in Northeast Asia during a crisis in Europe.

Aside from the 2nd U.S. Infantry Division, the withdrawal of which is planned to be completed in 1981 or 1982, the principal U.S. forces immediately available for action in the theater will be 10 squadrons of land-based fighter/attack aircraft (with four of them based in South Korea), two brigades of the Third Marine Amphibious Force including its organic air wing in Japan (Okinawa), and 20 to 25 combatants in the U.S. Seventh Fleet, including two attack carriers. In addition, the Army's 25th Infantry Division, stationed in Hawaii, remains available for possible commitment. These forces will continue to undergo modernization. After the withdrawal of the 2nd U.S. Infantry Division, we also intend to designate it, when located in the CONUS, as a unit available for Korean contingencies, but one that could be used elsewhere if needed.

Our deployed forces are obviously important as both a measure and an earnest of our commitment to a theater. I do not believe, however, that because past conditions may have warranted a particular

posture, we or our friends should be immutably wedded to that posture, despite changes in military conditions. There are no good grounds for believing that, at present, our posture in the Western Pacific is too weak to deal with any land-based contingency of interest that might arise. We have the capability, nonetheless, to introduce additional combat capabilities to the theater, including a larger complement of tactical fighters, if this assessment should prove too optimistic.

Barring major new developments, however, I believe that our posture in the Western Pacific is adequate to the commitments of the United States. With a staunch ally in Japan, with powerful indigenous forces in South Korea backed by U.S. power, and with bases in the Philippines from which we can reach northward or into the Indian Ocean, the United States remains a major Pacific power. With our allies, with tactical air and sea control forces, and with currently deployed ground forces, we have high confidence of supporting the future security and stability of the region. In that sense, the balance of non-nuclear power in Asia and the Western Pacific is quite acceptable.

C. The Middle East

As I noted earlier, the Middle East now constitutes an important basis for assessing the adequacy of the non-nuclear forces we program for a lesser contingency. Most of the contingencies strictly internal to the Middle East would not appear to warrant any direct U.S. involvement. Israel is currently superior militarily to all its Arab neighbors combined. So far, Egypt has shown herself capable of handling border conflicts with Libya. However, serious problems could arise in the region of the Persian Gulf. As we have been seeing in the case of Iran, domestic instabilities constitute the greatest immediate danger there. Nevertheless, we cannot preclude the possibility of outside intervention following from these internal disruptions.

The situation in Iran is illustrative of what could happen. Continued instability there could lead to attempts by Iraq to settle old scores. Iranian forces, if they were not diverted by internal disorders, should be more than adequate in numbers and materiel to deal with this possibility. If Soviet forces were to intervene, however, either in support of attacks by others or under the pretext of defending the USSR from threats based in Iran, they could certainly overwhelm Iran's capability for defense.

I do not wish to suggest that the events hypothesized here have any imminent plausibility. The Soviets have been relatively restrained and cautious in their policy toward Iran during recent months, particularly as regards direct military action. Their forces

in the vicinity of the Caucasus, consisting of more than 20 divisions of varying strengths and about 400 tactical aircraft, have remained at a low state of readiness. However, if under these hypothetical conditions, they were to move to a Category I state of readiness and attack (which would take several weeks of preparation, we estimate), their intervention could well require a U.S. response.

The forces envisioned for such a response would be neither appropriate for nor planned for maintaining internal security and the domestic political order. Those are not responsibilities of the United States, and particularly not of the U.S. military.

Let me emphasize again that this is an examination of a hypothetical contingency. It provides a measure of the capabilities of our forces. It is not meant in any sense as a prediction of the evolution of events in the Persian Gulf region.

D. The Situation at Sea

Even the threat of these contingencies, as well as their actual occurrence, means that we must be in a position at all times to protect the major sea lanes to our allies. If non-nuclear deterrence is to be credible, our opponents must understand not only that we can deploy our forces rapidly to endangered areas, but also that we can sustain those forces in combat as long as necessary. In the event that deterrence should fail, a non-nuclear conflict of any duration would necessitate moving up to 95 percent of our military and economic cargoes by sea. In short, powerful naval forces remain essential to our security. That is not in doubt. Whether the U.S. Navy, in conjunction with allied navies, is powerful enough to execute its essential non-nuclear missions remains a matter of controversy. In my judgment it is.

Suppose that a conflict involving U.S. forces developed in the Middle East, that it spread to Europe, and that there was the further possibility that it might somehow leap to the Far East. At a minimum, in these circumstances, we would need to protect our sea lines of communication (SLOCs) in the Mediterranean, the North Atlantic, and the Western Pacific. Our allies should be able to bottle up Soviet naval forces in the Baltic and Black Seas. The main U.S. concern, therefore, would be primarily with the Soviet Northern and Pacific Fleets, and the Soviet Mediterranean Squadron, although several of our allies could also make vital contributions to the defeat of these forces.

The outcome of a shootout between our Sixth Fleet and the Soviet Squadron in the Mediterranean would depend to some degree on who fired first, and on tactical considerations, such as the degree of freedom for U.S. forces to choose their location and movement during a crisis. There is little doubt, however, that as long as we and our friends control the Mediterranean littoral, we could destroy the Soviet Squadron and come to dominate these waters.

There are several ways in which we could combat the Soviet Northern and Pacific Fleets, and they have differing effects both on U.S. naval force requirements and on how we assess the outcome of a hypothetical war at sea. Because of geography, the most efficient strategy would be to force the Soviet fleets to fight in waters favorable to us, although this would not preclude us from operating selectively in the Norwegian Sea, the Barents Sea, and the Sea of Japan.

To succeed in the interdiction of our main SLOCs, the Soviets would have to emerge from Murmansk, Vladivostok, and Petropavlovsk, run a gauntlet of air, surface, and subsurface barriers in narrow seas, in the open oceans, and around our capital ships and convoys, and inflict heavy damage on our economic and military cargoes over a period of months. As far as we can tell, their surface combatants (if they even emerged) could not survive in this environment long enough to inflict damage of any significance. Our main problem would come from Soviet land-based naval aviation -- principally the BACKFIRES armed with air-to-surface missiles -- and from Soviet cruise missile firing and torpedo firing submarines. Some of these forces might predeploy in order to escape our defensive barriers, but unless overseas bases were available to them, they would soon have to run the gauntlet to return to their home bases for resupply and refitting. Furthermore, our forces could quickly reduce any overseas bases they might have at the outset of the campaign.

Our aircraft carriers deployed in the North Atlantic and Western Pacific should be able, in conjunction with aircraft based in the United Kingdom, Iceland, and Japan, to keep the BACKFIRE threat to manageable proportions over the next few years. Because individual kill probabilities tend to be low in anti-submarine warfare (ASW), it could take as many as three months to bring the Soviet submarine threat under control in the Atlantic and the Pacific. Typical -- though necessarily uncertain -- estimates show that, during those months, essential cargoes would get through to Europe and Japan although we might lose a significant percentage of U.S. and allied merchant shipping. At the same time, according to these estimates, the Soviets would lose a large percentage of their submarine force, and their subsequent effectiveness against the main SLOCs would be low.

These estimates give us no grounds for complacency about the future. Soviet submarines will undoubtedly become quieter and more difficult to detect. Modern Soviet land-based naval aviation will probably expand in size and grow more capable as techniques for ocean surveillance improve and are linked with these aircraft. Because we invested so many resources in so few surface combatants during the late 1960s and early 1970s, and because so many of our destroyers will suffer block obsolescence toward the end of the 1980s, we run the risk then of

having less two-ocean, surface-based ASW and AAW ships than would be desirable. We are also shorter of modern mines and mine countermeasure capabilities than is prudent. Now that we are rapidly improving our anti-ship cruise missile capability, destroyer and frigate force levels and mine inventory deficiencies remain two of our most serious naval weaknesses. Perhaps of equal importance, we lack adequate defense effectiveness against massed bomber and missile attacks.

E. Conclusion

I realize that, in making these assessments, I have run counter to many widespread views about our military position relative to the Soviet Union. However, I believe that my judgments are an accurate reflection of present realities. And while I must necessarily take responsibility for the specifics of my appraisal, I think it is fair to say that my overall outlook about the present situation coincides with the view of my principal military adviser. In the words of the Chairman of the Joint Chiefs of Staff: "There is too much pessimism about our current capability. I wouldn't swap our present military capability with that of the Soviet Union, nor would I want to trade the broader problems each country faces."

IV. READINESS

So far, in making my own appraisals, I have stressed force structure and weapons. There are, however, at least five material conditions of combat effectiveness. Not only must we have force structure in the form of organized units of fire, maneuver, and support, together with sufficiently modern weapons and equipment to cope with an increasingly sophisticated opponent. We must also have forces that are highly trained, ready for deployment to combat theaters, and provided with the staying power necessary to repel and go on to defeat an enemy.

In principle, once decisions about force structure and weapons are made, the necessary training, readiness, and sustainability of the forces should follow. In practice, within any given budget, we can acquire more or less of each one of these factors.

Prior to World War II, the combination of distance and strong friends overseas permitted us, however mistakenly, to be relatively relaxed about most of these conditions of combat effectiveness. Now, nuclear weapons and long-range ballistic missiles have virtually annihilated distance and the time it used to buy us. Our allies, despite their recovery from World War II, no longer provide the shield behind which we can mobilize, equip, and train our forces. Whether we recognize it or not, we have entered an entirely new era as far as the U.S. military posture is concerned.

No one really quarrels with the importance of highly ready, alert, modern, and survivable strategic nuclear forces. What is still not adequately considered, however, is that we might want some of these forces to survive for months rather than hours after a nuclear attack, and to remain under central command and control during that time. We assume, in effect, that any nuclear exchange is bound to be a super-blitzkrieg rather than the process of attrition that has characterized most great traditional wars. Owing to the high probability that any use of nuclear weapons would quickly escalate to a counter-city exchange, that is indeed the most likely assumption. However, it is worth more critical examination than we tend to give it.

The need to control our non-nuclear forces is more universally accepted, but we give less consideration than we should to other conditions of non-nuclear effectiveness. Owing to the magnitude and growing sophistication of Warsaw Pact forces, we have been willing, admittedly, to invest in large NATO capabilities to counterbalance them. Yet despite this investment, the United States and its allies continue in many cases to stint on their training, readiness, sustainability, and modernization. Those habits must change.

While we may exaggerate the speed with which the Pact can prepare itself, NATO as a whole must still be in a position to meet sudden, unreinforced attacks that are preceded by little warning. The United States, for its part, must be able to deploy tactical air and ground forces to the theater in half the time we used to allow -- two weeks instead of a month. The amount of staying power these forces should have once in the theater is less easy to define. It is tempting to program only for a short war. If a short-war assumption were to prove wrong, however, we might find ourselves winning the opening battles and losing the war. In other parts of the world, moreover, staying power could prove to be of great importance, as we found out in both Korea and Vietnam.

It is also the case that quite lengthy periods of tension could precede an armed showdown, as they did before World War I and World War II. But it would be a mistake any longer to count on years, or even many months, of preparation, and we should not depend on the dangerous and costly tactic of trading space for time. We nearly ran out of both time and space in World War II and Korea. As surprise and blitzkrieg begin to enter the repertory of the Soviet Union, the option even to make such a trade must be in doubt.

These conditions place heavy burdens on our active-duty and high-priority reserve forces. For the most part, they now have the weapons and equipment they need to fulfill their responsibilities, although the

competition from the Soviet Union obliges us to continue our modernization programs. Our active-duty forces, and the air units and selected support units in the Reserve Components have also reached high levels of training. The affiliation of high-priority Reserve Component Army battalions and brigades with some of our active divisions promises to promote better readiness in our standby ground forces, and we are working to upgrade the training of other Army Reserve Component units.

Despite the importance of readiness, too much of our modern equipment still stands idle for lack of spare parts, maintenance, and overhauls. Forces without a high complement of ready equipment -- however sophisticated the out-of-commission weapons may be -- are not going to be effective in deterring modern, quick-breaking warfare.

I realize that we can buy back proficiency and maintenance more rapidly than new tanks, ships, and aircraft. I also appreciate that we must program for longer-term as well as more immediate force effectiveness. But time has become a scarce and precious commodity for the United States. It no longer permits us the luxury of badly unbalanced forces. The Military Departments are, of course, sensitive to the problem. As a nation, however, we have not yet fully recognized that mobilization has a different meaning today than it did 40 years ago.

In saying this, I do not wish to downgrade the importance of systematic and efficient weapons acquisition. During the past decade, Soviet procurement -- measured in U.S. prices -- has been cumulatively about 20 percent greater than comparable U.S. activities; in 1978 alone, it was 75 percent greater. As a result, we are witnessing a relative increase in the quantity and quality of Soviet weapons in almost every mission area, and a reduction in the relative age of most deployed Soviet as compared to U.S. weapons systems. In many respects, new Soviet weapons are nearly as sophisticated as ours.

The continuity and stability of Soviet military investment require that we make an equally steady and long-term response. We need to exploit the basic U.S. technological advantages in our weapons. We must make more effective use of civilian technology in our military programs and introduce more commercial incentives and products into our military R&D and procurement. Weapon system acquisition time has to be reduced. We must also undertake further collaborative efforts with our allies, since they are a major source of both current collective defense capability and future strength. In 1977, for example, the defense expenditures of our NATO allies amounted to more than \$60 billion. Clearly, increased cooperation in military R&D and production with these partners is in order.

But as I emphasized last year, and must stress this year again, modern deterrence is based on more than weapons acquisition and force structure. We must also have a history of performance, and a record of determination to maintain our defense capability. Despite the controversies that have surrounded the Korean and Vietnam wars, those conflicts should leave no doubt about our willingness to fulfill our commitments or about our loyalty to our friends. One mark of our determination is the achievement of combat-effectiveness not only on the defense, but also in offensive operations. To have both, we must do better than in the past in buying readiness and staying power.

The defense budget for FY 1980 and the Long-Range Defense Projection show the determination to maintain our essential military capabilities. As Section II of this report explains, we will also increase their combat effectiveness. The times and the responsibilities of the United States call for no less.

SECTION II

U.S. DEFENSE PROGRAMS

CHAPTER 1

STRATEGIC FORCES

I. STRATEGIC OFFENSIVE FORCES

A. Program Basis

Total Department of Defense spending for Strategic Offensive Forces in FY 1980 is more than \$8 billion. This is around six percent of the DoD budget.

1. U.S. Strategic Force Requirements

The main objective of U.S. strategic forces is to deter a nuclear attack on the United States, our forces, our allies or others whose security is important to us. In conjunction with general purpose and theater nuclear forces, our strategic forces also enhance deterrence of non-nuclear aggression against NATO and our Asian allies.

2. The Strategic Balance

Neither the United States nor the Soviet Union could launch a disarming first-strike that would prevent the other side from launching a retaliatory strike of devastating proportions. This situation will remain for the foreseeable future. Soviet ICBMs can threaten our ICBMs but the Soviets must also consider the vulnerability of their silo based systems. On the other hand, both Soviet and U.S. alert bombers and SLBMs, while subject to attrition through counterforce attacks or defensive systems, contribute to retaliatory capability without posing a major direct threat to their counterparts.

Since we cannot measure deterrence directly, I believe an appropriate measure results from an examination of how our forces might perform in response to a hypothetical Soviet attack. We must be confident that our forces are resilient enough to counter any threat that the Soviet Union can develop. I believe that a Soviet surprise attack in which our forces "rideout" the attack poses a severe test, and that the analysis of such an attack can provide critical insight into the effectiveness of our forces.

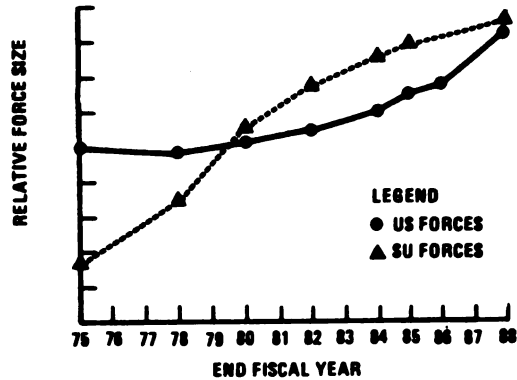
Chart 1-1 compares the relative size of U.S. and Soviet forces over the period 1975-1987 under the demanding test of a hypothetical Soviet surprise first-strike scenario. This measure reflects the calculated capabilities of the planned U.S. and projected Soviet strategic arsenals, using detailed performance characteristics (e.g., yield, accuracy, reliability) and the best projection of the threat that

U.S. AND SOVIET STRATEGIC FORCES COMPARISON ^{1/}

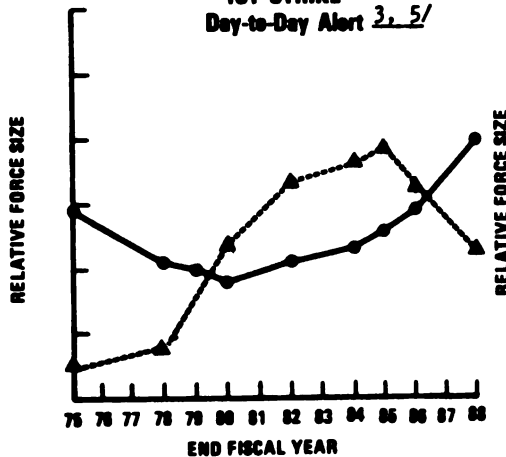
ASSUMPTIONS:

- SALT II
- M-X DEPLOYMENT WITH MOBILE BASING
- TRIDENT SUBMARINES WITH C-4 MISSILE
- CRUISE MISSILES ON B-52G:

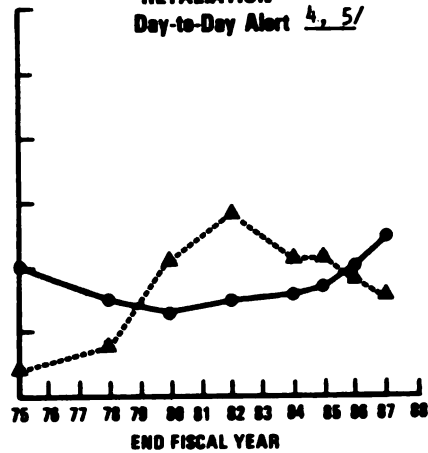
PRE-ATTACK FORCES ^{2/}



**AFTER SOVIET COUNTERFORCE
1ST STRIKE
Day-to-Day Alert ^{3, 5/}**



**AFTER U.S. COUNTERFORCE
RETALIATION
Day-to-Day Alert ^{4, 5/}**



Note: These charts reflect only one of several ways to compare forces, although they are more comprehensive than most. They do not reflect the basis on which we plan to use the forces. As is the case with all multi-year force comparisons involving different forces, they do not take into account certain operational refinements on each side such as capabilities of and allowances for theater purposes, range limitations, and uncertainties associated with command and control. It should be emphasized that the data on Soviet forces beyond 1979 are subject to considerable uncertainty, being projections.

- 1/** Relative force size is a measure of capability to destroy a given set of military and economic targets.
- 2/** These curves represent the forces on each side that could be generated (not counting units in overhaul, repair, conversion, or storage).
- 3/** These curves show U.S. day-to-day alert forces that have survived a counterforce attack, and Soviet residual day-to-day alert forces. If the U.S. forces had been on a generated alert prior to the attack, the number of U.S. forces surviving would be higher.
- 4/** These curves show U.S. day-to-day alert forces that remain after a U.S. counterforce retaliation. Soviet forces include surviving ICBMs, on-station SLBMs, any alert bombers, and those SLBMs and bombers that the Soviets had been able to generate after their first-strike. If the U.S. forces had been on a generated alert, the number of U.S. forces remaining after this retaliation would be higher.
- 5/** Both sides would remain capable of attacking a comprehensive list of "soft" military and non-military targets at this point. For this reason, the hypothetical differences between these forces might or might not be meaningful.

the forces are expected to encounter. The Soviets are now estimated to be introducing new missiles with more warheads and improving the accuracy of their warheads, more rapidly than we had expected a year ago. The increasing vulnerability of our ICBMs means that by 1982 the balance calculated to result after a Soviet first strike and a U.S. retaliation would be less favorable than we would wish, though remaining U.S. forces would be enough to wreak enormous damage. Thereafter improvements in our SLBM and bomber forces will, if resolutely pursued, correct this imbalance, and deployment of a new survivable ICBM will reverse it. We should not lose sight of the fact that until survivable ICBMs are deployed, the relative outcome of these exchanges will be more sensitive to uncertainties associated with the possibility of attrition of SLBM and bomber forces being greater than expected, and to command and control uncertainties.

3. Key Needs for Strategic Forces

It is my view that the best way to proceed to our goal of maintaining deterrence and stability is to take those steps necessary to maintain effective strategic forces which retain the characteristics -- including the diversity, redundancy, and flexibility of the current TRIAD. By having three largely independent survivable systems, our capability has been well hedged in the past. Various factors -- silo vulnerability, block obsolescence, and advances in strategic defense capability to name a few -- require action to prevent the deterioration of our currently effective strategic forces into a force with undue reliance on one or two components. Three key problems must be addressed if we are to ensure the continued effectiveness of our strategic programs: (1) a solution must be found to the problem of increasing vulnerability of land-based ICBMs; (2) the high survivability of the SLBM force must be maintained as POLARIS/POSEIDON submarines reach the end of their planned service life; and (3) high reliability, survivability, and penetration for weapons assigned to the air-breathing leg must be continued.

B. Program Description

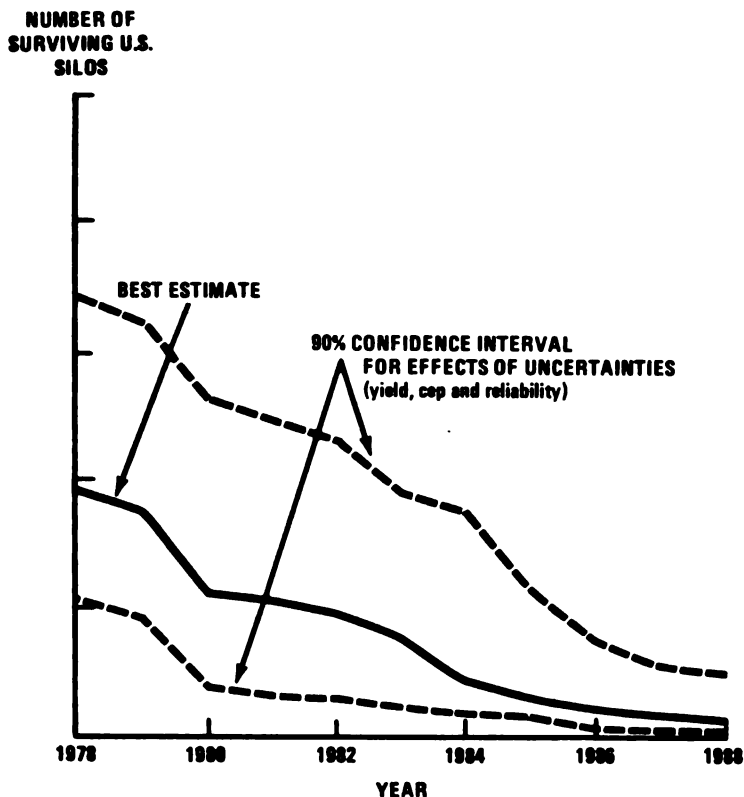
The five-year program places emphasis on those programs which address our major deficiencies.

1. Finding a Solution to the Problem of the Increasing Vulnerability of Land-Based ICBMs

During the past year, we have given considerable attention to the questions surrounding modernization of the ICBM force, especially the problem of choosing a survivable basing mode. Major progress has been made in understanding the evolving Soviet threat to our ICBMs and the courses of action available to us. Analysis of intelligence data on new versions of the SS-18 and SS-19 missiles indicates that by the early 1980s a substantial threat to our MINUTEMAN will exist. Our best

estimate of surviving U.S. silo-based ICBMs is shown in Chart 1-2. The vulnerability of MINUTEMAN silos certainly does not mean that the United States deterrent as a whole would no longer be effective. However, the matter is clearly serious enough to warrant action.

Chart 1-2



A useful way to assess the impact of increased ICBM vulnerability is to consider the capability of the strategic forces after a surprise Soviet attack. ICBMs have been assigned to the whole spectrum of targets. Very low survivability of ICBMs in the early 1980's will leave us with very little effective quick-response hard target kill capability unless we were to adopt a launch-under-attack policy; however, the introduction of air-launched cruise missiles will provide an extensive slow response capability even against very hard targets. Our capability against non-silo targets, moreover, will become more effective in the late 80's. The deployment of TRIDENT I missiles in some POSEIDON submarines in October 1979, the deployment of new TRIDENT submarines beginning in August 1981, and the deployment of Air Launched Cruise Missiles (ALCM) in December 1982 provide increased capability even before survivable ICBMs are deployed in numbers.

The ICBM force has played a very important role in determining the objective military capability of our strategic forces. Moreover, the attributes of the ICBM force are emphasized in Soviet doctrinal writings and in many public discussions of the strategic balance. Table 1-1 shows a qualitative comparison of current ICBMs with current SLBMs and bombers/ALCMs. The table shows that ICBMs have at present a number of advantages over SLBMs and bombers. It would probably be possible to incorporate some of these capabilities into the SLBM force, but I have considerable doubt that SLBM command, communications and control (C³), responsiveness and accuracy can ever be made as reliable as a CONUS-based ICBM force, especially while maintaining the requirement for enduring survivability of the SLBMs.

Table 1-1

Current Strategic Force Characteristics

	<u>ICBMs</u>	<u>SLBMs</u>	<u>Bombers/ALCMs</u>
Secure and Reliable C ³	yes	?**	?
Flexibility/Responsiveness	yes	?**	no
Assured Penetration	yes	yes	?
Prompt Counterforce Capability	yes	?**	no
Sovereign Basing	yes	no	yes
Enduring Survivability	*	yes	?
Survives Without Tactical Warning	*	yes	no

-
- * May be "yes" with Multiple Protective Structures (MPS) and some other survivable basing modes.
 - ** Would require new programs and/or changes to SSBN operational practices.

Another characteristic of the ICBM force is that it has been, over the past decade, the most powerful retaliatory leg of the TRIAD in SIOP targeting because of its high alert rate, relatively large warheads, and pre-launch survivability. Given the past importance of our ICBM force and the traditional emphasis of the Soviets (and of many military observers throughout the world) on ICBMs, it can be argued that a decision not to modernize the ICBM force would be perceived by the Soviets, and perhaps by others, as demonstrating U.S. willingness to accept inferiority, or at least as evidence that we were not competitive in a major (indeed, what the Soviets have chosen as the major) area of strategic power. Others could argue, however, that such a decision could be viewed as playing to U.S. strengths in SLBMs and cruise missiles rather than investing in an inherently less survivable element of our strategic forces. My own judgment lies between these alternatives, but closer to the former view.

In the course of the past year, we have examined, in detail, the relative cost of alternative force postures, with and without ICBM modernization, under a SALT II agreement. We have concluded from this study that TRIADs with ICBM modernization are no more costly than DYADs of bombers/ALCMs and SLBMs of comparable levels of capability. When factors such as force diversity, dilution of the Soviet threat, and overall confidence are considered, I am persuaded that our best policy choice is to maintain the TRIAD by modernizing our ICBM forces. This will require the development of a new missile and a new survivable basing system.

Although recent studies indicate that a multiple protective structure (MPS) would provide a highly survivable base for a new ICBM, there are important questions which require careful consideration before we make a final commitment to it. These include: ability to bound the threat in terms of number of accurate Soviet RVs available to attack MPS, adequate verification if the Soviets deployed a similar system (we must ensure that the number of launchers can be verified by national technical means without requiring unrealistic levels of cooperation); credibility and effectiveness of concealment; environmental aspects; and costs, including effect on costs of any potential Soviet responses.

We will continue our resolution of these questions, but in the meantime we will also continue with a detailed exploration of alternatives to the MPS concept. Following the M-X DSARC held in December 1978, I instructed the Air Force to conduct an intensive study which would lead to a high confidence assessment of the feasibility, schedule, and costs of a survivable air mobile system. The particular air mobile concept being studied involves a missile that could be launched from a STOL-type cargo aircraft. The aircraft would ordinarily be based at austere airfields in the north central U.S. to allow maximum escape time from an SLBM attack. On either strategic or tactical warning -- or on a judgment that we could not count on adequate warning (for example, loss of function of our infrared satellites or forward deployment of enough Soviet SLBM warheads for a barrage attack on our aircraft and the areas around the airfields), the aircraft could leave their base. If a launch command was not received, each aircraft could either return to its own base, or, because of its STOL (short take off and landing) properties, could land at any of several thousand small airstrips, including perhaps unpaved ones, located throughout the U.S. If the alert were to continue for a long period of time, the aircraft could be moved from one airfield to another at appropriate intervals to deny knowledge of its location.

Designing a missile is much simpler than providing survivable basing for it. The missile design we have aimed at is flexible enough to be used either with an MPS, an air mobile system or a MINUTEMAN silo -- or a land mobile or underwater barge-mounted system.

We expect that the missile will be 83" in diameter, and use a high energy solid propellant. The design envisions a three-stage version and a two-stage version. The two-stage version would be sized to fit a TRIDENT launch tube. This commonality in missile design between the M-X and TRIDENT programs could save one to two billion dollars in development costs on the TRIDENT II missile.

The final decision on missile design will be made in conjunction with the decision on basing which we expect to make in the spring of 1979. At that time we plan to proceed with the full-scale development of the missile using funds requested in the FY 1979 supplemental.

		FY 1978 Actual Funding	FY 1979 Planned Funding	FY 1980 Prop'd Funding	FY 1981 Prop'd for Authori- zation
Advanced ICBM Technology (including M-X in FY 78/79)	Development: \$ Millions	134.4	233.2	5.7	8.0
M-X Engineering Development	Development: \$ Millions	-	190.0	670.0	1,321.1
MINUTEMAN improvements (silo upgrade, MK-12A warhead to increase yield, and improved communications)	Development: \$ Millions	56.4	53.3	30.3	46.8
	Procurement: \$ Millions	267.0	68.7	105.1	137.7

2. Maintaining the High Survivability and Effectiveness of the SLBM Force as POLARIS/POSEIDON Submarines Reach the End of their Planned Service Life

Strategic submarines continue to provide a unique mix of capabilities for our strategic forces. The ability to patrol, virtually unchallenged, in the vast ocean areas presents a multi-azimuth and so far untargetable retaliatory capability. The existence of a survivable at-sea ballistic missile force decreases any incentives for large scale attacks on U.S. soil, since such attacks would not eliminate our ability to retaliate. The problem is how to provide a cost-effective transition from a submarine force designed in the 1950's to a force that will continue to provide high confidence sea-based deterrence into the 21st century.

The 41 POLARIS/POSEIDON SSBNs in service were constructed in the late 1950s and early 1960s. The ten oldest SSBNs operate in the Pacific with 16 POLARIS (A-3) Multiple Reentry Vehicle (MRV) missiles per submarine. The remaining 31 operational SSBNs have been converted to carry 16 POSEIDON missiles each having Multiple Independently Targetable reentry vehicles (MIRV). Seven TRIDENT submarines have been authorized for construction and are under contract to the Electric Boat Division of General Dynamics. Deployment of these highly capable submarines will begin in the Pacific in 1981 from a new base at Bangor, Washington. POLARIS submarines will be withdrawn from service as TRIDENT deploys.

The current estimate for the delivery of the first TRIDENT submarine, USS OHIO (SSBN-726), is November 1980. Extensive management changes and the maturation of the expanded work force at the Electric Boat Division of General Dynamics appear to have solved the TRIDENT construction problems. However, cost escalation caused by extremely high inflation in the shipbuilding industry continues to be a problem. There is one new TRIDENT submarine authorization included in the FY 1980 budget, and an authorization rate of slightly more than one per year is programmed through 1984 for a total of 13 ships authorized or programmed by the end of the FYDP period. It is planned to resume the previously programmed building rate of three ships every two years by the mid-1980s; the total number of TRIDENTs to be built has not yet been finally determined.

The TRIDENT I missile was designed to be compatible with both TRIDENT and POSEIDON submarines. So far, the TRIDENT I (C-4) missile has experienced 14 successes in 17 launches, even better than POLARIS and POSEIDON at comparable phases of their development. Shipboard launch tests will commence this spring from USS FRANCIS SCOTT KEY (SSBN-654). This SSBN will deploy in October 1979 as the first of 12 POSEIDON submarines to be retrofitted with the TRIDENT I missile. The capability of the TRIDENT I missile will help to offset the reduction in SLBM launchers that will result from POLARIS/POSEIDON retirement, by increasing the effectiveness of the remaining submarines. These submarines will operate from a refit site at Kings Bay, Georgia that will be activated with the planned withdrawal from the POSEIDON refit site at Rota, Spain in the spring of 1979.

The TRIDENT II missile, to be developed in parallel with but later than the M-X, will increase the SLBM throw-weight by utilizing all of the volume of the TRIDENT launch tube. The potential for developmental cost savings exists by, at the least, using the stages of the Air Force missile design as components of the TRIDENT II, linking the early missile design efforts of Navy and Air Force teams.

Alternative submarine designs potentially less expensive than TRIDENT are under study. If a promising alternative develops, it could influence SSBN procurement in the FY 1982 budget. This study has several goals: (1) to provide a less expensive submarine than TRIDENT; (2) to bring competition into the SSBN acquisition process; and (3) to provide the option for an expanded SSBN building program should the need arise.

		<u>FY 1978 Actual Funding</u>	<u>FY 1979 Planned Funding</u>	<u>FY 1980 Prop'd Funding</u>	<u>FY 1981 Prop'd for Authori- zation</u>
Acquisition of TRIDENT Submarine	\$ Millions	1,872.9	647.9	1,478.9	1,337.8
Acquisition of TRIDENT I Missile	\$ Millions	1,467.8	1,090.2	824.1	712.8
Research and Development of TRIDENT II Missile	\$ Millions	5.0	25.0	40.6	129.3

3. Maintaining High Reliability and Penetration for Weapons Assigned to the Air-Breathing Leg of the TRIAD

a. Cruise Missile Program

The air-launched cruise missile program is proceeding on schedule toward completion of the competitive flyoff between the Boeing AGM-86B and the General Dynamics AGM-109. This competition was initiated in February 1978, with the passage of the FY 1978 Supplemental appropriation. Ten flights of each missile are planned between June and November 1979, leading to source selection in January 1980 preliminary to a DSARC III production decision in February 1980. In addition, it is planned to have competitors for a second source of engine and navigation/guidance subsystem components. The overall purpose of these competitions is to provide a more cost-effective ALCM for the B-52G.

Because of the important role the ALCM is projected to assume in the air-breathing leg of the TRIAD when it is loaded on all B-52G bombers, I have initiated a survivability assessment of the cruise missile. Between January and September 1978, seven flight tests were conducted with the TOMAHAWK as a representative missile. The data resulting from these tests are being evaluated. Follow-on testing may include real-life target acquisition and kill attempts by air-to-air

missiles, surface-to-air missiles, and automatic anti-aircraft guns. So far I have seen nothing to change my view that our successive generations of cruise missile capabilities will be able to penetrate the Soviet defenses as they evolve over time.

To make this ALCM program consistent with the usual definition of initial operational capability (IOC), we have changed the date of the IOC from September 1981 with one aircraft loaded with cruise missiles to December 1982 with one squadron of B-52s (16 U.E.) loaded with external cruise missiles. This change does not represent a slip in the program, only a change in what is defined as the IOC.

b. Cruise Missile Carrier Aircraft

I have mentioned previously that I consider the cruise missile carrier aircraft to offer a prudent option for rapid growth in our strategic capability should it be needed. On this basis, the Air Force is completing concept/system definition studies based on the consideration of both military and civilian aircraft. These aircraft include existing wide-bodied transport aircraft as well as the B-1 design, Advanced Medium STOL Transport (AMST), C-141, C-5A and other candidates.

Upon completion of these studies in July of this year, two aircraft will be selected for follow-on advanced design/development and flight demonstration. The concept feasibility flight demonstration of these two aircraft will occur not later than the Spring of 1981 to allow, if needed, a full scale engineering development decision in July of 1981.

c. B-1 R&D

We are continuing the testing of the B-1 bomber design so that the technical base will be available, in the very unlikely event that, because alternative strategic systems run into difficulty we decide to reconsider B-1 deployment. This program will evaluate the penetration effectiveness of the B-1; provide information on current and future applications of the B-1 defensive avionics and engine design; and measure the B-1's resistance -- specially designed into the aircraft -- to nuclear effects.

The fourth and last B-1 aircraft is scheduled for delivery this February with both the offensive and defensive avionics installed. The data from this aircraft's flight test program will help in the design of future strategic penetrating aircraft, as well as provide a measure of the B-1's capability as a cruise missile carrier.

d. New Manned Bomber

We are continuing to examine the requirements for a new penetrating bomber in the late 1980s to early 1990 time frame as a follow-on to our aging B-52 force. By the end of FY 1988, our newest B-52s, the B-52Hs, will, on the average, be more than 25 years old. To meet the increasingly sophisticated Soviet air defense threat during that period, should we decide to continue to have penetrating bombers indefinitely as a major component of our strategic forces, it is only prudent to start long-range planning and development for a possible follow-on aircraft now. The FY 1980 budget request will provide for definition and selection of alternative concepts and technology.

e. Aerial Tanker

The current KC-135A force supports all of today's peacetime aerial refueling requirements. However, competing wartime requirements of a simultaneous execution of the Single Integrated Operational Plan (SIOP) and a major contingency action, i.e., NATO, Persian Gulf, Korea, etc., could demand more refueling assets than available. If wartime decision makers chose to support significant NATO deployment/employment with aerial refueling assets, SIOP war-fighting capability would be reduced when, potentially, it is most needed.

Development of an engine for possible KC-135 reengining, and the KC-10A, are two ongoing programs that are being pursued that might provide added capability in this area. The first two KC-10As have been procured. Research and development is continuing on the KC-135 reengining program. (See Mobility Forces, Chapter 6 for KC-10A data.)

		<u>FY 1978</u>	<u>FY 1979</u>	<u>FY 1980</u>	<u>FY 1981</u>
		<u>Actual</u>	<u>Planned</u>	<u>Prop'd</u>	<u>Prop'd for</u>
		<u>Funding</u>	<u>Funding</u>	<u>Funding</u>	<u>Authori-</u>
					<u>zation</u>
Air-Launched Cruise Missile Program	Development: \$ Millions	276.9	336.9	90.0	20.0
Cruise Missile Carrier Aircraft	Development: \$ Millions	15.0	20.6	30.0	60.0
Modification of B-52 Strategic Bomber	Development: \$ Millions	45.0	105.9	94.3	112.0

		<u>FY 1978</u> <u>Actual</u> <u>Funding</u>	<u>FY 1979</u> <u>Planned</u> <u>Funding</u>	<u>FY 1980</u> <u>Prop'd</u> <u>Funding</u>	<u>FY 1981</u> <u>Prop'd for</u> <u>Authori-</u> <u>zation</u>
Research and development of B-1 bomber and other Bomber Studies	Development: \$ Millions	443.4	55.0	54.9	30.4
Research and development of KC-135 Reengined prototype.	Development: \$ Millions	3.8	10.5	11.0	28.4
B-52 Defensive Systems	Development: \$ Millions	15.5	29.6	38.9	70.1

II. STRATEGIC DEFENSIVE FORCES

A. Program Basis

Strategic defense is an integral part of our strategy of deterrence. In particular, timely and reliable warning and assessment of an attack is an essential element in maintaining the credible retaliatory capability of our offensive forces. We recognize that the cost of attempting to construct a complete defense against a massive Soviet nuclear attack would be prohibitive. And cost aside, we are restricted in Anti-Ballistic Missile (ABM) deployment by the ABM Treaty of 1972 and the 1974 Protocol. Our current programs for active defense reflect these constraints and the emphasis that we place on offensive force deterrence and forward defense. A major part of the strategic defense program costs are related to warning and attack assessment since these functions are a key element in the maintenance of our strategic retaliatory capability.

We need to maintain vigorous programs to provide warning and assessment of missile or bomber attack on North America and U.S. space systems, permit controls over our sovereign airspace, serve as an R&D hedge against future defense requirements, and enhance the survivability of our population in the event of a major nuclear war. These key objectives are addressed within the four elements of our strategic defense program: Ballistic Missile Defense (BMD) and warning, Air Defense, Space Defense, and Civil Defense.

B. Program Status and Description

1. Defense Against Ballistic Missiles

a. Tactical Warning and Attack Assessment

We plan to improve our dual system of sensors (sensing different phenomena) to warn of strategic missile attack. We will continue to rely on satellites for early warning of ICBM and SLBM attack. Our ground based radar systems provide a second type of warning for confirmation, and additional information to help characterize the attack.

For the northern approaches, the Ballistic Missile Early Warning System (BMEWS) provides ICBM attack confirmation and assessment. Our planned BMEWS radar enhancement program will improve system reliability and capability. The Perimeter Acquisition Radar Characterization System (PARCS), a converted asset of the SAFEGUARD anti-ballistic missile system, acts as a backup for a large part of the BMEWS coverage area and can also provide additional ICBM attack assessment.

For the coastal SLBM approaches, we will continue to operate the FPS-85 radar in Florida and will complete deployment of the two coastal-based phased-array radars (PAVE PAWS) in FY 1980. All but one of the six obsolescent FSS-7 SLBM warning radars can be phased out as the two PAVE PAWS radars become operational.

In addition to the improvements in the warning radar systems, we are developing evolutionary improvements to the early warning satellite sensors and have begun efforts to increase the survivability and operational flexibility of the ground-based equipment. We also plan to pursue R&D that is applicable to a more capable new generation of spaceborne missile surveillance sensors.

We are continuing development work on the Integrated Operational Nuclear Detection System (IONDS) for deployment aboard the NAVSTAR Global Positioning Satellites (GPS). IONDS will provide worldwide nuclear trans-and post-attack damage assessment information to the NCA.

b. Ballistic Missile Defense (BMD) R&D

The lead we enjoyed in BMD technology at the time of agreement on the Anti-Ballistic Missile (ABM) treaty has substantially diminished. It is therefore important for us to pursue an aggressive

R&D program to guard against a Soviet breakthrough in the field and to encourage their compliance with the treaty. Accordingly, in the coming year, we will continue with two complementary R&D efforts: an Advanced Technology Program and a Systems Technology Program.

The Advanced Technology Program is a broad research effort on the technology of all BMD components and functions. The principal program objectives are to maintain a technological lead over the Soviet Union and to develop new technologies to reduce the cost and complexity of BMD. In addition, the program provides the technological basis for judging Soviet developments in BMD and for assisting in the evaluation of the penetration capabilities of our strategic offensive forces. Program objectives are achieved through key field experiments in missile discrimination, data processing, radar and optics technologies, and a continuing search for revolutionary concepts and ideas. A broad effort is continuing to develop the technologies needed to achieve short range, non-nuclear intercept and destruction of reentry vehicles within the atmosphere.

The Systems Technology Program is a hedge against future strategic uncertainties. By drawing on the accomplishments from the Advanced Technology Program, this program maintains a capability to develop the most critical aspects of BMD technology -- the integration of components and the testing of key systems concepts. Our major thrust continues to be to demonstrate the capability of new sensors and guidance techniques to support the interception of reentry vehicles with sufficient accuracy to destroy them by non-nuclear means. The first test is scheduled for late 1981.

2. Air-Defense

a. Interceptor Forces

Active and Air National Guard (ANG) squadrons provide our 321 interceptors dedicated to CONUS/North American Air Defense. The CONUS interceptor forces, along with Tactical Air Command (TAC) F-15 and F-4 augmentation forces (described below), maintain peacetime alert at 26 sites around the periphery of the 48 contiguous states.

The interceptor forces are supplemented by Army-operated surface-to-air missile (SAM) batteries. Three NIKE-Hercules batteries are located in Alaska; four NIKE-Hercules batteries and eight HAWK batteries are located in Florida.

The Air Force, Navy, and Marines are tasked to provide additional interceptors in a crisis. This augmentation force includes 160 F-4s, F-15s, and F-14s. Moreover, by using some of the

F-15s already procured or programmed for TAC, we can provide a newer, more capable interceptor -- at least as an initial modernization effort -- without the high cost of adding dedicated aircraft to the air defense force.

b. Surveillance and Command and Control Systems

The CONUS-based network of airspace surveillance radar sites formerly operated and maintained by the Air Force duplicated, around much of the periphery, the Federal Aviation Administration (FAA) air traffic control system. In 1975, under an agreement with FAA, we began to phase out most of the Air Force surveillance radars in favor of a Joint Surveillance System (JSS).

The North American radar network of 83 radar sites will support the air space surveillance mission. Of these, 24 sites will be located in Canada and 45 sites will be located around the periphery of the CONUS. Thirty-six of the CONUS sites will be operated and maintained by FAA, but the radar data will be jointly used by FAA and the Air Force. Nine of the CONUS sites will be under military control since FAA has no present need for air traffic control in some of the low traffic areas. The remaining 14 sites will be in Alaska (12 Air Force sites, one jointly-used Air Force site, and one jointly-used FAA site).

The command and control element of the JSS will consist of seven Regional Operations Control Centers (ROCCs). Four ROCCs are to be located in CONUS, one will be in Alaska, and the Canadians plan to modernize their North American Air Defense (NORAD) air surveillance and control by deploying two ROCCs. These ROCCs will replace the seven high-cost, outdated Semi-Automatic Ground Environment (SAGE) and Back-up Intercept Control (BUIC) centers in CONUS and Canada and the manual control center in Alaska. Savings (which include the release of more than 5,000 personnel to other Air Force missions) of more than \$100 million per year are expected when these obsolete SAGE/BUIC centers are phased out. Activation of the CONUS and Canadian ROCCs is planned by 1981. The Alaskan ROCC will be ready by 1983.

Since the Joint Surveillance System is designed for air sovereignty control at low cost and is non-survivable, crisis Air Defense depends upon the E-3A AWACS. A total of 34 AWACS are tentatively planned for operation by TAC; at present six of these are earmarked for North American employment in peacetime. In a crisis, these six earmarked for North America could be further augmented from the general purpose AWACS force.

c. Bomber Warning

We are continuing the CONUS Over-the-Horizon BACK-SCATTER (OTH-B) radar R&D program. Technical feasibility testing will be completed by the end of 1980. We will then decide if system deployment would help satisfy our bomber warning needs along the coastal air approaches to the United States.

Since a northern-looking OTH-B radar is not feasible because of auroral effects, in FY 1980 we are also continuing R&D for improvements to the Distant Early Warning (DEW) Line; and, as a long-term goal, pursuing a capability to detect bombers from space (DARPA's TEAL RUBY experiment). Current NORAD planning, which is proceeding in consultation with Canada, envisions replacing the existing DEW radars with modern systems that would provide improved warning coverage particularly at low altitude against possible attack over the northern approaches to North America and do so at lower maintenance and operating cost.

The cost of maintaining our existing bomber warning capability and the airspace surveillance and control forces in FY 1980 totals about \$577 million. This total is attributable to the CONUS interceptors (\$271 million), the radar sites (\$239 million), and the control centers (\$67 million).

3. Space Defense

Our policy is to abide by the agreements limiting the use of space to nonaggressive purposes. We see developing Soviet space capabilities that could directly threaten our terrestrial forces and some of our critical satellites. The Soviets are operating satellite systems that could perform targeting of U.S. naval and land-based forces and they have tested an anti-satellite (ASAT) system. In addition to their ASAT interceptor, they are working on other technology programs that appear to be ASAT related. These Soviet activities could threaten our access to space.

The President has stated our preference for an adequately verifiable ban on ASAT systems and our opposition to a space weapons race. We have begun discussions with the Soviets on these subjects. However, in the absence of an agreement and in the face of the potential threat, we will have to continue working to defend our satellites, and to develop an equivalent capability to destroy Soviet satellites if necessary. Consequently, our space defense programs take several forms to achieve a balance of operational capabilities in the 1980s. They range from measures to improve satellite tracking and satellite ground control survivability, to ASAT development programs against the Soviet satellite systems that could threaten our forces.

Our progress in ASAT R&D is of special interest in light of the recently initiated discussions on an ASAT ban. Our studies of the threat and the potential means to counter it will continue this year.

4. Civil Defense (CD)

The purpose of the U.S. civil defense program is to enhance, in the event of a nuclear war, the survivability of the American people and its leadership, thereby improving the basis for eventual national recovery. The primary focus of the program is to study and develop a capability for relocating our people to low-risk areas in a crisis over a period of days or weeks, so as to reduce significantly their vulnerability to a major Soviet nuclear attack.

In addition, the U.S. civil defense program should contribute both to perceptions of the overall U.S.-Soviet strategic balance and to crisis stability, and also reduce the possibility that the Soviets could coerce us in time of crisis. It can be a factor in avoiding major asymmetries in population fatalities.

This program does not suggest any change in the U.S. policy of continuing reliance on strategic offensive nuclear forces as the preponderant factor in maintaining deterrence, nor does it require civil defense programs similar or equivalent to the civil defense programs of the Soviets.

This nuclear attack oriented civil defense program can also help deal with natural disasters and other national emergencies. The integration of national emergency related programs into the newly created Federal Emergency Management Agency (FEMA) will help to further this coordination.

The key to achieving our primary objective (saving lives in the event of nuclear attack) is to develop the capability for relocating our people from potential target areas and metropolitan areas to areas of lower risk. Nuclear attack on the United States would most likely be preceded by a period of intense crisis. In that case we could have the time to relocate a major portion of our population.

Our initial focus, in attaining a national crisis relocation capability, will be on those regions of the country where crisis evacuation appears most feasible and credible, and planning presents the fewest problems. Such regions include localities near our strategic offensive forces. Lessons learned in attaining a full operating capability for crisis evacuation for the population in those regions will then be applied in developing such a capability for the more densely populated urbanized areas of the United States.

In addition to the key capability for population relocation, the civil defense program would provide fallout protection for the population near places of work or residence. This protection would not be as effective as relocation, however.

The major elements included in our civil defense program for attaining these complementary capabilities are: development of crisis relocation plans using the highly developed private transportation system and the existing distribution of housing outside urban areas, surveys of fallout shelter spaces in existing structures in potential target areas and crisis relocation host areas, maintenance of radiological defense systems and capabilities, development of State and local government emergency operating capabilities, maintenance of a national CD warning system, and peacetime training and exercising for those who would play key roles in actually implementing the program in time of crisis.

		<u>FY 1978</u>	<u>FY 1979</u>	<u>FY 1980</u>	<u>FY 1981</u>
		<u>Actual</u>	<u>Planned</u>	<u>Prop'd</u>	<u>Prop'd for</u>
		<u>Funding</u>	<u>Funding</u>	<u>Funding</u>	<u>Authori-</u>
					<u>zation</u>
Continued improvements in the Early Warning Satellite	\$ Millions	36.9	36.1	42.1	56.0
Modernization of BMEWS (Ballistic Missile Early Warning System)	\$ Millions	4.4	11.0	9.0	5.5
Development and acquisition of the SLBM Phased Array Radar Warning System	\$ Millions	8.5	3.7	4.2	1.0
Integrated Operational Nuclear Detection System (IONDS)	\$ Millions	7.7	9.1	11.9	11.9
Development of Ballistic Missile Defense Advanced Technology	\$ Millions	107.3	113.5	113.7	127.5
Development of Systems Technology (formerly Site Defense)	\$ Millions	106.2	114.0	114.8	128.1
R&D and procurement of the Joint Surveillance System	\$ Millions	11.2	43.5	78.2	9.6

		<u>FY 1978</u>	<u>FY 1979</u>	<u>FY 1980</u>	<u>FY 1981</u>
		<u>Actual</u>	<u>Planned</u>	<u>Prop'd</u>	<u>Prop'd for</u>
		<u>Funding</u>	<u>Funding</u>	<u>Funding</u>	<u>Authori-</u>
					<u>zation</u>
Continued development of the Over-the-Horizon (OTH) BACKSCATTER Radar	\$ Millions	4.0	10.9	11.9	8.2
Development of Enhanced Distant Early Warning Line Radars	\$ Millions	1.0	5.0	5.0	11.0
Development and Improvement of Space Defense Systems	\$ Millions	41.6	73.0	80.5	108.6
Civil Defense (funds are not included in DoD totals. Effective April 1979 Civil Defense funding will be administered by FEMA.)	\$ Millions	91.6	97.9	108.6	-

III. STRATEGIC COMMAND, CONTROL AND COMMUNICATIONS

A. Program Basis

The purpose of the strategic command, control, and communications (C³) system is to enable the President to have flexible operational control of the strategic forces during all levels of conflict. He must, as a minimum, have access to a survivable C³ system for execution and termination of nuclear strikes. A complementary need is the maintenance of constant communications with the leadership of potential adversaries.

B. World-Wide Military Command and Control System (WWMCCS)

To permit strategic nuclear retaliation even after the C³ system itself has been attacked, we have developed a number of command centers, both fixed and mobile, with redundant lines of communication from the President, to the strategic offensive forces.

The National Military Command System (NMCS) is the central component of the WWMCCS. It consists of the National Military Command Center (NMCC, a soft facility) in the Pentagon, the Alternate National Military Command Center and the National Emergency Airborne Command Post (NEACP). In addition to the NMCS, four commanders (CINCSAC, CINCEUR,

CINCLANT, and CINCPAC) have both fixed and airborne command posts capable of communicating with the nuclear forces. Only CINCSAC maintains a continuous, survivable airborne alert.

The threat of direct physical attack on fixed C³ facilities is always present, and we expect the electronic jamming threat to increase. Four continuing programs are designed to meet these threats: The Advanced Airborne National Command Post (AABNCP), the Air Force Satellite Communication System (AFSATCOM), the Navy Extremely Low Frequency (ELF) System, and the Navy EC-130 TACAMO program with its planned improvements. These programs, along with other improvements in multi-purpose systems such as the Defense Satellite Communications System (DSCS) and the SAC Digital Network (SACDIN), will enhance the flexible employment of strategic (and other) forces, and maintain strategic C³ continuity and sustainability in any crisis.

The Advanced Airborne Command Post program using E-4 aircraft offers one of the best near-term prospects for the survival of the key command-control elements even under highly adverse conditions. Since current fixed command posts are vulnerable to a concentrated nuclear attack, the E-4 will serve as a survivable emergency extension of the ground command centers and provide high confidence in our ability to execute the Single Integrated Operating Plan (SIOP). The aircraft's advanced communications capability will not be operationally limited to line of sight. It will be fitted with the new ultra-high frequency (UHF) and super-high frequency (SHF) satellite communications terminals, high powered low frequency (LF) and very-low frequency (VLF) terminals, secure voice and message processing system, and anti-jam features. This equipment will support operations over extended distances in a nuclear environment. The E-4's electromagnetic pulse (EMP) resistant airframe, and expanded operations team and battle staff will also enhance our command and control capability.

The Air Force Satellite Communications (AFSATCOM) system is designed to provide world-wide communications to the strategic nuclear forces. It consists of ground-based segment earth terminals located at Wing Command posts and ICBM launch control centers, as well as airborne segment terminals located on B-52 and FB-111 bombers, RC-135s, and TACAMO aircraft. The terminals are now in full production and installation is expected to proceed rapidly in FY 1979 and FY 1980. The space segment is evolving in phases. Phase One, which is now operational and is part of the original AFSATCOM system, consists of transponders on several host satellites. The Phase Two plan will expand the number of host satellites to include the Defense Satellite Communications System (DSCS) to achieve the required world-wide communications coverage.

The ELF Communications Program will improve greatly the Navy strategic submarine forces ability to remain undetected for long periods during peacetime while still receiving communications. Their undetectability serves to deter a preemptive first strike by an aggressor since

the submarines cannot be targeted. But in order to receive a nuclear strike order from the National Command Authorities, Fleet Ballistic Missile Submarines (SSBNs) must be able to maintain continuous communications reception, or at least know by the disappearance of that signal that they should move to an area where they can receive other signals. Without ELF, the requirement for continuous communications reception could detract from their ability to remain undetected and, thus, their deterrent effect since they would have to operate with antennas continuously at or near the surface of the ocean. Further, many of the Navy's attack submarine (SSN) operations require deeply submerged travel at high speeds. Communication to SSNs is more difficult when they are operating in this manner. Therefore, we need a communications system capable of providing continuous contact with our SSBNs without compromising their location, and to SSNs that are operating in deep and fast modes. The ELF Communications Program will provide highly reliable, continuous, near-global communications coverage from a location in the Continental United States. The ELF system characteristics would free the submarines from having to deploy an antenna at or near the surface to receive messages, and would permit them to operate within the greater depth and speed envelope of their capabilities. The ELF Communications Program, by reducing these operational constraints, provides a hedge against a future Soviet ability to detect, identify, and track the submarines because of near surface observable phenomena that result from current operational C³ procedures. We plan to continue development of transmitter and receiver equipment in preparation for a site location decision.

The Navy TACAMO aircraft are our principal survivable communication link to the fleet ballistic missile submarines. Currently one of these aircraft is continuously airborne somewhere in the Atlantic basin to ensure that Presidential direction can be transmitted to the SSBNs in that area. A similar requirement will exist in the Pacific as TRIDENT enters service. However, the present fleet of twelve aircraft does not enable us to maintain a full airborne posture. Further, some of the TACAMO aircraft are reaching the end of their serviceable lives. To meet the requirement of maintaining a survivable airborne posture in both the Atlantic and Pacific, we propose to purchase four new aircraft beginning in FY 1980. With the delivery of the two aircraft presently authorized to replace airframes lost in accidents, this will give us the minimum fleet needed to maintain an airborne posture and provide for a surge capability in times of emergency. In addition, we intend to rework the airframes of some older TACAMO aircraft so that they can fill mission requirements until replacement airframes can be delivered.

C. Communications with Adversary Leadership

In crisis and war, maintaining continuous communications with adversary leaders could serve to clarify events and control escalation through negotiation. At present, there is a multiple-path communications

link with the USSR by means of several teletype terminals in different locations. This is generally referred to as the MOLINK (Washington-Moscow link). To assure that the system is always operational, there is a one-way check every hour on an alternating country basis. This system, however, is not designed to survive a direct attack. The MOLINK system is supported by the Department of Defense as part of its communications support to the President, although it is not part of the strategic C³ system.

		<u>FY 1978</u> <u>Actual</u> <u>Funding</u>	<u>FY 1979</u> <u>Planned</u> <u>Funding</u>	<u>FY 1980</u> <u>Prop'd</u> <u>Funding</u>	<u>FY 1981</u> <u>Prop'd for</u> <u>Authori-</u> <u>zation</u>
Advanced Airborne Command Post	Development: \$ Millions	61.0	32.0	25.5	8.9
	Modifications: \$ Millions	-	10.0	118.7	139.4
Air Force Satellite Communications (AFSATCOM)	Development: \$ Millions	19.7	23.0	70.6	58.9
	Procurement: \$ Millions	15.8	32.3	29.8	35.7
Extremely Low Frequency Communications Program (ELF)	Development: \$ Millions	15.0	20.0	13.5	15.8
EC-130 TACAMO Aircraft	Procurement: \$ Millions	-	32.5	99.0	79.4
Airborne Launch Control System (ALCS). Uses existing assets to provide missile status and retargeting capability to the ALCS aircraft at a modest expenditure.	Modifications: \$ Millions	-	-	-	7.4
	Development: \$ Millions	-	5.0	5.0	-
SAC Digital Network (SACDIN) This is a communications network capable of providing two-way, hard-copy secure C³ between CINCSAC and Single Integrated Operational Plan (SIOP) executing Commanders for control and direction of the SAC forces.	Procurement: Development: \$ Millions	8.5	14.0	18.0	18.8

CHAPTER 2

THEATER NUCLEAR PROGRAMS

I. PROGRAM BASIS

A. Force Structure

U.S. theater nuclear warheads, deployed in Europe in support of NATO, number approximately 7000, distributed among bombs, short and medium range ballistic missile warheads, artillery projectiles, surface-to-air missiles, atomic demolition munitions, and depth bombs. In addition, POSEIDON submarine-launched ballistic missile reentry vehicles are committed to SACEUR for targeting.

B. Program Objectives

Improving the military effectiveness of our Battlefield and long-range theater nuclear systems is a key program objective for this Five Year Defense Plan (FYDP) period. Improving TNF safety and security is also a major objective. If TNF are to enhance the credibility of our deterrent and support a policy of escalation control, they should be highly survivable in the aggregate, at least against conventional and limited nuclear attack. Given the geographic disadvantages of our European deployment (relatively limited deployment area for NATO systems and short time-of-flight for Soviet-based ballistic missiles), absolute survivability against large nuclear attacks with no warning is probably infeasible and certainly excessively costly. NATO's deterrent posture, incorporating a sturdy conventional defense, credible theater sea and land-based nuclear forces, and the ultimate potential of U.S. (and allied) strategic nuclear forces, however, is designed to provide ample response options to Soviet aggression and make a Soviet nuclear attack highly unlikely.

Our forces must also meet the requirements of safe, secure, and relatively inexpensive peacetime operation. We, therefore, strive to ensure that we will receive adequate strategic and tactical warning, that we can act effectively and rapidly upon receipt of warning, and that the forces are sufficiently agile to move rapidly to more alert, dispersed and therefore more survivable postures. Central to the credibility of the theater nuclear posture is the requirement that at all stages of alert, our command, control and communication (C³) supporting these forces be reliable, secure, and adequately survivable.

II. PROGRAM DESCRIPTION AND STATUS

A. Improving the Military Effectiveness of Short-Range Systems

Short-range (battlefield) theater nuclear forces include dual-capable artillery (8" and 155mm) and LANCE and HONEST JOHN surface-to-surface missiles. Dual (nuclear and conventional), capable aircraft delivering nuclear bombs could also contribute to battlefield support.

The deployment of LANCE, a short-range, surface-to-surface ballistic missile is completed except for the production of approximately 340 warheads, which will be produced during FY 1980-82. These warheads will offer the option for inclusion of an enhanced radiation feature, should the President later decide to add such a capability.

Other programs include:

- The New 8-Inch Artillery Round is currently in engineering development.
- The New 155mm Artillery Round is also in engineering development but at an earlier stage.

The new eight inch round will be able to incorporate with shortened lead time an Enhanced Radiation (ER) warhead if the President approves production of Enhanced Radiation weapons.

B. Improving Long-Range Systems

Long-range theater nuclear systems provide the capability for strikes against targets throughout the theater either in the context of selective employment or general nuclear response. Our current capabilities include carrier and land-based tactical aircraft and U.S. and UK submarine-launched ballistic missiles which are allocated to NATO. The United States has undertaken the development of several candidate systems for improving these forces in support of long-range NATO planning. An appropriate mix to be determined through consultation with our NATO allies, can be drawn from among these ongoing programs:

1. PERSHING II, a modernized version of the currently-deployed PERSHING Ia system.
2. Ground Launched Cruise Missile (GLCM), an air-breathing, low-flying system in engineering development, with initial operational capability currently planned for the mid 1980s.

3. Sea-Launched Cruise Missile (SLCM), a system similar to the GLCM but planned for delivery from ships and submarines, which could if we decided to produce it reach initial operational capability in the mid 1980s. Production of an anti-ship version with a non-nuclear warhead is currently projected, but a nuclear land-attack version could be added to the program.

4. Air-Launched Cruise Missile (ALCM), currently considered a strategic system, could have a variety of theater applications.

5. New Medium Range Ballistic Missile (MRBM), currently in the concept development phase, if fully developed could be available for deployment by the mid-to-late 1980s.

6. Aircraft, includes currently deployed F-111s and F-4s. The nuclear capable F-16 will be deployed in Europe replacing U.S. F-4s. The F-18 is scheduled for carrier deployment by 1983-84.

C. Improving Support, Safety and Security

The credibility and operational effectiveness of our theater nuclear forces depend upon a variety of supporting capabilities. These include the capabilities to receive sufficient warning of impending attack, acquire targets and gain timely nuclear release. NATO's command, control, communications (C³) and intelligence systems, which provide this support, are intended to support a strategy of flexible response and escalation control should deterrence fail. Thus, they must support rapid, reliable and secure transmission of critical information, the necessary political and military consultations, the effective but restrained use of weapons and the ability to signal the adversary. They must be able to do so under conditions of conventional or even limited nuclear warfare.

Although as a rule we have not deployed separate, nuclear-dedicated command, control, communication or target acquisition systems, we must continue to improve our nuclear release procedures as well as the security, reliability, and survivability of the general purpose systems upon which we depend. We continue to pursue such improvements in close coordination with our allies as an essential part of NATO's Long Term Defense Plan (Task Force 6).

We have also given increasing attention to the peacetime safety and security of our theater nuclear forces. As we pursue more survivable, higher readiness theater nuclear forces (such as increased system mobility), we must necessarily expose these systems to an increasing threat to their peacetime security. We are, therefore, placing more emphasis, in close collaboration with the Department of Energy and its weapons laboratories, upon measures to make our theater nuclear systems safer and more secure. Among the improvements being considered for our newer theater nuclear systems are:

- Insensitive high explosive to reduce the risk that an accident or terrorist act could detonate the high explosive in a nuclear weapon leading to the scatter of special nuclear material.
- Improved Permissive Action Link (PAL). PALs require a unique combination to gain access or to arm a weapon.
- Enhanced Electrical Safety features and packaging intended to reduce still further the potential for accidental arming or detonation through electrical system malfunction.
- Nonviolent Command Disable systems that can render a weapon inoperable without risking dispersal of special nuclear materials or radiation associated with explosive destruction systems.
- Continuing storage site security upgrade and transportation safety and security features intended to increase the security of storage sites and weapon transportation vehicles against terrorist action.

D. Defensive Systems

These include land-based NIKE-HERCULES air defense systems and atomic demolition munitions.

E. Fleet Systems

These include fleet anti-air, anti-submarine, and anti-surface ship warfare (AAW, ASW, and ASUW) systems: ASROC, SUBROC, TERRIER and air delivered B-57 nuclear depth bombs. The TALOS AAW system was retired in October 1978.

CHAPTER 3
LAND FORCES

I. PROGRAM BASIS

United States land forces (Army and Marine Corps) are needed first of all to counter Soviet/Warsaw Pact ground forces in Europe as part of the NATO alliance. No other contingency places so great a demand on land forces, and no other, short of an attack on the U.S., is so critical to the vital interests of the United States. As the only military forces capable of holding or taking territory, the land forces are the mainstay of our conventional deterrent and war-fighting capability.

A. Force Structure

Our land forces consist of the following assets:

1. Active Forces

a. U.S. Army

16 Divisions	9 Major nondivisional units
4 Armored	4 Infantry Brigades
6 Mechanized Infantry	1 Armored Brigade
6 Light (4 Infantry, 1 Airborne, 1 Air Assault)	3 Armored Cavalry Regiments
	1 Cavalry Brigade (Air Combat)

b. U.S. Marine Corps

3 Divisions (essentially infantry, but can be committed as elements of Marine Amphibious Forces with organic armor, artillery and tactical air.)

c. Deployment of Forces

Europe

2 Armored Divisions	2 Armored Cavalry Regiments
2 Mechanized Infantry Divisions	3 Forward Deployed Brigades (one each from 3 CONUS-based divisions)
	1 Infantry Brigade (Berlin)

Pacific

1 Infantry Division (Korea)	1 Marine Division (Okinawa) (2 Brigades)
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Continental United States

4 Mechanized Infantry Divisions	1 Armored Cavalry Regiment
2 Armored Divisions	1 Armored Brigade
2 Infantry Divisions	1 Cavalry Brigade (Air Combat)
1 Airborne Division	1 Infantry Brigade
1 Air Assault Division	
2 Marine Divisions	

Other

1 Infantry Division (Hawaii)	1 Infantry Brigade (Alaska)
	1 Infantry Brigade (Panama Canal Zone)
	1 Marine Brigade (Hawaii)

d. Redeployment of U.S. Forces in Korea

Forces now in Korea will continue to be redeployed to the U.S. during 1979 and 1980. One infantry battalion returned in December 1978 and will be mechanized.

2. Reserve Forces (all located in the United States)

a. Selected Reserve Component units that round out active Army divisions upon mobilization are:

2 Mechanized Infantry Brigades
2 Infantry Brigades
11 Separate Battalions (6 Armored, 4 Mechanized, and 1 Infantry)

b. One Marine Division

c. Eight National Guard Divisions

2 Armored
1 Mechanized Infantry
5 Infantry

d. Twenty additional Reserve Component Separate Brigades

10 Infantry
3 Armored
7 Mechanized Infantry

B. Major Needs

A possible conflict between NATO and the Warsaw Pact is the most demanding contingency for U.S. land forces and is the event for which our capabilities are primarily designed. These forces must also be versatile enough to perform successfully in other areas of the world. Fortunately, most of the programs that improve our posture relative to a European war also enhance our capabilities to meet other contingencies.

We have identified several key areas in which our land forces need improvement. They are:

1. Initial combat capability against the Warsaw Pact threat.
2. Rapidity of response to a Warsaw Pact confrontation.
3. Air defense capabilities.
4. Ability to sustain combat operations.
5. Electronic warfare and C³I capabilities.
6. Capability to withstand a chemical or biological warfare attack and retaliate with chemical weapons.

II. PROGRAM DESCRIPTION

The five-year program places emphasis on those initiatives that address our major deficiencies. The program balances near-term measures and significant modernization that will come to fruition by the mid-1980s.

A. Improving initial combat capability against the Warsaw Pact threat:

1. Increase the number of howitzers in direct support artillery battalions in Europe and early-deploying CONUS-based units. Each of the three batteries in these battalions will be configured with eight howitzers (3x8) instead of the existing six.
2. Increase the number of maneuver battalions in early-deploying CONUS-based divisions by adding seven heavy battalions to the active Army. We are considering adding two more at the end of the five-year period.
3. Mechanize the 2nd infantry division, in part in-place and in part, as it returns from Korea. The mechanization of the 9th infantry division will also be considered, but has not been decided on.

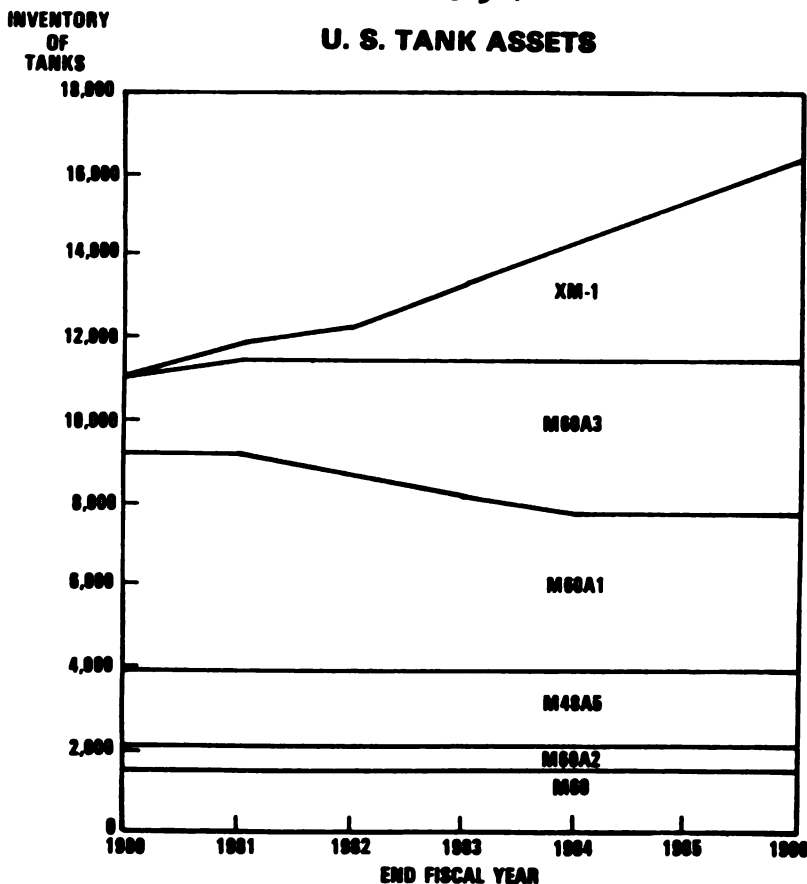
4. Replace existing Marine Corps 105mm howitzers in divisional artillery battalions with 155mm howitzers.
5. Shift an Army brigade to Northern Army Group (NORTHAG).
6. Close Combat Modernization

Close combat encompasses those capabilities that enable our land forces to engage directly the ground combat formations of the enemy in conventional land warfare. Our infantry, mechanized infantry and armor units are of primary importance within this mission area. Because of the emphasis that our potential adversaries have placed, and continue to place, on armored warfare, our major emphasis has been in force improvement for close combat. Specifically, we have continued to improve our tanks, infantry carriers, and direct fire anti-armor weapon systems.

a. Tanks

At the end of the FY 1979 funded delivery period our 105mm gun tank inventory will be 74 percent of estimated requirements. The proposed program will increase this to 86 percent by the end of the FY 1981 funded delivery period. Figure 3-1 shows the Army primary tank assets projected through 1986.

Chart 3-1
U. S. TANK ASSETS



	<u>FY 1978</u> <u>Actual</u> <u>Funding</u>	<u>FY 1979</u> <u>Planned</u> <u>Funding</u>	<u>FY 1980</u> <u>Prop'd</u> <u>Funding</u>	<u>FY 1981</u> <u>Prop'd for</u> <u>Authori-</u> <u>zation</u>
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XM-1

The XM-1 main battle tank will be an essential component in our plans to counter Warsaw Pact forces. We will procure the first XM-1s in FY 1979. Procurement funding is sufficient to achieve a 90 per month production rate by FY 1982. Funds are also provided for facilities to support a 150 per month emergency production rate.	Development: \$ Millions	119.6	78.4	31.6	2.5
	Procurement: Quantity	-	110	352	591
	\$ Millions	159.5	385.3	679.1	1,060.1

M-60 Series

M-60 production will cease by the end of FY 1980 as the XM-1 production rate is established. We will continue to upgrade existing M-60A1 tanks by modifications.	Procurement: Quantity	840	438	251	-
	\$ Millions	521.3	364.8	216.8	-
	Modifications: \$ Millions	54.7	144.0	125.3	134.4

b. Armored Carriers

M113 Series Armored Personnel Carriers

Procurement of M113 chassis for the Improved TOW Vehicle, the M548 Cargo Carrier, and the M125 Mortar Carrier will continue in FY 1980. Existing M113s are also undergoing four modification programs: conversion to diesel engines, improved suspension, improved cooling, and the addition of external fuel cells. The latter modification is being carried out to improve internal storage capacity and reduce the risks of fire in the crew compartment.	Procurement: Quantity	960	743	441	367
	\$ Millions	72.1	63.4	42.1	36.9
	Modifications: \$ Millions	83.9	110.4	110.3	137.0

	<u>FY 1978</u> <u>Actual</u> <u>Funding</u>	<u>FY 1979</u> <u>Planned</u> <u>Funding</u>	<u>FY 1980</u> <u>Prop'd</u> <u>Funding</u>	<u>FY 1981</u> <u>Prop'd for</u> <u>Authori-</u> <u>zation</u>
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IFV/CFV (formerly MICV)

The Infantry/Cavalry Fighting Vehicle (IFV/CFV) is an armored fighting vehicle that will replace the M113A1 in mechanized, infantry, tank and armored cavalry units. Its primary armament is the TOW anti-tank missile and a 25mm automatic dual-feed cannon (BUSHMASTER). The IFV/CFV will carry 9 men in its infantry role, 5 when configured as the CFV. FY 1980 marks the beginning of procurement, with the first vehicle to be delivered in May, 1981. The IFV/CFV is a major force improvement and will significantly improve the Army's anti-armor capability.	Development: \$ Millions	31.6	28.9	33.0	14.4
	Procurement: Quantity \$ Millions	-	-	208	400
		-	39	174	246

c. Anti-Armor Weapons

TOW Missile

In FY 1980 we will continue procurement of TOW anti-tank missiles.	Procurement: Quantity	12,261	10,920	16,805	12,735
	\$ Millions	75.9	49.1	77.0	61.4

7. Helicopter Modernization

The helicopter provides an added degree of mobility and firepower to our land forces. Improved technology and materials have increased helicopter power-to-weight ratios and reduced their vulnerability. However, the intensity of the modern battlefield has emphasized the need for special tactics to prevent unacceptable levels of attrition. The purpose of our helicopter program is to modernize our fleet of attack and transport helicopters.

	<u>FY 1978</u> <u>Actual</u> <u>Funding</u>	<u>FY 1979</u> <u>Planned</u> <u>Funding</u>	<u>FY 1980</u> <u>Prop'd</u> <u>Funding</u>	<u>FY 1981</u> <u>Prop'd for</u> <u>Authori-</u> <u>zation</u>
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Advanced Attack Helicopter
(AAH)

The AAH is the Army's anti-armor helicopter of the future. The current program calls for a 536 helicopter fleet. Development will continue in FY 1980 with initial procurement funding planned for FY 1981.

Development: \$ Millions	164.9	177.4	176.2	137.3
Procurement: Quantity	-	-	-	18
\$ Millions	-	-	-	318.0

Advanced Scout Helicopter
(ASH)

The ASH is intended to operate as an aerial scout air cavalry, artillery and attack helicopter units. When teamed with Advanced Attack Helicopter (AAH) the ASH will locate and designate targets for the AAH. Funding is provided in FY 1980 to initiate development of a low cost system based on an existing airframe.

Development: \$ Millions	-	5.5	12.5	-
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COBRA-TOW (AH-1S)

The AH-1S, armed with TOW antiarmor missile system remains the current attack helicopter system. This fleet is being formed by a new production program completed with FY 1979 funds and the continuing modification of AH-1G gunships to the AH-1S configuration. Funds are provided in FY 1980 and FY 1981 to complete this conversion. The conversion and new production program will give us a fleet of 972 AH-1Ss when completed.

Procurement: Quantity	83	66	-	-
\$ Millions	141.3	120.3	-	-
Modifications: Quantity	11	135	160	64
\$ Millions	57.7	195.6	257.5	100.4

	<u>FY 1978</u> <u>Actual</u> <u>Funding</u>	<u>FY 1979</u> <u>Planned</u> <u>Funding</u>	<u>FY 1980</u> <u>Prop'd</u> <u>Funding</u>	<u>FY 1981</u> <u>Prop'd for</u> <u>Authori-</u> <u>zation</u>
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HELLFIRE Missile System

The HELLFIRE anti-tank missile system is being developed for the AAH. HELLFIRE is designed to home in on a laser-illuminated target and represents a significant improvement over TOW in speed, range, and lethality. Production will begin in FY 1981.

Development: \$ Millions	52.4	65.1	73.0	73.7
Procurement: Quantity	-	-	-	600
\$ Millions	-	-	-	27.7

UH-60A BLACK HAWK

BLACK HAWK, formerly known as the Utility Tactical Transport Aviation System (UTTAS), is designed to replace the UH-1 (HUEY) in selected assault helicopter, air cavalry, and aeromedical evacuation units. Current plans are to procure a total of 1,107 aircraft. The initial production build-up will be completed with FY 1979 funds.

Development: \$ Millions	37.9	3.0	-	-
Procurement: Quantity	56	129	145	145
\$ Millions	235.6	388.9	380.2	373.0

8. Artillery Fire Support Modernization

Artillery fire support systems include artillery systems, surface-to-surface tactical missiles, rockets and associated target acquisition and fire control systems. Soviet improvements in this area have been considerable. We are pursuing the following programs:

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	<u>FY 1978 Actual Funding</u>	<u>FY 1979 Planned Funding</u>	<u>FY 1980 Prop'd Funding</u>	<u>FY 1981 Prop'd for Authori- zation</u>
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PERSHING

PERSHING IA is an intermediate range missile that has a nuclear delivery capability. Procurement in FY 1980 is for additional PERSHING IAs to maintain stockage levels. Development of the PERSHING II is an improvement to the PERSHING IA that it will replace. PERSHING II will utilize a new reentry vehicle, new propulsion stages, and new ground support equipment.

Development: \$ Millions	29.6	42.0	144.8	137.0
Procurement: \$ Millions	18.7	65.6	70.6	-

LANCE

We are procuring conventionally armed LANCE missiles to augment our non-nuclear fire support and continue to develop an improved conventional warhead utilizing high-density fragments in the submunitions. In addition, we are planning to upgrade some existing nuclear missiles by modifying the warheads and providing improved warheads for the remaining nuclear missiles programmed for procurement.

Development: \$ Millions	3.9	5.1	3.3	1.0
Procurement: \$ Millions	73.0	64.3	-	-

**General Support Rocket System
(GSRS)**

The GSRS is a high rate-of-fire free rocket system to be used to supplement cannon artillery fire.

Development: \$ Millions	46.4	62.8	72.3	71.3
Procurement: Quantity	-	-	-	1,764
\$ Millions	-	-	-	61.9

	<u>FY 1978</u> <u>Actual</u> <u>Funding</u>	<u>FY 1979</u> <u>Planned</u> <u>Funding</u>	<u>FY 1980</u> <u>Prop'd</u> <u>Funding</u>	<u>FY 1981</u> <u>Prop'd for</u> <u>Authori-</u> <u>zation</u>
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M109A2 Howitzer

We are procuring additional M109A2 self-propelled 155mm howitzers which are the mainstay of U.S. artillery. These weapons will be used to improve our capabilities in Europe.

Procurement:
Quantity
\$ Millions

250	136	96	-
98.2	64.6	46.0	-

M198 Howitzer

The M198 towed 155mm howitzer will replace the M114 towed howitzer currently in use in general support battalions in infantry and air assault divisions and corps. The M198 has 50 percent greater range and better reliability than the M114.

Development:
\$ Millions

2.2	10.5	7.1	8.0
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Procurement:
Quantity
\$ Millions

-	232	263	50
-	50.5	69.7	14.9

COPPERHEAD

COPPERHEAD is a 155mm laser-guided projectile in engineering development. The projectile will improve the capability of our artillery against point targets.

Development:
\$ Millions

36.0	13.0	7.1	8.0
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Procurement:
Quantity
\$ Millions

-	-	4,000	-
21.8	18.2	66.3	-

Ground Laser Locator
Designator (GLLD)

The GLLD will be used to illuminate/designate targets for COPPERHEAD and other guided projectiles, laser-guided bombs and HELLFIRE.

Development:
\$ Millions

4.1	9.2	3.6	-
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Procurement:
Quantity
\$ Millions

-	130	208	-
-	26.5	26.5	-

	<u>FY 1978</u> <u>Actual</u> <u>Funding</u>	<u>FY 1979</u> <u>Planned</u> <u>Funding</u>	<u>FY 1980</u> <u>Prop'd</u> <u>Funding</u>	<u>FY 1981</u> <u>Prop'd for</u> <u>Authori-</u> <u>zation</u>
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Counter-Battery Radars

We will procure AN/TPQ-37 and AN/TPQ-36 radars for location of hostile artillery and mortar batteries respectively, with sufficient accuracy for counter-battery fire.

Development:
\$ Millions

Procurement:
Quantity
\$ Millions

16.8	11.2	4.2	-
15	35	56	-
77.3	93.5	116.0	-

Target Acquisition

The Standoff Target Acquisition System (SOTAS) is under development to locate moving targets by radar from a helicopter. In addition, remotely piloted vehicles (RPVs) are being developed to locate targets, adjust artillery fire and designate targets for laser-guided weapons.

Development:
\$ Millions

13.1	55.1	115.9	80.1
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Fire Control

The TACFIRE system provides computer-assisted fire allocation and direction for artillery.

Development:
\$ Millions

Procurement:
Quantity
\$ Millions

.8	.7	-	-
11	31	43	-
33.2	87.4	94.8	-

9. Procurement of Artillery Ammunition

Ammunition procurement in FY 1980 will continue building up inventories of improved conventional munitions (ICMs), rocket-assisted projectiles (RAPs), propelling charges for the new long-range weapons, and scatterable mines. A total of \$413.7 million is requested for FY 1980 funding of these items for 155mm and 8-inch artillery. This amount includes the following items:

USMC		Army		Type Round
\$ Millions	Quantity	\$ Millions	Quantity	
-	-	66.3	4,000	155mm COPPERHEAD
1.2	4,000	-	-	155mm smoke
15.3	37,000	119.5	280,000	155mm improved conventional munitions
8.6	16,000	44.0	84,000	155mm rocket-assisted projectiles
17.5	5,000	28.2	15,000	155mm scatterable mines
-	-	18.8	168,000	155mm high explosive
5.5	45,000	85.3	655,000	155mm propelling charge
3.5	15,000	-	-	8-inch propelling charge

B. Improving Responsiveness to a Warsaw Pact Buildup

The possibility that a conflict may begin with little warning and be decided in its early stages demands that we design, equip and train our forces to maximize their early combat capability. Unit readiness has been the measure most often used to evaluate the early combat capability of the force.

Unit readiness can be viewed in two contexts:

Responsiveness -- The rapidity with which a force or unit can enter the theater and field of battle.

Personnel and materiel readiness -- Independently of responsiveness, if the unit or force is to function effectively, our military personnel must have the necessary equipment on hand, and in working order. Additionally, units must be fully manned with well trained troops who are skilled in the use of their equipment and weapons.

To improve unit readiness, we will:

1. Increase manning to 105 percent of those Army divisions scheduled for deployment to Europe by M+3 and for which POMCUS is currently in theater. This will insure at least 95 percent manning under immediate deployment contingencies.
2. Fill out existing POMCUS equipment requirements and preposition an additional 3 divisions of equipment in Europe by the end of FY 1982.
3. Increase training readiness.

National Training Center (NTC)

The Army is establishing the National Training Center (NTC) at Ft. Irwin, California. At this facility, the only such center because of the costs of creating realistic combat conditions, combat battalions will undergo two weeks of simulated combat training. Units will be transported to Ft. Irwin for training. When fully operational in FY 1984, the NTC will have the capacity to train 42 battalions per year. Active and Reserve battalions (tank, mechanized infantry, and armored cavalry), which meet readiness standards at their home bases will be eligible for NTC training.

		<u>FY 1978</u> <u>Actual</u> <u>Funding</u>	<u>FY 1979</u> <u>Planned</u> <u>Funding</u>	<u>FY 1980</u> <u>Prop'd</u> <u>Funding</u>	<u>FY 1981</u> <u>Prop'd for</u> <u>Authori-</u> <u>zation</u>
<u>National Training Center</u>	\$ Millions	-	-	29.6	28.2

C. Improving Air Defense Capabilities

For the near term, the Army is continuing to upgrade existing systems and procure additional IMPROVED HAWK missiles to overcome qualitative and quantitative deficiencies. Longer-term replacements continue in development or procurement for all the major army air defense systems.

<u>System Type</u>	<u>Existing System</u>	<u>Replacement System</u>
High-to-medium altitude missiles (which have some low altitude capability)	HAWK NIKE HERCULES	PATRIOT
Short-range missiles	CHAPARRAL	U.S. ROLAND
Man-portable missiles	REDEYE	STINGER
Mobile Guns	VULCAN	DIVAD

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		<u>FY 1978</u> <u>Actual</u> <u>Funding</u>	<u>FY 1979</u> <u>Planned</u> <u>Funding</u>	<u>FY 1980</u> <u>Prop'd</u> <u>Funding</u>	<u>FY 1981</u> <u>Prop'd for</u> <u>Authori-</u> <u>zation</u>
<u>IMPROVED HAWK</u>					
Additional IMPROVED HAWK missiles will be procured to increase stockage.	Development: \$ Millions	12.5	3.2	10.1	6.4
	Procurement: Quantity	559	608	197	-
	\$ Millions	96.9	72.3	36.5	9.4
<u>PATRIOT</u>					
Currently in full engineering development, PATRIOT testing has been so successful that the program has been revised to accelerate the IOC to April 1982. Because of the interest of our NATO allies, the possibility of PATRIOT co-production is being explored.	Development: \$ Millions	214.4	228.4	128.7	31.7
	Procurement: Quantity	-	-	155	184
	\$ Millions	-	67.3	440.7	439.3
<u>CHAPARRAL</u>					
We are continuing procurement of missiles and modifications resulting in an improved version of CHAPARRAL. It is expected that CHAPARRAL will remain in service beyond the introduction of ROLAND.	Development: \$ Millions	4.2	.1	2.1	-
	Procurement: Quantity	870	850	-	-
	\$ Millions	34.1	34.7	3.2	3.2
	Modifications: \$ Millions	-	7.1	16.1	-
<u>U.S. ROLAND</u>					
ROLAND, an all-weather replacement/complement to CHAPARRAL is completing development. Production will begin in FY 1979.	Development: \$ Millions	75.4	22.7	11.3	7.0
	Procurement: Quantity	-	75	410	970
	\$ Millions	55.7	167.6	296.9	520.6

		<u>FY 1978</u> <u>Actual</u> <u>Funding</u>	<u>FY 1979</u> <u>Planned</u> <u>Funding</u>	<u>FY 1980</u> <u>Prop'd</u> <u>Funding</u>	<u>FY 1981</u> <u>Prop'd for</u> <u>Authori-</u> <u>zation</u>
<u>STINGER</u>					
Procurement of the basic STINGER, a man-portable missile, began in FY 1978. An advanced version will enter production in FY 1981.	Development: \$ Millions	12.0	24.6	17.6	5.4
	Procurement: Quantity	258	2,678	2,654	2,758
	\$ Millions	38.2	123.1	91.1	97.9
<u>DIVAD</u>					
The Division Air Defense (DIVAD) Gun System is under development to provide a low-altitude forward air defense capability.	Development: \$ Millions	17.0	75.7	25.7	40.3
	Procurement: Quantity	-	-	-	12
	\$ Millions	-	-	-	274.8

D. Enhancing Ability to Sustain Combat Operations

We are currently taking steps to improve the sustainability of the force. The concept of war reserve stocks (WRS) is vital to our combat capability. We must procure and maintain sufficient quantities of end items, spare and repair parts, munitions, and fuels to insure that we can sustain our forces in battle. The necessary level of WRS is, of course, sensitive to assumptions of conflict location, duration, and intensity. We plan to:

1. Increase prepositioned war reserve materiel stocks.
2. Secure greater host nation support and to the extent still necessary, add essential combat service support units in Europe.
3. Increase standardization of equipment ammunition and fuels for greater interoperability with the land forces of our NATO allies.

E. Improving Capabilities in the Areas of Electronic Warfare and C³I

Programs to improve our communications capabilities reflect our concern over the security, survivability and interoperability of these systems. Electronic warfare programs are designed to offset command, control, communications, and surveillance advances of our potential adversaries.

1. Tactical Communications

	<u>FY 1978 Actual Funding</u>	<u>FY 1979 Planned Funding</u>	<u>FY 1980 Prop'd Funding</u>	<u>FY 1981 Prop'd for Authori- zation</u>	
<u>Joint Tactical Communications Program (TRI-TAC)</u>					
<p>A joint program that will provide common multichannel systems for all of the services for greater interoperability. The new systems with greater security, reliability, and survivability will be capable of interfacing with existing and planned allied systems.</p>	Development: \$ Millions	57.6	55.2	54.8	36.0
	Procurement: \$ Millions	-	-	47.2	-
<u>Combat Net Radio (SINGARS-V)</u>					
<p>Command and control of tactical forces at brigade level and below is exercised primarily through the use of combat net radios (CNR). We are developing for the use of all the Services, a secure jam-resistant combat net radio including manpack, vehicular and airborne versions. The program, in the advanced development phase, is called the Single Channel Ground and Airborne Radio Subsystem (SINGARS-V). The U.S. has offered to NATO nations the opportunity to participate in the SINGARS-V program through membership in the Interface Control and Test Integration Working Groups.</p>	Development: \$ Millions	8.0	12.7	18.5	14.2

2. Ground Mobile Forces (GMF) Satellite Communications

The GMF Program is designed to provide tactical satellite terminals with an anti-jam capability for the Army, Air Force and the Marine Corps.

GMF terminals will provide the tactical forces with a reliable communications capability that is independent of terrestrial networks and the physical conditions of the terrain where operations are being supported. In addition, these terminals are all highly transportable allowing quick set-up and tear-down when an operational unit is relocated. The GMF program consists of the following four projects:

		<u>FY 1978</u> <u>Actual</u> <u>Funding</u>	<u>FY 1979</u> <u>Planned</u> <u>Funding</u>	<u>FY 1980</u> <u>Prop'd</u> <u>Funding</u>	<u>FY 1981</u> <u>Prop'd for</u> <u>Authori-</u> <u>zation</u>
<u>MSC-64 UHF Terminals</u>					
The Army is procuring 200 MSC-64 (UHF) terminals.	Procurement:				
	Quantity	16	8	100	75
	\$ Millions	9.0	3.2	27.2	21.9
<u>MSC-85 and TSC-93 SHF Terminals</u>					
Procurement of MSC-85 and TSC-93 (SHF) terminals for the Army will commence in FY 1979. Follow-on funding for these terminals is in FY 1981 and beyond because of the time lag between contract award and first terminal delivery.	Procurement:				
	Quantity	-	30	-	72
	\$ Millions	-	28.5	-	52.1
<u>PSC-1 Manpack UHF Terminal</u>					
The first PSC-1s will be procured in FY 1979. Follow-on procurement is anticipated in FY 1981.	Procurement:				
	Quantity	-	100	-	70
	\$ Millions	-	5.3	-	2.9
<u>MSC-65 UHF Terminal</u>					
Procurement of the MSC-65, which will be used by our tactical forces, will begin in FY 1981.	Procurement:				
	Quantity	-	-	-	120
	\$ Millions	-	-	-	24.4

3. Electronic Warfare

		<u>FY 1978</u>	<u>FY 1979</u>	<u>FY 1980</u>	<u>FY 1981</u>
		<u>Actual</u>	<u>Planned</u>	<u>Prop'd</u>	<u>Prop'd for</u>
		<u>Funding</u>	<u>Funding</u>	<u>Funding</u>	<u>Authori-</u>
					<u>zation</u>
<u>Expendable Counter-C³ Jammers</u>					
The disruption of the C ³ utilized by enemy artillery would dramatically reduce their effectiveness. Our studies indicate that artillery-launched expendable jammers would be particularly effective in this role.	Development:				
	\$ Millions	1.0	7.9	8.8	19.7
<u>Ground-Based Signal Intelligence Sensors</u>					
We are continuing procurement of TEAMPACK and TRAIL-BLAZER assets for Army forward area deployment.	Procurement:				
	\$ Millions	19.6	83.1	28.0	-

F. Enhancing Chemical Warfare and NBC Defense Capabilities

The objectives of the U.S. chemical warfare (CW) program are to deter the use of chemical weapons by other nations and to provide an option to retaliate in kind should deterrence fail. The United States, as a signatory to the Geneva Protocol, has renounced the first use of lethal chemical weapons or incapacitants. However, the United States and many of the other signatories have retained the right to retaliate with chemical weapons against a chemical attack.

The Soviets continue to maintain a significant chemical warfare capability. The evidence is that they regard chemical capabilities as an integral part of their offensive warfighting capability.

We continue to hope for success in reaching an agreement with the USSR banning offense CW weapons. In the absence of an adequate agreement eliminating the threat of chemical warfare and in view of the

impressive Soviet CW capabilities, it seems prudent to deploy and maintain a credible chemical warfare capability. We must ensure that there are no real or Soviet-perceived military or political advantages in initiating chemical warfare.

To achieve this capability we are placing primary emphasis on Nuclear, Biological, Chemical (NBC) protection for the soldier. The program for development of protective equipment includes: improved protection against chemical agents, improved decontamination methods, collective protection for vehicles and shelters, CW agent detection devices and training aids. The next area of importance is our CW munitions retaliatory stockpile. We intend to maintain a stockpile that can be rapidly deployed and has a reasonable employment flexibility. Modernization of our chemical warfare retaliatory stockpile could be accomplished either by new production of existing munitions or by converting the stockpile to binary munitions. A binary munition consists of two chemical agents which separately are harmless, but when mixed become toxic. These agents would be mixed during the delivery phase (i.e., after a shell is fired, or bomb is dropped).

Army NBC readiness will be increased by force structure changes. Eleven chemical defense companies will be assigned to Army combat divisions and corps support commands by the end of FY 1980. In addition, NBC reconnaissance and decontamination teams will be provided to other Army elements to upgrade overall NBC defense capabilities.

		<u>FY 1978</u>	<u>FY 1979</u>	<u>FY 1980</u>	<u>FY 1981</u>
		<u>Actual</u>	<u>Planned</u>	<u>Prop'd</u>	<u>Prop'd for</u>
		<u>Funding</u>	<u>Funding</u>	<u>Funding</u>	<u>Authori-</u>
					<u>zation</u>
<u>NBC Defense</u>					
We are procuring additional detection, medical defense, protective and decontamination equipment in FY 1980 to reduce our vulnerability to chemical warfare.	Development: \$ Millions	34.5	46.2	63.6	92.1
	Procurement: \$ Millions	136.9	164.4	139.1	134.5
<u>Chemical Warfare</u>					
In FY 1980 we will continue development of chemical agents and munitions to maintain our chemical munitions stockpile. Procurement funding will be largely for renovation of existing chemical munitions inventories.	Development: \$ Millions	7.2	5.4	6.1	3.7
	Procurement: \$ Millions	-	4.6	21.8	-

CHAPTER 4

NAVAL FORCES

I. PROGRAM BASIS

The total Department of the Navy General Purpose Forces budget, excluding naval aviation, for FY 1980 is about \$14 billion. This is a little over 10 percent of the DoD budget.

A. Naval Support of National Security Objectives

Naval forces contribute to national security objectives across a broad spectrum of National Military Strategy. Prominent among Naval roles supporting National Military Strategy are:

<u>Security Objective</u>	<u>Naval Role</u>
Maintenance of Stability	Forward Deployments
Containment of Crisis	Measured projection of power against the shore Superiority at sea in a crisis setting
Deterrence of a Global War	Defense of sea lines of communication (SLOCs) Reinforcement of allies Pressure upon the Soviets Hedge against uncertainties of the distant future

B. Force Structure

1. U.S. General Purpose Naval Forces that may be used to accomplish these missions are briefly summarized below:

TABLE 4-1

Naval General Purpose Ship Force Levels
(End FY 1979)

	<u>Active Fleet</u>	<u>Naval Reserve Force</u>	<u>Naval Fleet Auxiliary Force</u>	<u>Ship Operating Forces</u>
Aircraft Carriers	13			13
Surface Combatants				
Cruisers	28			28
Destroyers	72	28		100
Frigates	65			65
Submarines nuclear powered				
Attack	77			77
Patrol Combatants	1			1
Amphibious Warfare Ships	65	3		68
Mine Warfare Ships	3	22		25
Mobile Logistics Ships	56	-	12	68
Fleet Support Ships	<u>18</u>	<u>6</u>	<u>10</u>	<u>34</u>
Totals	398	59	22	479

2. Current Deployment of Major Naval Forces

Current (June 1978) Levels of Peacetime Deployment Requirements

	<u>Western Pacific</u>	<u>Mediterranean</u>	<u>Atlantic</u>	<u>Mideast</u>
Aircraft Carriers	2	2	-	-
Surface Combatant Ships	19	14	4	2
Attack Submarines	6	4	1	-
MLSF (Mobile Logistic Support Force) Ships	11 <u>1/</u>	10 <u>1/</u>	-	-
Amphibious Ships	2 ARGs	ARG	ARG <u>2/</u>	-

1/ Includes Naval Fleet Auxiliary Force.

2/ The Atlantic Fleet Amphibious Ready Group (ARG) is not deployed on a full time basis.

Note: Under normal peacetime conditions, about 30 percent of the active operating force is deployed overseas in a full operationally ready status. An additional 40 percent of the active forces, also operationally ready, is assigned to operating fleets based in U.S. ports, ready for immediate deployment or reinforcement of overseas U.S. naval forces in the case of war, contingency, or crisis. The remaining 30 percent of the fleet is in a reduced operational status, undergoing planned maintenance and conducting basic training. In times of tension or crisis, the percentage of the fleet which can be deployed overseas can be increased.

Land-Based ASW Squadrons

<u>Active</u>	<u>Reserve Component Forces</u>	<u>Total</u>
24	13	37

Note: Naval tactical aircraft are treated in Chapter 5; Marine ground forces are treated in Chapter 3.

C. Key Needs

Major objectives for naval forces in this five-year defense program are:

1. Countering the Soviet threat from the air;
2. Countering the submarine threat;
3. Improving world-wide presence and crisis management forces;
4. Improving mine warfare capabilities; and
5. Improving fleet readiness.

II. PROGRAM DESCRIPTION

A. Countering the Threat from the Air

Soviet aircraft are a serious threat to our Naval forces. This is due primarily to the growing force of BACKFIRE bombers assigned to Soviet naval air forces. The programs most needed to combat this threat are carrier air forces, air defense ships and systems, and land-based aircraft. These needs are expanded upon below (carrier aircraft needs are outlined in the Tactical Air section of this report).

1. Sea-Based Air Platforms

As projected last year during the debate on the FY 1979 Authorization Bill, we have included a CVV in the FY 1980 shipbuilding program. Construction of this aircraft carrier will permit the United States to maintain an inventory of 12 active carriers through the turn of the century while the life extension program for existing carriers is being carried out. Twelve active, deployable carriers are sufficient to maintain our current posture of stationing two carriers in the Mediterranean and two in the Western Pacific theater. This assumes we can continue to homeport at least one carrier overseas.

Construction of this new carrier would mark an essential and important step in reversing the trend of the last decade toward ever larger, more expensive ships. This Administration is fully committed to reversing this trend.

The CVV as currently designed will be equivalent in size and a far more capable ship than the one it replaces -- the U.S.S. Midway. With respect to the most likely threat -- the Soviet Union -- it will also be much more capable than any carrier projected to be built

outside the United States. The CVV will have improved aviation characteristics, CV/CVN habitability standards and a capability to operate all of the Navy's current aircraft. The U.S.S. Midway cannot now support S-3, F-14, or E-2C operations. The hangar height (7.47 meters) permits full flexibility for all aircraft maintenance functions; and elevators, catapults, and other aviation features will be capable of supporting all existing Navy carrier-based aircraft. This ship will be constructed with substantial improvements in passive protection features, particularly against cruise missiles. These features are equivalent to those of the advanced redesign of the U.S.S. Nimitz that was extensively examined in the Navy's 1977-78 Assessment of Sea-Based Air Platforms. The CVV's normal operating airwing is expected to include about 60-65 modern aircraft, compared with about 90 for existing Forrestal/Nimitz CV/CVNs.

In proposing this CVV, we have considered the fact that there will be a premium paid for a ship of an essentially new design. However, when we reviewed the implications of constructing a CVN or a CV-67 (Kennedy Class) redesigned to incorporate passive protection features that could permit those carriers to be equivalent in survivability to the CVV, we found that added building costs would still be about \$80-180 million. In addition, the 30-year life-cycle costs of the redesigned CV-67 or CVN would be about \$5-6 billion greater than the life-cycle costs of the current CVV design if the full cost of additional aircraft and other support were to be included. We have concluded therefore that the most appropriate course of action to reverse the past trend toward more expensive ships is to request a CVV. The CVV provides the capability that is needed, and is clearly the appropriate lower-cost carrier alternative at this time. The CV-67 and CVN would be more capable ships than the CVV but they would also be more expensive, particularly over the long-term if the full cost of the additional aircraft is considered. The CVV gives us sufficient added capability in the carrier force to meet mission needs. We can buy more overall Naval combat capability by taking those incremental dollars needed for a CV-67 or CVN and applying them toward meeting more urgent needs in Naval programs such as those discussed below.

2. AEGIS Ships

We have several programs underway to improve the defenses of carrier task forces against BACKFIRE attacks. The most important new development is AEGIS, an air defense system being deployed on the new DDG-47 class of guided-missile destroyers. AEGIS, which features a phased-array radar and automated fire control systems, will enable a single ship to engage many enemy cruise missiles or aircraft simultaneously. We are also developing a new surface-to-air missile -- the STANDARD Missile-2 (SM-2) -- to take advantage of the longer detection

ranges and greater firepower made possible with AEGIS. When deployed in the mid 1980s, the DDG-47s will become the linchpin of the area Anti-Air Warfare (AAW) defense of our major Naval task forces. The shipbuilding program contains 10 DDG-47s in FY 1980-84. These ships are essential if the fleet is to fight effectively in high threat areas.

3. Land-Based Aircraft

To reach some important shipping lanes, BACKFIRE bombers must fly through areas where they could be detected and, perhaps, intercepted by U.S. or allied land-based aircraft. One such area is the gap between Greenland, Iceland, and the United Kingdom, the Soviet access route to Atlantic shipping. We have a squadron of Air Force F-4 air defense interceptors stationed in Iceland and are deploying AWACS aircraft on a rotational basis in this area to provide warning of BACKFIRE raids. With such warning, interceptors both in Iceland and the United Kingdom would be able to engage the enemy bombers. In addition, early warning from the AWACS will increase the effectiveness of F-14s based on carriers in the Atlantic. We are studying the further use of land-based aircraft for defense of the sea lanes against air threats.

		<u>FY 1978</u>	<u>FY 1979</u>	<u>FY 1980</u>	<u>FY 1981</u>
		<u>Actual</u>	<u>Planned</u>	<u>Prop'd</u>	<u>Prop'd for</u>
		<u>Funding</u>	<u>Funding</u>	<u>Funding</u>	<u>Authori-</u>
					<u>zation</u>
CVV Carrier	\$ Millions	5.8	19.6	1,624.0	-
AEGIS Armed Destroyers (DDG-47)	\$ Millions	938.6	10.2	825.4	1,578.1

B. Countering the Submarine Threat

While Soviet submarines may become quieter and more difficult to detect, our Navy has maintained and in some cases even widened our technological lead.

However, it is important to keep these trends in perspective. The Soviet Submarine Fleet is large and is growing more modern while decreasing in numbers. Most of the decrease is related to a forecast retirement of older diesel submarines with coastal defense capability. The growth in nuclear submarine assets as well as projected retention of highly capable diesel attack submarines in their inventory result in a net increase in Soviet capability.

The Soviets have a large and increasingly modern force and they are developing new weapons and sensors to make their submarines more effective. All Soviet submarines carry torpedoes; some carry

antiship cruise missiles. They have twenty years of experience with submarine-launched cruise missiles, while SSN-launched HARPOONS are just now entering our fleet. This large, effective, and well equipped submarine force represents a potentially serious threat to U.S. naval power.

The most important programs needed to keep our lead in ASW and address significant shortfalls are listed below.

1. Surface Warship Tactical Towed Array Sonar (TACTAS)

Towed arrays are the most important surface ship Anti-Submarine Warfare (ASW) development in a generation. The SQR-18 system is a long-range sensor currently in production for backfit in existing ships. The first ship to be configured with this array will be deployed early in 1979. In FY 1980, we have budgeted for 12 sets of SQR-18A array/electronics for backfit in our KNOX class (FF-1052) frigates. A total of 46 SQR-18 TACTAS systems will be installed in FF-1052 ships under the present plan.

The FY 1979 Appropriations Act directs competitive development of the SQR-19 program. We will restructure the program accordingly.

2. Light Airborne Multipurpose System (LAMPS) MK III

Our studies continue to show that the LAMPS MK III system is needed to exploit fully the long-range ASW detections that are available with the introduction of tactical towed array sonars. The combination of towed arrays and an extended-range LAMPS helicopter promises to provide the fleet with a major qualitative change in surface-ship ASW capability.

After an extensive review of the LAMPS MK III program last year, the Navy identified about \$400 million in total program savings that can be effected without degrading the combat ASW capabilities of the system. Based on Congressional approval of the Navy's reprogramming request for FY 1979 R&D funds, we also anticipate that the LAMPS IOC can still be achieved. We believe that these cost reduction efforts and management improvements will provide the Navy with an affordable and effective LAMPS MK III system.

3. Surveillance Towed Array Sensor System (SURTASS)

SURTASS has encountered additional schedule slippage. Although acoustic performance and data relay capabilities have been satisfactory, full system testing in July/August of 1978 uncovered significant problems.

Although the Navy is confident that these problems can be corrected, the modifications will take time. The Navy plans to conduct further testing at sea. After a series of corrections, the system will be retested.

While the technical problems are not great, this restructured program poses potentially more serious scheduling problems. We currently plan to award contracts for the two Congressionally approved FY-1979 T-AGOS sonar ships in September 1979 because by that time significant at-sea testing will have been completed to a degree that should justify commitment of ship construction funds. We are requesting five additional ships in the FY 1980 budget to maintain an unbroken construction schedule. Since mission equipment will be installed after ship delivery and the ship construction lead time is two and a half years, the first ship will be delivered at the same time as the fully tested and approved mission electronics equipment.

We plan to review the results of the Navy's at-sea testing prior to approving the award of the first ship construction contract.

4. Patrol Aircraft

Analyses continue to suggest that prior to and during a major conflict with the Soviets, our land-based patrol aircraft (P-3), would make the largest contribution to our anti-submarine warfare efforts.

Our plans to continue production of P-3C aircraft have not changed and we will continue to produce them at the rate of 12 per year. Based on a review of available assets and current modernization programs for existing P-3 aircraft, it was determined that some important avionics systems must be modernized if these aircraft are to provide the principal means of performing our maritime patrol functions through the 1980s. Accordingly our FY 1980 program expands on past modernization plans and initiates a program of backfitting improved communication and non-acoustic sensors into existing P-3s.

5. Attack Submarine Programs

Congress has authorized the construction of 33 SSN-688 Class nuclear attack submarines, eight of which have been commissioned. These submarines have met or exceeded all performance goals to date, and, with continued upgrading of supporting combat systems, are expected to retain their qualitative advantage over the numerically superior Soviet submarine force. However, construction problems will delay the attainment of a 90-SSN force level.

		<u>FY 1978</u> <u>Actual</u> <u>Funding</u>	<u>FY 1979</u> <u>Planned</u> <u>Funding</u>	<u>FY 1980</u> <u>Prop'd</u> <u>Funding</u>	<u>FY 1981</u> <u>Prop'd for</u> <u>Authori-</u> <u>zation</u>
SQR-18 Towed Array Sonar Backfit Program. SQR-19 Towed Array Sonar development and acquisition	\$ Millions	29.9	51.6	49.6	79.0
Modification and Acquisition of Light Airborne Multi-Purpose System (LAMPS MK III) and SH-2	\$ Millions	150.6	108.8	192.4	108.1
Surveillance Towed Array Sensor System (SURTASS)	\$ Millions	16.1	50.9	84.0	68.7
P-3 Aircraft continued production; backfit of improved communications and sensors	\$ Millions	324.9	347.1	382.4	378.8
SSN-688 Attack Submarine Program	\$ Millions	416.3	738.3	522.9	504.5

C. Multipurpose and Power Projection Forces

One of the very real strengths of our Navy is its worldwide display of American military presence and resolve. The U.S. Sixth and Seventh Fleets in the Mediterranean and Western Pacific demonstrate a continuing commitment to international peace. These forces also stand ready to respond to fast-moving, short-warning crises that require U.S. forces at the scene of action.

To be at the scene, and to be able to project power far from U.S. shores, requires large numbers of deployed units -- planes and ships, including carrier-based air support and amphibious lift for the Marines. These deployed forces require a total peacetime force several times their number to provide backup for the turnaround time for repair, transit, and crew time at home.

We need numbers. That means resisting the temptation to pursue the last, costly increment of capability at the expense of adequate numbers. It means investigating surface ship, carrier, and submarine designs so as to provide capabilities that complement our existing high-cost designs yet allow unit costs low enough to permit large construction quantities. It means imaginative, often courageous decisions to use new technology or new tactics to reverse the trend toward fewer, more expensive (albeit more capable) ships and aircraft.

The carrier issue has already been discussed. DoD is actively studying new design destroyer and submarine options. Meanwhile several near-term authorization programs will provide the numbers and capabilities required in the 1980s.

1. Surface Combatants

Surface Combatant force levels are expected to increase until the mid-to-late 1980s because of the procurement of the DD-963 and the FFG-7 class warships. However, barring further service life extensions, projected block retirements of older classes in the 1980s and 1990s will require continued new ship construction through the 1980s. Otherwise force levels will start to decline significantly by the early 1990s. The DD-931/945 and the DDG-31 classes are planned for retirement during the mid-1980s; the DDG-37 class will be retired during the late 1980s; the DDG-2, FF-1040/1052 and CG-16/26 classes will reach the end of their expected service lives in the 1990s. A mix of both highly capable, more expensive ships (DDG-47) and moderately capable, less expensive surface combatants (FFG-7) is being requested to replace these ships. A DDX, which is capable of supporting a carrier battle group, is planned to augment the DDG-47. Options intended to yield more affordable surface combatants to lessen future decreases in force levels are also being explored.

a. USS Oliver Hazard Perry Class Guided Missile Frigate (FFG-7)

Authorization of funding for an additional six FFG-7s is requested in FY 1980. This program is designed to offset some of the existing numerical deficiencies in surface combatants required for sea lane defense as well as other operations in ocean areas where the threat is less concentrated.

b. DDG-2 Guided Missile Destroyer Modernization

Ten of the newer DDG-2 class guided missile destroyers will be modernized in the next four years, with the first modernization scheduled in FY 1980. This upgrade will provide the HARPOON surface-to-surface anti-ship missile, three new radars, and improved communications, air target tracking and gunfire control systems. It will also provide many hull, mechanical, and electrical improvements needed to extend service life from 30 to 35 years. Current plans are to not modernize the remaining 13 ships in the class but instead to phase them out at the end of their normal service life. This decision will be reexamined in subsequent years as future options for shipboard SAM improvements are developed for possible use on DDG-2s or FFG-7s. In the interim, additional emphasis is being placed on procurement of new ships of the FFG-7 class.

2. Amphibious Lift Capability

a. Amphibious ships provide the capability to embark, transport, and land U.S. Marine forces. This amphibious force is a key element of U.S. naval power projection capabilities.

The current program objective for amphibious ships is the capability to lift the Assault Echelon (AE) of 1.15 Marine Amphibious Forces (MAF). A typically configured MAF consists of a Marine division, air wing, headquarters element and supporting logistics forces.

This amphibious force provides the capability to conduct a MAF size assault after shifting ships from one ocean to the other. In peacetime, the amphibious force will provide the capability to keep up to four Marine Amphibious Units (MAU, an infantry battalion/ aircraft squadron size airground task force) deployed at sea in forward areas.

The United States will have 65 active and three Naval Reserve Force (NRF) amphibious ships at the end FY 1979. The end FY 1979 force will include four newly constructed Amphibious Assault Ships (LHAs) with the final LHA to be delivered in FY 1980.

Last year we indicated that we intended to start in FY 1981 the procurement of a new class of amphibious ship, the Landing Ship Dock (LSD-41). We have not included the LSD-41 in this year's program and will not until we assess changes in future amphibious lift requirements due to the possible introduction of new, more capable units such as the air cushioned landing craft, the LCM-9 landing craft, and the amphibious tracked vehicle.

b. Assault Craft

At present, the surface portion of the ship-to-shore movement in an amphibious assault is conducted by landing craft and amphibious tractors that use World War II technology. These landing craft and amphibious vehicles are limited to speeds of about eight knots which makes them quite vulnerable and limits them to favorable beach and tide conditions. We are continuing to develop the most cost/effective design for a Landing Craft, Air Cushion (LCAC) capable of delivering troops and cargo from ship to shore and inland from the shore line. In addition to the advantages of high speed the LCAC will have assault capabilities over about four times the number of beaches now suitable for conventional craft. Two advanced development prototypes have been constructed under the Amphibious Assault Landing Craft Program. After test and evaluation, the LCAC procurement program is planned to start in FY 1982.

		FY 1978 Actual Funding	FY 1979 Planned Funding	FY 1980 Prop'd Funding	FY 1981 Prop'd for Authori- zation
USS Oliver Hazard Perry Class Guided Missile Frigate (FFG-7) Procurement	\$ Millions	1,203.6	1,710.6	1,261.5	1,486.1
DDG-2 Guided Missile Destroyer Modernization	\$ Millions	102.4	132.0	225.8	577.9
Assault Craft - Land Craft, Air Cushion (LCAC)	\$ Millions	1.5	1.5	5.8	5.9

D. Correcting the Mine Warfare Imbalance

The Soviet mine threat is increasing while our capability to counter the threat is decreasing. The Soviets continue to extend their mine capability, and they have an enormous inventory of widely varied mine types. We must ensure that we have mine warfare capabilities sufficient to meet this threat.

1. Mine Countermeasure (MCM) Ships

The three active Ocean Minesweepers (MSO) and the 22 MSOs' in the Naval Reserve force are reaching the end of their service lives. The MSO capabilities in shallow water are being assumed by the airborne MCM helicopter through development of helicopter minehunting and minesweeping equipment. The MSO deep water MCM capabilities are limited. The new MCM ship will more effectively, and to a greater water depth, counter the Soviet deep water mine threat. MCM shipbuilding plans have been delayed for a year while mine hunting hardware is developed and ship design is modified.

2. Mines

Mines are cost/effective sea control weapons used to close ports, to form barriers at geographic choke points, and to attrite or deter transiting surface ships or submarines. The mining of Haiphong demonstrated their deterrent effect. Four mine programs support this capability:

a. CAPTOR -- a deepwater ASW mine able to detect, classify, and launch a MK-46 Torpedo at a transiting submerged submarine.

b. QUICKSTRIKE -- a backfit program to convert existing bombs to mines and to develop a new 2,000 lb (909 kg.) mine.

c. Intermediate Water Depth (IWD) Mine -- for use against submarines and surface ships in water depths between the effective depths of CAPTOR and QUICKSTRIKE.

d. Submarine-Launched Mobile Mine (SLMM) -- a self-propelled, submarine-launched mine that will permit covert mining of waters inaccessible to other delivery vehicles.

		FY 1978 Actual Funding	FY 1979 Planned Funding	FY 1980 Prop'd Funding	FY 1981 Prop'd for Authori- zation
Mine Countermeasure (MCM) Ship	\$ Millions	3.5	4.7	5.8	140.7
CAPTOR Deep-Water ASW Mine	\$ Millions	77.6	17.7	64.4	155.3
QUICKSTRIKE Mine	\$ Millions	8.5	11.0	14.9	5.1
Intermediate Water Depth Mine (IWD)	\$ Millions	2.4	13.7	3.0	22.4
Submarine-Launched Mobile Mine (SLMM) (Included above in QUICKSTRIKE)	\$ Millions	.4	-	-	-
	\$ Millions	(2.5)	(4.3)	(3.8)	(2.2)

E. Improving Fleet Readiness

The Navy has made good progress in its combat readiness in recent years. Readiness, however, requires daily attention and management. Several problems remain.

1. Measurement

The Navy, like all the Services, has been trying hard to define and measure readiness precisely enough to allow meaningful trends to become visible, and to relate resources to resultant readiness. Many differing programs are under review and efforts are continuing in this area. The Navy has adopted a working definition of readiness and a measurement system which has enabled analysts to better identify readiness problems.

2. Personnel Readiness

The Navy continues to suffer from a persistent shortage of critically-skilled non-commissioned officers at the middle grade level. This problem is made worse by the delivery to the fleet of

increasingly sophisticated ships, aircraft and equipment. The problem feeds on itself. Skilled petty officers, already in short supply, have to spend longer hours maintaining their equipment. They do not have the time to train their subordinates, or to be with their families. The demand for their talent at sea has resulted in a critical shortage of their skills ashore at intermediate maintenance facilities. These pressures in turn intensify retention problems.

The biggest single problem is second-term retention. A highly qualified technician with eight years experience on sophisticated equipment is sought by industry at much higher pay than he receives in the Navy. Significant effort is underway to attract him to a full career of 20 or more years. The Navy reenlists one of every two of these sailors. The Chief of Naval Operations' goal is to keep three of every four.

3. Training Readiness

The contribution of training to the readiness of the Navy is one of the most difficult to measure. It is now measured with some realism only during combat exercises. Some of the surrogates for training readiness which are traditionally used are ship steaming days and aircraft flying hours.

For FY 1980 the steaming days per quarter programmed and desired are:

	<u>Fleet</u>	<u>Programmed</u>	<u>Desired</u>
	2	31	39
	6*	42	50
	3	27	31.5
	7*	<u>45</u>	<u>54</u>
Total Average		36.3	43.6

 * Forward-Deployed Fleets

These programmed levels, while only 83 percent of the (rather arbitrary) desired level, are significantly improved over pre-FY 1978 levels.

Aircraft Flying Hours are one way to estimate the training component of an aircraft squadron's readiness. This year's budget provides the following hours, expressed in terms of percent of what is judged to be full readiness to support the aircraft's primary combat mission, otherwise known as "primary mission readiness" (PMR):

	<u>Percent PMR</u>
Actual Flying Hours	85.1
Simulator Time	<u>3.4</u>
TOTAL Programmed	88.5

This 88 percent PMR represents an acceptable level of readiness to support peacetime Fleet needs.

The budget also continues last year's initiatives to expand officer and enlisted steam propulsion training and formal schooling to deal with other new and existing systems.

4. Materiel Readiness

Past efforts to reduce the chronic backlogs of ship overhauls, equipment repair, and spare parts shortages are being continued. Chapter 11 of this report discusses these efforts in detail.

Table 4-2
FY 1980 Shipbuilding Program ^{1/}

	<u>FY 80</u>	<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>	<u>FY 84</u>	<u>FY 80-84 5 year Total</u>
TRIDENT (Ballistic Missile Submarine)	1	1	1	1	2	6
SSN 688 (Attack Sub- marine)	1	1	1	1	1	5
CV (Aircraft Carrier) (SLEP) ^{2/}	0	1	0	1	0	2
CVV (V/STOL Carrier)	1	0	0	0	0	1
DDG-47 (Guided Missile Destroyer AEGIS)	1	2	2	3	2	10
DDG-2 (Modernization)	1	3	3	3	0	10
DDX	0	0	0	0	1	1
FFG-7 (Guided Missile Frigate)	6	6	6	4	3	25
MCM (Mine Counter- Measures Ships)	0	1	0	2	2	5
T-AO (Oiler)	0	1	1	1	1	4
T-AGOS (Sonar Ship)	5	5	0	0	0	10
T-AK (Cargo Ship Con- version)	0	1	0	0	0	1
Total New Ships	15	17	11	12	12	67
Total Modernization	1	5	3	4	0	13

^{1/} In compliance with Public Law 95-485, the President is submitting separate correspondence to Congress on the FY 1980 shipbuilding program.

^{2/} SLEP - Service Life Extension Program.

Table 4-3

**Acquisition Costs of Major Naval Forces Modernization
and Improvement Programs 1/**
(Dollars in Millions)

		<u>FY 1978</u> <u>Actual</u> <u>Funding</u>	<u>FY 1979</u> <u>Planned</u> <u>Funding</u>	<u>FY 1980</u> <u>Prop'd</u> <u>Funding</u>	<u>FY 1981</u> <u>Prop'd for</u> <u>Authori-</u> <u>zation</u>
<u>Aircraft Carriers</u>					
Acquisition of CVV Carrier	\$ Millions	5.8	19.6	1,624.0	-
V/STOL Development	\$ Millions	18.3	7.2	16.8	47.6
<u>Surface Combatants</u>					
Development and Procurement of AEGIS-Armed Destroyers (DDG-47)	\$ Millions	938.6	10.2	825.4	1,578.1
Acquisition of Guided Missile Frigates (FFG-7)	\$ Millions	1,203.6	1,710.6	1,261.5	1,486.1
Modernization of DDG-2 Class Destroyers	\$ Millions	102.4	132.0	225.8	577.9
Study and Development of Advanced Naval Vehicles (Includes Surface Effect Ship SES) and Advanced Hydrofoil Programs	\$ Millions	43.9	80.0	-	-
<u>Anti-Ship Weapons</u>					
Acquisition of HARPOON Anti-ship missile	\$ Millions	135.6	139.0	154.7	166.0
Development of TOMAHAWK anti-ship missile	\$ Millions	208.5	152.1	107.2	119.9
Development of Guided Gun Ammunition	\$ Millions	10.2	14.8	22.3	13.3

1/ This table includes the cost of RDT&E, procurement of the system and initial spares, and directly related military construction.

		<u>FY 1978</u> <u>Actual</u> <u>Funding</u>	<u>FY 1979</u> <u>Planned</u> <u>Funding</u>	<u>FY 1980</u> <u>Prop'd</u> <u>Funding</u>	<u>FY 1981</u> <u>Prop'd for</u> <u>Authori-</u> <u>zation</u>
<u>Fleet Air Defense</u>					
Continued development of AEGIS Ship Air Defense System	\$ Millions	28.5	25.4	8.3	12.0
Procurement of STANDARD Missiles	\$ Millions	162.8	194.3	241.7	275.4
Procurement of PHALANX Close-in Weapons System (CIWS)	\$ Millions	81.8	86.3	135.3	136.3
Procurement of Electronic Warfare Systems (AN/SLQ-32)	\$ Millions	51.1	57.9	52.0	-
<u>ASW Aircraft</u>					
Continued procurement of P-3C Patrol Aircraft (including HARPOON backfits)	\$ Millions	324.9	347.1	382.4	378.8
Modification of SH-3 Helicopter	\$ Millions	66.7	53.6	14.3	.5
Modification and acquisition of Light Airborne Multi-Purpose System (LAMPS MK-III) and SH-2	\$ Millions	150.6	108.8	192.4	108.1
Acquisition of Sonobuoys	\$ Millions	89.2	107.1	108.9	-
<u>Mobile Logistic Support Force Ships</u>					
Procurement of Underway Replenishment Ships	\$ Millions	264.7	-	-	196.0
Procurement of Fleet Support Ships	\$ Millions	83.7	547.8	20.5	13.5
<u>Weapons Systems Modernization</u>					
SQR-18 Towed Array Sonar Backfit Program, SQR-19 Towed Array Sonar development and acquisition	\$ Millions	29.9	51.6	49.6	79.0

		<u>FY 1978</u> <u>Actual</u> <u>Funding</u>	<u>FY 1979</u> <u>Planned</u> <u>Funding</u>	<u>FY 1980</u> <u>Prop'd</u> <u>Funding</u>	<u>FY 1981</u> <u>Prop'd for</u> <u>Authori-</u> <u>zation</u>
<u>Weapons Systems Modernization</u> (con't)					
Acquisition of MK-46 ASW Torpedoes	\$ Millions	-	74.8	64.2	116.4
Acquisition of MK-48 Torpedoes	\$ Millions	162.6	113.3	47.4	38.8
<u>Undersea Surveillance Systems</u>					
Development of SOSUS and improved SOSUS; development and procurement of SURTASS	\$ Millions	144.8	201.3	260.3	128.3
<u>Attack Submarines</u>					
Procurement of SSN-688 Class Nuclear Attack Submarines	\$ Millions	416.3	738.3	522.9	504.5
<u>Amphibious Lift</u>					
Development of Air Cushioned Landing Craft <u>1/</u>	\$ Millions	1.5	1.5	5.8	5.9
<u>Mines and Mine Countermeasures</u>					
Development and acquisition of Mine Countermeasures Ship (MCM)	\$ Millions	3.5	4.7	5.8	140.7
Acquisition of CAPTOR ASW Mines	\$ Millions	77.6	17.7	64.4	155.3
Development of QUICKSTRIKE Mines	\$ Millions	8.5	11.0	14.9	5.1
Development of IWD Mines	\$ Millions	2.4	13.7	3.0	22.4
Development and procurement of Submarine-Launched Mobile Mine (SLMM) <u>2/</u>	\$ Millions	.4 (2.5)	(4.3)	(3.8)	(2.2)

1/ Includes Assault Landing Craft Program

2/ Figures in parentheses included in QUICKSTRIKE Mine Totals.

CHAPTER 5
TACTICAL AIR FORCES

I. PROGRAM BASIS

The missions of tactical aviation include controlling friendly airspace, and supporting land and sea forces in the execution of their missions. The ability of tactical air forces to counter attacks varying widely in location and intensity provides a major element of flexibility in our general purpose force capabilities.

A. Force Structure

Our tactical air forces which include Air Force, Navy, and Marine Corps aircraft consist of the following assets:

1. U.S. Air Force

Air Force fighter/attack units are organized into wings nominally consisting of 72 aircraft. Fighter/attack squadrons are generally equipped with 18 or 24 aircraft, while aircraft which perform supporting functions are formed into squadrons of 12-24 aircraft.

a. Active U.S. Air Force Structure

	<u>End-FY 1979</u>	<u>End-FY 1980</u>
Fighter/Attack Wings		
Total ^{1/}	26	26
A-7	1	1
A-10	2	2
F-4	14	13
F-15	5	5
F-16	--	1
F-111	4	4

^{1/} While there are 26 active fighter/attack wings currently organized, they are underequipped. By FY 1981, all 26 wings will have full aircraft complements.

a. Active U.S. Air Force Structure (continued)

	<u>End-FY 1979</u>	<u>End-FY 1980</u>
Electronic Warfare (EF-111) Squadrons	0	0
Airborne Early Warning (E-3A) Squadrons	3	3
Reconnaissance Squadrons		
RF-4	7	6
Tactical Air Control Squadrons	11	11
Special Operations Force Squadrons	5	5

b. End-FY 1979 Deployment of Active Forces

Europe

8 Fighter/Attack Wings including:	2 RF-4 Reconnaissance Squadrons
4 A-10 Squadrons	
11 F-4 Squadrons	2 Tactical Air Support (OV-10) Squadrons
4 F-15 Squadrons	1 Special Operations Force Squadron
7 F-111 Squadrons	

Pacific

3 Fighter/Attack Wings including:	1 RF-4 Reconnaissance Squadron
9 F-4 Squadrons	1 Special Operations Force Squadron
1 F-15 Squadron	

United States

CONUS Units "dual-based" for rapid deployment to Europe

2 F-4E Squadrons
3 RF-4 Squadrons

CONUS Units which provide crisis augmentation to Alaskan Air Command

3 F-4 Squadrons

Remaining Units in the United States

15 Fighter/Attack Wings including:	3 E-3A Airborne Early Warning Squadrons
3 A-7 Squadrons	
3 A-10 Squadrons	1 RF-4 Reconnaissance Squadron
16 F-4 Squadrons	
8 F-15 Squadrons	7 Tactical Air Control Squadrons
5 F-111 Squadrons	3 Special Operations Force Squadrons
1 F-105G Squadron	

c. Air Force Reserve and Air National Guard (all units stationed in United States)

	<u>End-FY 1979</u>	<u>End-FY 1980</u>
Fighter/Attack Wing Equivalents		
Total	10½	11
A-7	3½	4
A-10	0	1
A-37	2	1
F-4	3	3
F-105	2	2
Electronic Countermeasures (EC-130) Squadrons	1	1
Reconnaissance (RF-4) Squadrons	8	8
Tactical Air Control Squadrons	6	6
Special Operations Force Squadrons	2	2

2. Department of the Navy Force Structure

Unlike Air Force units which consist of one type of aircraft, Navy and Marine air wings are task-organized with many types of aircraft to perform a specific mission. This structure permits an aircraft carrier to optimize the embarked air wing for a given mission.

a. U.S. Navy Force Structure

The number of active carrier air wings in the force will remain at 12 throughout the five-year period. A typical carrier air wing consists of the following distribution:

<u>Function</u>	<u>Aircraft Type</u>	<u>Number of Squadrons</u>	<u>Number of Aircraft</u>
Fighter	F-4, F-14, F-18	2	24
Light Attack	A-7, A-18	2	24
Medium Attack	A-6	1	10
Tanker	KA-6D	1	4
ASW (Fixed-Wing)	S-3A	1	10
ASW (Helicopter)	SH-3H	1	6
Electronic Warfare	EA-6B	1	4
Airborne Early Warning	E-2	1	4
Reconnaissance	RA-5, RF-8	1	<u>3</u>
			89

During the five-year period, the F/A-18 will enter the force replacing F-4s and A-7s. The two reserve carrier air wings are organized similarly to the active wings but consist of older aircraft and lack some support aircraft.

b. Current Deployment of Navy Tactical Air Forces

Active carrier air wings are deployed by embarking aboard aircraft carriers that are normally deployed as follows:

- 2 Carriers in Mediterranean (6th Fleet)
- 2 Carriers in Western Pacific (7th Fleet)
- 4 Carriers in Western Atlantic or on U.S. Atlantic Coast (2nd Fleet)
- 4 Carriers in Eastern Pacific or on U.S. Pacific Coast (3rd Fleet)

The reserve carrier air wings are maintained at bases in the United States.

c. U.S. Marine Corps Tactical Air Force Structure

U.S. Marine Corps tactical air forces are organized into three active and one reserve aircraft wings that provide task organized aviation elements for Marine air-ground task forces. A notional active Marine Air Wing consists of:

<u>Function</u>	<u>Aircraft Type</u>	<u>Number of Squadrons</u>	<u>Number of Aircraft</u>
Fighter	F-4, F-18	4	48
Light Attack	A-4, AV-8, A-18	2-3	46
Medium Attack	A-6	1-2	17
Tanker/Transport	KC-130	1	12
Electronic Warfare	EA-6	1	5
Reconnaissance	RF-4	1	7
Observation	OV-10	1	12
Attack Helicopters	AH-1	1	24
Transport & Utility Helicopters	CH-53, CH-46, UH-1	--	<u>126</u>
TOTAL		12-14	297

During the five-year period F-18s and A-18s will be introduced into active fighter and light attack squadrons respectively.

The Reserve Marine Air Wing consists of:

- 24 F-4 Fighter Aircraft
- 72 A-4 Light Attack Aircraft
- 6 KC-130 Tanker Aircraft
- 15 OV-10 Observation Aircraft
- 86 Helicopters (UH-1, CH-46, CH-53)

d. Deployment of Marine Corps Tactical Air Forces

One Marine Aircraft Wing is located in Okinawa and Japan in support of the 3rd Marine Amphibious Force located there. In addition, a Marine Air Group is stationed in Hawaii to support the Marine brigade located there. The remaining two active and the one reserve wings are stationed in the continental United States.

B. Major Needs

Our most demanding concern is the adequacy of our tactical air forces in a NATO/Warsaw Pact conflict. Accordingly, the extensive tactical air force modernization and improvement program which the Pact, primarily the Soviet Union, has underway impacts heavily on our five-year program. As is the case with our other conventional force programs, tactical air initiatives which improve our NATO war capabilities also enhance our worldwide posture.

Our FY 1980-84 Defense program for tactical aviation is directed toward maintenance of a capability equal to, or better than, that possessed by the Warsaw Pact. Our projections show that NATO will sustain its present equality in numbers of land-based tactical aircraft oriented toward the European theater into the mid-1980s. Further, NATO now and in the future is estimated to have an advantage in these land-based tactical aircraft oriented towards Europe when operational availability for combat is measured. The aggressive Warsaw Pact modernization program implies, however, that we must not be overly optimistic. Pact deliveries of new production aircraft to combat units have been slightly higher than NATO's. In addition, significant effort is being devoted to development of a Pact air-to-ground capability, an area that previously received little attention. Despite these technological improvements by the Pact, we continue to believe that our F-15 and F-16 aircraft (as well as the Navy's F-18) will be capable of defeating such new aircraft beyond the mid-1980s.

U.S. air forces are the most capable elements of NATO's tactical air force, and are therefore the key to maintenance of equality with the Pact. The FY 1980-84 Defense Program will continue to improve the quality and quantity of the U.S. forces by:

1. Equipage of the active Air Force to a full 26 Fighter/Attack Wing structure.
2. Modernization of the active and reserve components of the Air Force.
3. Modernization of the active and reserve components of Navy and Marine Corps tactical aviation.
4. Increased readiness and training.
5. Increased capability in the areas of Electronic Warfare and Counter-C³.
6. Improved target acquisition capabilities.

II. PROGRAM DESCRIPTION

The five-year program places major emphasis on the initiatives cited above. We have attempted in our aircraft procurement programs to maximize force cost/effectiveness utilizing a mix of high and low cost aircraft each possessing good mission performance characteristics.

A. Expansion of the Active Air Force to 26 Fully-Equipped Fighter/Attack Wings

This effort will continue in FY 1980 and is expected to be completed in FY 1981. The 26 wing force will be able to place significantly more aircraft on-line in Europe by M+7 than our current posture. Since the Air Force is simultaneously undergoing a major modernization, the procurement programs relating to the force expansion are discussed below.

B. Modernization of the Active and Reserve Components of the Air Force

The last full-scale modernization of U.S. tactical air forces took place in the 1960s when F-4, A-7, and F-105 aircraft were introduced. Since that time, the costs of modern aircraft have increased in real terms, by a factor of four, while the real program funding of our recent defense budgets is comparable to those of the early 1960s. This disproportionate increase has placed a downward pressure on year-by-year procurement quantities, thereby slowing modernization and further increasing weapon system unit costs. A realization of that relationship was, in part, responsible for the lightweight fighter development of the early 1970s and contributed to the decision to procure a specialized close air support aircraft, the A-10. Procurement of lower cost alternatives such as the A-10 and F-16 allow our force modernization to proceed at an acceptable pace through the five-year period. The progress of this program is demonstrated in the force structure table at the beginning of this chapter and the charts below:

Chart 5-1

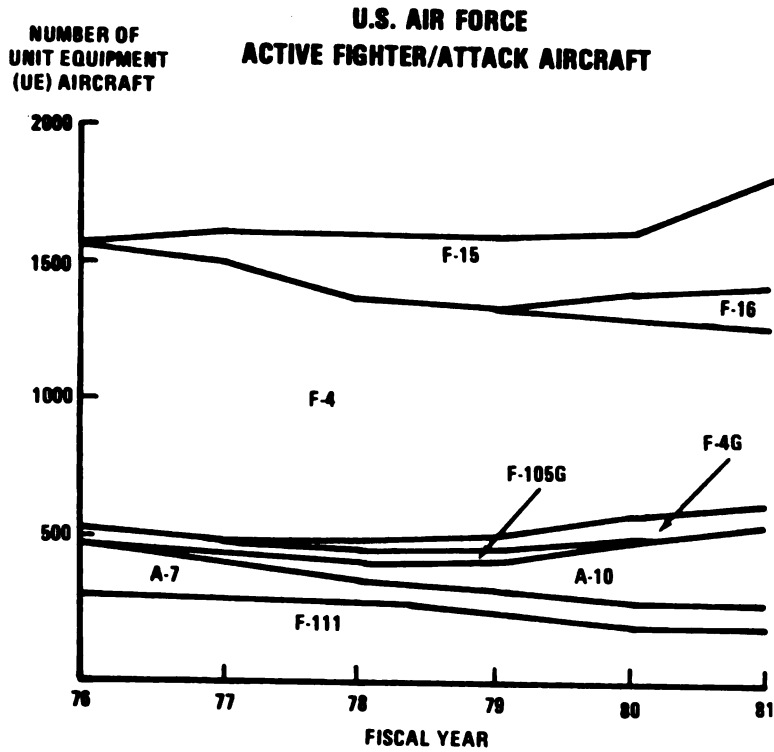
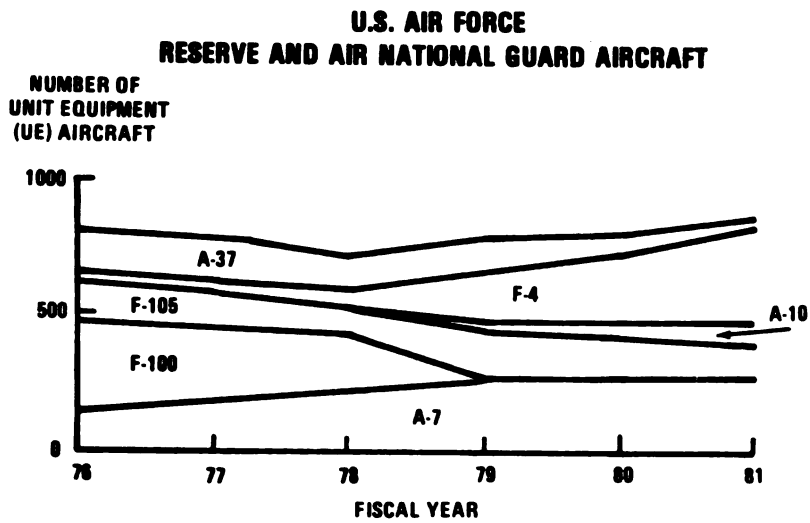


Chart 5-2



Our modernization program, through procurement of the F-15 and E-3A aircraft, will improve our capability to maintain air superiority. The multi-mission F-16, an example of a low-cost but capable system, will enhance both our ground attack and air-to-air combat capabilities. The addition of the A-10 with its integral 30mm anti-tank cannon will dramatically increase the ability of the Air Force to support the ground campaign.

The E-3A, Airborne Warning and Control system (AWACS) aircraft is designed to detect enemy planes at all altitudes and in a jamming environment. AWACS can be employed in both strategic defense and tactical support roles. The first operational employment of the E-3A -- air defense and surveillance of the Greenland, Iceland, United Kingdom (GIUK) gap -- began in October, 1978. By the end of 1978, 14 E-3As were operational. The program to provide AWACS aircraft for NATO is discussed in Chapter 7.

In order to upgrade the capability of our reserve forces, we intend to introduce new production A-10 and F-16 aircraft directly into some Air Force Reserve and Air National Guard Units.

The details of the modernization program are as follows:

		<u>FY 1978</u>	<u>FY 1979</u>	<u>FY 1980</u>	<u>FY 1981</u>
		<u>Actual</u>	<u>Planned</u>	<u>Prop'd</u>	<u>Prop'd for</u>
		<u>Funding</u>	<u>Funding</u>	<u>Funding</u>	<u>Authori-</u>
					<u>zation</u>
<u>F-16</u>					
Designed as an air superiority fighter, this aircraft will complement the more sophisticated F-15 and double as an attack aircraft.	Development:				
	\$ Millions	169.1	107.9	26.8	41.3
	Procurement:				
	Quantity	105	145	175	180
	\$ Millions	1,486.8	1,471.0	1,671.8	1,791.5
<u>F-15</u>					
Designed as the USAF's all-weather air superiority fighter, the aircraft is capable of operating well into enemy airspace. Program costs for procurement and modifications remain a major concern.	Development:				
	\$ Millions	62.7	10.0	.5	9.0
	Procurement:				
	Quantity	97	78	60	60
	\$ Millions	1,588.3	1,433.2	989.0	1,051.6

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	<u>FY 1978</u> Actual Funding	<u>FY 1979</u> Planned Funding	<u>FY 1980</u> Prop'd Funding	<u>FY 1981</u> Prop'd for Authori- zation
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A-10

<p>Optimized for the close air support mission, the aircraft constitutes the USAF's primary contribution to the anti-armor mission. The planned buy of 733 is to be completed in FY 1981.</p>	<p>Development: \$ Millions</p> <p>Procurement: Quantity</p> <p>\$ Millions</p>	<p>17.6</p> <p>144</p> <p>823.6</p>	<p>18.0</p> <p>144</p> <p>822.6</p>	<p>17.8</p> <p>144</p> <p>886.1</p>	<p>13.5</p> <p>106</p> <p>587.3</p>
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E-3A (AWACS)

<p>The system was developed to overcome the limitations of ground-based radar systems and to provide improved surveillance, warning and command and control capabilities in support of tactical and theater-level operations.</p>	<p>Development: \$ Millions</p> <p>Procurement: Quantity</p> <p>\$ Millions</p>	<p>99.9</p> <p>3</p> <p>267.7</p>	<p>58.6</p> <p>3</p> <p>242.8</p>	<p>74.2</p> <p>3</p> <p>332.7</p>	<p>63.6</p> <p>3</p> <p>317.0</p>
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Aircraft Modifications

<p>This account funds modifications and procurement to enhance the capability of inventory aircraft and, in some cases, to correct problems identified during operational use.</p>	<p>Modifications: \$ Millions</p>	<p>652.5</p>	<p>987.8</p>	<p>1,575.1</p>	<p>2,045.8</p>
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AIM-7F/M Sparrow

<p>An all-weather air-to-air guided missile designed for greater reliability, ECM resistance, and shoot-down capability.</p>	<p>Procurement: Quantity</p> <p>\$ Millions</p>	<p>1,300</p> <p>112.8</p>	<p>1,500</p> <p>127.1</p>	<p>1,320</p> <p>144.6</p>	<p>960</p> <p>104.2</p>
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	<u>FY 1978</u> <u>Actual</u> <u>Funding</u>	<u>FY 1979</u> <u>Planned</u> <u>Funding</u>	<u>FY 1980</u> <u>Prop'd</u> <u>Funding</u>	<u>FY 1981</u> <u>Prop'd for</u> <u>Authori-</u> <u>zation</u>
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AIM-9L Sidewinder

An infrared guided air-to-air missile used in clear weather. This model will have improved fuzing and resistance to countermeasures and an all-aspect intercept capability.

Procurement:				
Quantity	2,300	2,500	2,050	800
\$ Millions	104.0	98.3	86.9	39.8

IIR MAVERICK Anti-Armor
Air-to-Ground Missile

An updated version of the electro-optical (TV) MAVERICK which homes on infrared energy.

Development:				
\$ Millions	-	38.9	50.5	34.9
Procurement:				
Quantity	-	-	-	49.0
\$ Millions	-	-	-	149.0

AMRAAM

A new all-weather air-to-air missile under development. This system is designed to be a high speed, relatively small, launch-and-leave missile. Funding includes Navy and Air Force programs.

Development:				
\$ Millions	31.9	36.7	54.7	44.8

C. Modernization of the Active and Reserve Components of Navy and Marine Corps Tactical Aviation

The modernization of Navy/Marine Corps tactical air forces will be accelerated during the five-year period by the introduction of the moderately-priced F/A-18 aircraft. The F/A-18 program will reduce the number of types of aircraft in carrier and Marine aircraft wings by using a common system for the fighter and light attack missions, resulting in reduced operating and support costs. When this program is completed, all 24 Navy light attack and all 12 Marine fighter squadrons will be equipped with this aircraft. In addition, we plan to modernize six Navy fighter squadrons with F-18s and are programming this aircraft to eventually replace AV-8As and A-4Ms in Marine light attack squadrons.

Studies and engineering evaluations conducted over the last year indicate that considerable technological progress must be made before carrier-based V/STOL aircraft become a serious alternative to today's conventional aircraft. Accordingly, we have restructured the V/STOL RDT&E program to proceed at a more moderate pace than conceived earlier, and have shifted emphasis to development of the "Type B" fighter/attack aircraft.

The Navy is continuing the Sea Based Air Master Study plan effort, which will be completed later this year. These studies examine the cost and effectiveness of alternative aircraft to meet the Navy's needs in the 1990s and beyond. Systems under review are Conventional Takeoff and Landing (CTOL), Short Takeoff and Landing (STOL), Short Takeoff, Vertical Landing (STOVL) and the V/STOL concept. Industry is participating heavily in these study efforts.

In the light of expected limitations on funding for procurement of Marine and Navy aircraft in the 1980s, and the need to purchase larger numbers of such aircraft, we have decided to terminate funding for AV-8B research and development. While this aircraft does appear to have some potential for Marine Corps close air support missions, it appears that its measurable advantages over a conventional aircraft, such as the dual-mission F/A-18, may be minimal. In any event, there are advantages in concentrating on fewer types of aircraft.

The details of our modernization program are as follows:

Chart 5-3

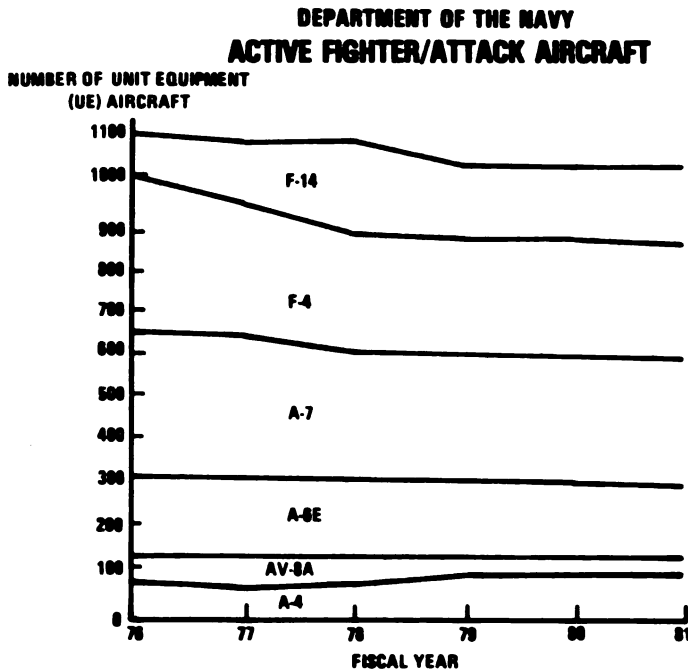
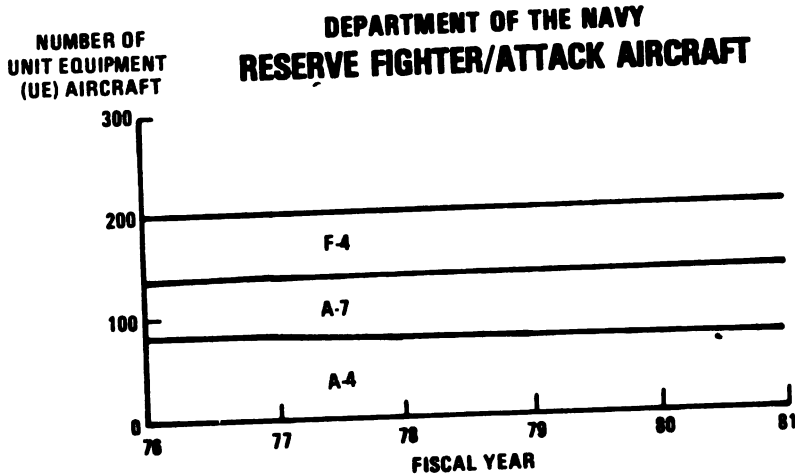


Chart 5-4



	<u>FY 1978 Actual Funding</u>	<u>FY 1979 Planned Funding</u>	<u>FY 1980 Prop'd Funding</u>	<u>FY 1981 Prop'd for Authori- zation</u>
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F-14

This aircraft, designed for the maritime air superiority mission, is equipped with the PHOENIX missile system. A program to upgrade the TF-30 engine is under consideration.

Procurement:				
Quantity	44	36	24	24
\$ Millions	822.4	866.9	638.4	712.0

F-18

Developed as a lower-cost complement to the F-14 for the Navy and as a fighter and attack aircraft for the Navy and Marine Corps.

Development:				
\$ Millions	625.1	498.6	310.8	111.5
Procurement:				
Quantity	-	9	15	48
\$ Millions	34.2	539.4	726.8	1,340.0

E-2C

Provides early warning and command and control communications to Navy and Marine forces.

Procurement:				
Quantity	6	6	6	6
\$ Millions	196.5	205.6	203.9	194.2

	<u>FY 1978 Actual Funding</u>	<u>FY 1979 Planned Funding</u>	<u>FY 1980 Prop'd Funding</u>	<u>FY 1981 Prop'd for Authori- zation</u>
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AIM 7E/F

An all-weather air-to-air guided missile. The "E" model is being replaced by the improved "F" version which is a more reliable and better performing system.	Procurement:				
	Quantity	425	410	240	740
	\$ Millions	65.6	59.7	66.1	107.9

AIM-9H/L

An infrared guided air-to-air missile used for clear weather attacks. The "H" model is being replaced by the "L" version which has an all-aspect intercept capability.	Procurement:				
	Quantity	600	650	320	320
	\$ Millions	40.4	34.6	23.5	24.1

PHOENIX

A long-range all-weather air-to-air missile used exclusively by the F-14. PHOENIX was designed to give the F-14 a multiple engagement capability against bomber type targets.	Procurement:				
	Quantity	210	210	180	180
	\$ Millions	88.2	92.2	111.9	130.8

HARM

A high-speed anti-radiation missile with greater range than the SHRIKE missile. Funding includes Navy and Air Force programs.	Development:				
	\$ Millions	29.7	43.4	43.8	29.4
	Procurement:				
	Quantity	-	-	80	212
	\$ Millions	-	-	57.9	94.2

D. Maintaining a High State of Readiness and Training

Readiness is a primary concern among our tactical air forces today. It is achieved through acquisition of new and more reliable equipment, the modification and update of old equipment, and probably most important, realistic and frequent training of air crews, unit staffs and support personnel. A thorough and complete discussion of the many programs underway is beyond the scope of this report; a few examples, however, serve to illuminate the scope of the efforts.

The Air Force is in the process of absorbing five new weapon systems into its active and reserve units. Readiness is being maintained during this transition by a plan under which the life of a unit's old aircraft is extended slightly to allow accelerated training in the new system at a centralized training base. This program results in virtually no active duty down-time in the squadron or wing undergoing transition.

The RED FLAG operation at Nellis AFB has received wide publicity during the past year. At Nellis, active and reserve squadrons are subjected as a unit to very realistic, combat-like training. Debriefings with "aggressor" squadron flight crews and feedback from monitored ground air defense equipment allow the student aircrews to learn and correct their mistakes under training rather than combat conditions. The success of RED FLAG has generated several other "Flag" operations. The latest is the CHECKERED FLAG operation designed to increase the wartime readiness of U.S. and host nation forces by exercising joint operations from collocated operating bases.

The Navy also maintains Air Combat Maneuvering Ranges at Miramar, California and Oceana, Virginia. These fully instrumented ranges allow aircrews to experience exposure to enemy defenses in a peacetime environment and, like the opportunity provided at RED FLAG, to review and adapt tactics, thereby increasing proficiency in peacetime.

Air-to-air missile firings by operational crews remain a problem. At present, for example, only half the operational Navy fighter crews, and no attack aircraft crews, fire a single missile as often as once per year. This is an unfortunate by-product of the continued cost growth in the more sophisticated weapon systems currently fielded and under development.

E. Increasing Electronic Warfare and Counter-C³ Capabilities

Confusion of enemy defenses and disruption of their command, control, and communications systems can have a decisive effect on the outcome of an air campaign. The following programs are designed to increase our ability to jam enemy radars, control systems, and communications.

	<u>FY 1978</u> <u>Actual</u> <u>Funding</u>	<u>FY 1979</u> <u>Planned</u> <u>Funding</u>	<u>FY 1980</u> <u>Prop'd</u> <u>Funding</u>	<u>FY 1981</u> <u>Prop'd for</u> <u>Authori-</u> <u>zation</u>
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EF-111A

This program modifies Air Force F-111s currently used for combat crew training, by adding flexible, high-power multipurpose jammers for support of tactical air operations.

Modifications:

Quantity	-	6	1	20
\$ Millions	24.1	151.3	55.0	385.0

EA-6B

Procurement will continue of this sophisticated electronic warfare support aircraft for the Navy and Marine Corps.

Procurement:

Quantity	6	6	6	6
\$ Millions	141.4	173.6	179.3	174.6

Advanced Self-Protection Jammer (ASPJ)

A joint Navy/Air Force project to develop an integral or pod-carried self-protection jammer. The F-14, F-16, F-18, and F/FB-111 aircraft would utilize this device.

Development:

\$ Millions	2.6	16.1	13.2	28.1
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COMPASS CALL

An airborne communications jamming system whose main function is to reduce the Pact's air warfare effectiveness.

Development:

\$ Millions	-	4.0	11.0	-
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Modifications:

Quantity	-	2	8	7
\$ Millions	-	19.0	51.2	45.6

F. Improving Target Acquisition, Surveillance, And Reconnaissance Capabilities

The location and destruction of enemy air defenses and other ground targets is of critical importance to effective air operations as well as to the outcome of the land battle. The following programs improve these capabilities:

	<u>FY 1978</u> <u>Actual</u> <u>Funding</u>	<u>FY 1979</u> <u>Planned</u> <u>Funding</u>	<u>FY 1980</u> <u>Prop'd</u> <u>Funding</u>	<u>FY 1981</u> <u>Prop'd for</u> <u>Authori-</u> <u>zation</u>
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Precision Location Strike System (PLSS)

A system designed to provide our forces with an all-weather stand-off precision location and strike system capable of attacks against targets, including active emitters.

Development:
\$ Millions

31.7	86.8	24.9	-
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TR-1

The TR-1 is a multi-sensor reconnaissance aircraft which uses the U-2 airframe. This system is designed to provide continuous, all-weather, stand-off reconnaissance. Funding includes associated ground processing facilities.

Procurement:
Quantity
\$ Millions

-	-	2	8
-	10.2	44.2	218.5

CHAPTER 6

MOBILITY FORCES

I. PROGRAM BASIS

Our mobility forces provide the means for the timely movement of people, equipment and supplies between and within theaters for initial deployment from peacetime to wartime locations, for sustaining support, and for subsequent movement in response to unpredictable shifts in the demands of combat. Given a desired schedule for the deployment of forces, the mobility forces required for initial deployment can be determined relatively easily. Likewise, given daily consumption rates, the mobility forces required for sustaining support can be determined. It is much more difficult to make a judgment on how much capability to buy for the third function -- movement in response to unpredictable shifts in the demands of combat -- because this involves estimating how frequently exigent tactical situations will develop. Nevertheless, this is an important function of our mobility forces, and we attempt to procure a mobility capability adequate to satisfy all three types of demands.

Mobility programs involve airlift and sealift forces and the prepositioning of equipment and supplies to reduce movement requirements. Airlift and sealift assets are force multipliers in that they preclude the need to position forces and supplies in every location of potential conflict. They also provide the flexibility necessary to respond to the unexpected. Airlift and sealift are unique among the components of U.S. forces in that many of the assets we depend upon are operated and maintained by the U.S. civil sector and also include the civil airlift and sealift assets of our NATO Allies in a NATO war. During a sustained conflict, sealift would carry the bulk of the necessary supplies and reinforcements. However, sealift cannot provide a sufficiently rapid response in many scenarios; and airlift, beyond that available from the civil sector, is relatively expensive. Consequently, when the location of conflict can be predicted and the consequences of the conflict are judged sufficiently serious, prepositioning is an attractive mobility option.

A. Force Structure

Our mobility forces consist of the following assets:

1. Strategic Airlift

Active U.S. Air Force

70 UE C-5A Aircraft
234 UE C-141 Aircraft

Civil Reserve Air Fleet (CRAF)

272 Passenger Aircraft
113 Cargo/Convertible Aircraft

2. Prepositioned Materiel Configured in Unit Sets (POMCUS)

2 brigades from each of 3 divisions plus an armored cavalry regiment (equivalent in total to 2-1/3 division sets), plus nondivisional support units.

3. Sealift

27 Military Sealift Command
Ships including:

6 Government owned
21 Long-Term Chartered

152 National Defense Reserve
Fleet Ships including:

14 Ready Reserve Force
Ships

273 U.S. Flag Merchant Fleet
Ships including:

118 Sealift Readiness Program
(available under less than
full mobilization)
155 Other Vessels

192 Non-U.S. NATO Vessels
(nucleus of contribution)

Note: 600 to be earmarked
available by 1 July 1979.

4. Tactical Airlift

Active U.S. Air Force

218 UE C-130 Aircraft

Air Force Reserve and Air
National Guard

264 UE C-130 Aircraft
64 UE C-123 Aircraft
48 UE C-7 Aircraft

Active U.S. Navy

20 UE C-1 COD Aircraft
10 UE C-2 COD Aircraft
2 UE C-9 Aircraft
16 UE CT-39 Aircraft
7 UE C-130 Aircraft

Reserve U.S. Navy

20 UE C-117 Aircraft
30 UE C-118 Aircraft
12 UE C-9 Aircraft
2 UE CT-39 Aircraft

5. Logistics Support Helicopters

<u>Active U.S. Army</u>	<u>Active, U.S. Marine Corps</u>
358 CH-47s 36 CH-54s	126 CH-53s
<u>Army Reserve/National Guard</u>	<u>Reserve, U.S. Marine Corps</u>
94 CH-47s 37 CH-54s	18 CH-53s

6. Deployment of Forces

The peacetime location of our mobility forces is as follows:

a. Airlift Assets

Europe and Mediterranean Sea

<u>Strategic Airlift</u>	<u>Tactical Airlift</u>	<u>Logistics Support Helicopters</u>
None	32 C-130 Aircraft 9 C-1 & C-2 Aircraft 4 CT-39 Aircraft	52 CH-47s 3 CH-53s

Asia and Western Pacific

<u>Strategic Airlift</u>	<u>Tactical Airlift</u>	<u>Logistics Support Helicopters</u>
None	32 C-130 Aircraft 10 C-1 & C-2 Aircraft 2 CT-39 & C-9 Aircraft	31 CH-47s 71 CH-53s

United States (including Panama Canal Zone)

<u>Strategic Airlift</u>	<u>Active Tactical Airlift</u>
70 C-5 Aircraft 234 C-141 Aircraft 216 CRAF Aircraft	154 C-130 Aircraft 12 C-1 & C-2 Aircraft 12 CT-39 & C-9 Aircraft
<u>Active Logistics Support Helicopters</u>	<u>Reserve Tactical Airlift</u>
275 CH-47s 130 CH-53s 35 CH-54s	48 C-7 Aircraft 64 C-123 Aircraft 264 C-130 Aircraft 14 C-9 and CT-39 Aircraft

- b. POMCUS - All in Europe.
- c. Sealift Assets (Based on typical operating patterns.)

Atlantic Ocean, U.S. Atlantic and Gulf Coasts

18 Military Sealift Command Ships
178 U.S. Flag Merchant Ships
125 Non-U.S. NATO Vessels
93 National Defense Reserve Fleet Ships

Pacific Ocean and U.S. Pacific Coast

9 Military Sealift Command Ships
95 U.S. Flag Merchant Ships
67 Non-U.S. NATO Vessels
59 National Defense Reserve Fleet Ships

B. Major Needs

By far the most demanding contingency we consider in our planning is a war between NATO and the Warsaw Pact which potentially could be fought in many other areas. In addition to NATO, there are other areas of the world, such as the Middle East, the Persian Gulf, or Korea, that are important to U.S. interests and in which the potential for conflict warrants consideration in our mobility planning. Although we do not plan the capability for simultaneous all-out deployment to one of these locations and to Europe, our planning must account for the possibility that war in one of them could lead to war in Europe.

We have identified two key areas in which our mobility forces must be improved:

1. Ability to deploy additional U.S. ground and air forces to Europe rapidly.
2. Ability to deploy and support forces in limited contingencies without reliance on intermediate bases or overflight rights.

In addition, steps must be taken to maintain the existing capabilities of several elements of our force.

II. PROGRAM DESCRIPTION

A. Trends and Objectives

The five-year program combines procurement of additional assets with maximizing the capability of existing forces. Table 6-1 summarizes the major programs.

Table 6-1

Major Mobility Programs

	End FY				
	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>
Divisions with POMCUS	3	3	4	4	6
C-141A	234	231	154	34	0
C-141B (Stretch)	0	3	80	200	234
Wide-Bodied cargo convertible aircraft in CRAF enhancement program	0	0	5	14	28
KC-10 Tanker-cargo aircraft	0	0	2	4	6
Ready Reserve Fleet Ships	8	14	23	29	34
NATO Allies Ships Earmarked for Rapid Reinforcement	192	600	600	600	600

Since 1965, strategic airlift capabilities have increased dramatically while the number of aircraft has decreased. Capabilities are projected to increase further through ongoing programs to maximize the capabilities of existing assets. The charts below depict these changes and show how the increase in capability is divided between CRAF and military airlift and what portion of military airlift can carry the Army's outsized pieces of equipment.

Chart 6-1

TOTAL STRATEGIC AIRLIFT AIRCRAFT INVENTORY AND CAPABILITY

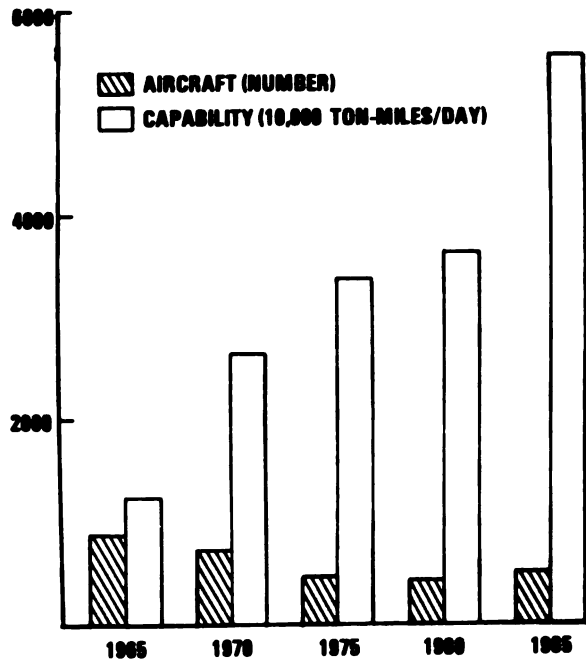
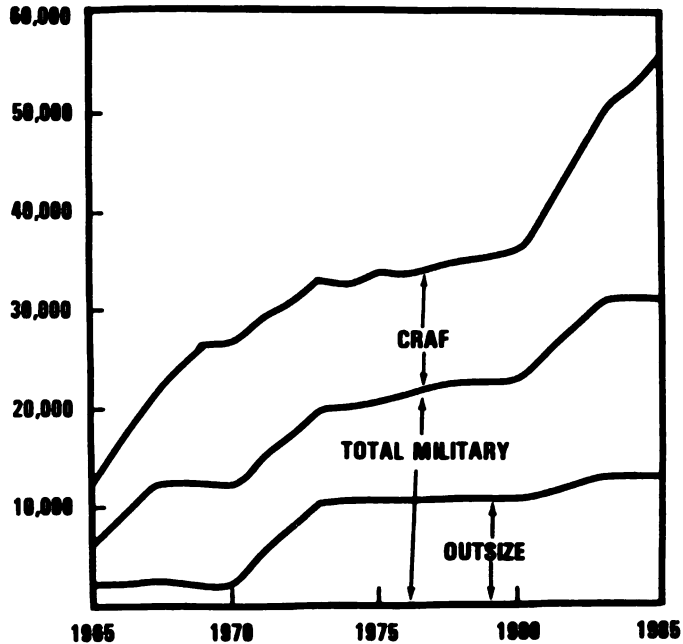


Chart 6-2

TRENDS IN TOTAL U. S. STRATEGIC AIRLIFT CAPABILITY

THOUSANDS OF
TON-MILES/DAY



Tactical airlift capabilities, in terms of tonnage, have remained largely static over the same period although the number of aircraft declined in the 1960s when older aircraft were replaced with C-130s.

Sealift capabilities for NATO reinforcement are also increasing significantly as a result of changes in the commitment of ships by our Allies.

1. Objectives for Reinforcement of Europe

As discussed in previous sections, those Warsaw Pact forces deployed opposite NATO's Center Region would be ready for combat within a relatively short time of a Pact mobilization. When we compare the Pact buildup capability with NATO's current mobilization and reinforcement capability, we see a significant Pact advantage. The Pact advantage in the first few days after they mobilize can be reduced only by strengthening in-place forces, by speeding NATO's own decision to mobilize, and by increasing the rate of mobilization of the reserves of Allied nations. The objective of our mobility programs is to be able to double our in-place ground forces in about 10 days by FY 1982 and to deploy the remaining active divisions at a rapid rate thereafter. We also plan almost a 50 percent increase in the rate of deployment of tactical fighter forces. Attaining this objective will be difficult. Not only must we procure additional mobility capability but we must also revise operational plans and exercise our capabilities. Such a deployment capability will not insure a successful defense, but it will significantly reduce the Pact advantage in the early days of conflict.

Current mobility forces cannot meet the FY 1982 objective. The least costly additional capability is derived from commercial ships and aircraft of our Allies, and programs are underway to increase their participation in NATO reinforcement. Full use of these resources will not solve our entire problem, however, particularly in the first month. Ongoing airlift enhancement programs to maximize the capacity of U.S. commercial and existing military assets will make a substantial contribution, but even these will not provide enough capability for the first month. We believe the best way to obtain the necessary additional capability is to preposition equipment for more forces in Europe. While sealift would in a prolonged conflict carry about 95 percent of the necessary cargo, it cannot move forces quickly enough for rapid reinforcement. Although airlift could move forces fast enough, the capacity to carry the amount of equipment needed would be much more expensive than prepositioning.

We are frequently asked why we do not solve the entire problem with prepositioning instead of continuing our airlift enhancement programs. There are three major reasons. First, some items -- such as air defense systems and helicopters -- are not suitable candidates for prepositioning. Second, we may want to deploy to locations

where prepositioning is politically and strategically infeasible. Third, we want to maintain the flexibility to shift forces between the central region of Europe and the flanks or elsewhere as the course of the war might dictate. This final point deserves some expansion. We cannot predict how a crisis or conflict will develop. We expect the majority of our forces to be engaged in the central region, but we may want to deploy forces elsewhere initially or to shift forces later in the conflict. Prepositioning in several locations would be more expensive and provide less flexibility than we gain from airlift enhancement.

The issue of the vulnerability of prepositioned equipment sites has frequently been raised. While it is true that the Pact could destroy some prepositioned equipment and disrupt the breakout of equipment if the war were to begin before breakout was completed, we believe that POMCUS sites are inherently no more vulnerable than ports and airfields.

2. Objectives for Limited Contingencies

Although we would expect to deploy fewer forces in any limited contingency than in a NATO war, such contingencies differ from a NATO war in ways which may place greater demands on some of our mobility forces. First, we cannot predict where such contingencies will occur. Second, we are likely to have fewer mobility assets available for a limited contingency. It is possible that we would not get help from our NATO Allies; there probably will be little or no prepositioned equipment and supplies; and, at least in some cases, we would be less willing to divert civil ships and aircraft from their normal business. Finally, operational problems will be greater. In particular, we may be operating over longer distances with few or no intermediate bases, and reception facilities may be limited. Improving our capabilities in such circumstances is an important objective of our program. In particular, we want to have the capability to deploy quickly (and support) at least a small force to distant locations without reliance on foreign bases or overflight rights.

B. Improving Capability to Deploy Forces to Europe Rapidly

Programs to improve our ability to reinforce Europe rapidly include taking advantage of NATO Allied mobility assets, maximizing the capabilities of existing airlift assets and establishing additional POMCUS. The details of these programs are as follows:

NATO Ships

An agreement has been completed under which the NATO Allies will earmark 600 of their most militarily-useful ships to be available for NATO reinforcement starting on M-day. The ships will be

identified by June 1979. Not only will more and better ships be available for our use sooner under this new agreement, but new mechanisms are being developed to insure that the list of ships is kept up to date and to poll all ships periodically as to their status and location, in order to develop better estimates of time-phased availability.

This agreement will virtually eliminate any shortfall in the number of dry cargo ships required for military purposes. With the combination of U.S. and NATO Allied ships we will have about as much shipping as we can use within the constraints of escort availability, the readiness of land combat units and the availability of supplies for movement.

NATO Aircraft

The NATO Civil Air Planning Committee is working on a similar agreement under which the NATO Allies would make some of their long-range civil aircraft available for use in reinforcement and an agreement may be completed within the year. Although it is too soon to say how many aircraft might be committed under such an agreement, the NATO Allies currently possess 16 wide-bodied cargo aircraft which could carry military cargo. The Allies also have approximately 150 wide-bodied and 130 narrow-bodied passenger aircraft. Although there are adequate numbers of aircraft in the U.S. airline industry to move our passengers ourselves, use of Allied aircraft might reduce the number of loads (if Allied wide-bodied aircraft could replace U.S. narrow-bodied aircraft) and permit early conversion of U.S. convertible aircraft to the cargo role.

Civilian Reserve Air Fleet (CRAF) Enhancement

U.S. air carriers own over 300 wide-bodied aircraft, many of which have the potential to move military cargo. This number will increase as older narrow-bodied aircraft are replaced. The majority of these are and will be passenger aircraft, however. Since the mid-1970's DoD has been proposing programs to insure that a greater number of these aircraft would be passenger/cargo convertibles. It was recognized from the outset that it is preferable to build such features into aircraft when they are produced. Few aircraft were being ordered when the program began, however, so modification of existing aircraft was proposed. The airlines are now beginning to order significant numbers of new aircraft, so we are shifting emphasis in the program from modifications to incorporation during production.

This change, while much more cost/effective, is not without its disadvantages. The DC-10s and L-1011s that will make up part of the new aircraft orders are less capable on an individual basis than the 747s we had proposed to modify. Consequently, more of them

will be required to get the same total program capability. The pace of the program will be determined by the timing of civil airline purchases. Consequently, we are likely to get increases in capability more slowly than under a program which would modify existing aircraft. With the program we now envision, we will not get a capability equivalent to the 65 747s we proposed to modify until FY 1986 or later. These aircraft are expected to remain in service beyond the turn of the century.

We believe that the CRAF Enhancement program is the least expensive way to expand our airlift capability. As will be detailed in a separate report, it is less than 10 percent as costly as procuring and operating additional military airlift, and it is quite competitive with prepositioning for those types of items that can be carried in civil aircraft.

C-141 Stretch/Refueling Modification

Stretching the C-141 increases the capability of an organic resource by as much as 30 percent -- an increase in capability approximately equal to another 90 C-141s -- without incurring any of the additional operating and manning costs that would be associated with more aircraft. The aerial refueling addition will enhance the C-141s ability to operate without enroute bases and perform in more distant contingencies. The C-141 Stretch/Refueling program is particularly important because it provides an increase in our organic airlift and is, therefore, available under all circumstances. In addition, this increase will be available in the near-term.

C-5 and C-141 Utilization Rate Increases

The ability of the C-5 to fly at the high utilization rates we envision, even if adequate support is available, has been questioned. Military Airlift Command (MAC) and the Air Force have examined the problems involved and are confident that such rates are possible under wartime conditions. In view of the fact that the C-5 is the only aircraft that can carry the Army's outsize pieces of combat equipment, increasing the utilization rate of this aircraft is vital to improving our capabilities for both NATO and limited contingencies.

Pre-positioned Overseas Materiel Configured in Unit Sets (POMCUS)

The additional three divisions of POMCUS will provide early availability of a reserve force for Allied Forces, Central Europe (AFCENT).

Three sites in Germany have been selected for the division set to be established in FY 1980. Funding for construction and transportation began this year and will be completed in FY 1980. Several

sites for the next two divisions are under consideration, and funding for these two as well as recouplement for the first set is included in the NATO Infrastructure Program. Land is being provided free by the Allies.

Two aspects of the increase in POMCUS are still under intensive review within DoD. First, we are examining the proper size of the non-divisional or corps support portion of POMCUS. Support forces in Europe have been reduced in recent years in response to the Nunn Amendment. Consequently, we cannot significantly increase the number of combat forces in the theater shortly after M-day without also increasing the number of units that support them.

Second, we are carefully monitoring the impact of establishing additional POMCUS on the availability of equipment for other purposes. It is evident, establishing additional POMCUS exacerbates equipment shortages but is not their sole cause.

We have made some changes to reduce the most serious equipment shortages. For example we are requesting procurement of additional tanks and armored personnel carriers in the FY 1979 supplemental appropriations request. Second, we may decide to redistribute some equipment from lower to higher priority claimants. Third, equipment procured but not delivered by end FY 1982 will erase many of these shortages in subsequent years.

<u>FY 1978</u>	<u>FY 1979</u>	<u>FY 1980</u>	<u>FY 1981</u>
<u>Actual</u>	<u>Planned</u>	<u>Prop'd</u>	<u>Prop'd for</u>
<u>Funding</u>	<u>Funding</u>	<u>Funding</u>	<u>Authori-</u>
			<u>zation</u>

Taking Advantage of Allied Resources

The NATO Allies have agreed to make 600 ships available for U.S. use in reinforcing NATO, and a similar agreement is being negotiated for aircraft.

-- No cost to the U.S. --

Maximizing the Capabilities of Existing U.S. Civil and Military Assets

CRAF Enhancement

We will modify new production L-1011, DC-10 and 747 aircraft beginning in FY 1979. The program goal, a capability equivalent to 65 747s, will not be achieved before FY 1986.

Modifications:

Quantity	-	5	9	14
\$ Millions	7.5	28.5	73.6	132.5

	<u>FY 1978</u> <u>Actual</u> <u>Funding</u>	<u>FY 1979</u> <u>Planned</u> <u>Funding</u>	<u>FY 1980</u> <u>Prop'd</u> <u>Funding</u>	<u>FY 1981</u> <u>Prop'd for</u> <u>Authori-</u> <u>zation</u>
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C-141 Stretch/Air Refueling Modification

The existing C-141 aircraft will be lengthened by 280 inches and an aerial refueling capability added. This modification extends the range and increases the capability of the C-141 fleet by as much as 30 percent. The first aircraft will be delivered in FY 1979, and the last modification will be completed in FY 1982.

Modifications:				
Quantity	27	85	124	35
\$ Millions	89.5	64.0	76.0	23.8

C-5/C-141 Utilization Rate

This program is designed to increase the sustained and surge daily utilization rates to 10 and 12.5 hours respectively. To meet these objectives, additional spare parts for both aircraft and additional associated reserve air crews for the C-5 are needed. Cost figures are for spare parts only.

Procurement:				
\$ Millions	10.8	82.1	-	1.0

POMCUS Increases

We plan to add one POMCUS division in Europe by the end of FY 1980 and two additional division sets by the end of FY 1982. While we are financing the necessary construction for the first additional set to expedite prepositioning, it is expected that NATO infrastructure funds will ultimately be used to cover the construction costs for all three additional division sets.

Operations & Maintenance:				
\$ Millions	-	22.2	32.6	-
Construction:				
\$ Millions	-	36.9 <u>1/</u>	-	-

1/ Does not include an additional \$20 million in NATO recoupments.

C. Improving Ability to Deploy and Support Forces in Limited Contingencies

Although the primary purpose of these programs is to improve our ability to deploy and support forces in limited contingencies, they also improve our ability to reinforce Europe. In particular, the KC-10 will provide a useful addition to our tanker fleet during a NATO war when the demand for tanker support to both strategic and general purpose forces will be high. Nevertheless, we are procuring it primarily to improve our capabilities for limited contingencies. The KC-10 enhances our capability to deploy combat forces and tactical fighter squadrons over long distances without enroute stops. Aerial refueling of our airlift forces by the KC-10 can increase their payload and decrease their dependence on foreign bases. The KC-10 can also be used to escort a flight of fighter aircraft long distances and carry the cargo and personnel to support these fighters at the same time.

In addition to these programs, the CRAF enhancement program, the C-141 stretch and refueling modification and the increase in C-5 and C-141 utilization rates also improve our capabilities for limited contingencies.

<u>FY 1978</u> <u>Actual</u> <u>Funding</u>	<u>FY 1979</u> <u>Planned</u> <u>Funding</u>	<u>FY 1980</u> <u>Prop'd</u> <u>Funding</u>	<u>FY 1981</u> <u>Prop'd for</u> <u>Authori-</u> <u>zation</u>
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KC-10 Advanced Tanker/Cargo Aircraft (ATCA)

The KC-10 is a wide-bodied aircraft that can be used to refuel aircraft, carry cargo, or a combination of the two. The program will include approximately 20 aircraft, the first of which will be delivered in FY 1980.

Procurement:				
Quantity	-	2	4	6
\$ Millions	-	159.5	190.1	285.7

Ready Reserve Force (RRF) Expansion

By FY 1982 the Ready Reserve Force will be expanded from the present 14 ships to 34 by withdrawing additional ships from the National Defense Reserve Fleet and by acquisition of ships being retired from the commercial fleet. These ships

Procurement:				
\$ Millions	8.2	8.2	9.6	10.0

Ready Reserve Force (RRF)
Expansion (Continued)

are particularly valuable for limited contingencies when Allied shipping may not be available and when we may not want to requisition ships from the U.S. flag fleet.

D. Maintaining or Improving Strategic Airlift, Helicopter Logistical Support and Carrier-Onboard Delivery Capabilities

The C-5 is the only aircraft, military or civilian, that can airlift "outsized" unit equipment such as tanks and self-propelled howitzers. This outsized category currently represents about 45 to 55 percent of the weight associated with the combat elements of an armored or mechanized division. This will increase to about 65 to 75 percent by the mid-1980s.

		<u>FY 1978</u>	<u>FY 1979</u>	<u>FY 1980</u>	<u>FY 1981</u>
		<u>Actual</u>	<u>Planned</u>	<u>Prop'd</u>	<u>Prop'd fo</u>
		<u>Funding</u>	<u>Funding</u>	<u>Funding</u>	<u>Authori-</u>
					<u>zation</u>
<u>C-5 Wing Modification</u>					
<p>We are continuing to take measures to minimize further structural damage prior to modification. Production of the wing modification kit will begin in January 1980 with first installation in early 1982. The program to modify all 77 C-5s will cost \$1.3 billion and will be completed in 1987.</p>	Development:				
	\$ Millions	30.8	36.5	12.7	9.4
	Modifications:				
	Quantity	-	-	5	15
	\$ Millions	-	-	78.6	114.7
<u>Marine Corps CH-53 Helicopter</u>					
<p>The CH-53E with its 16 ton payload will provide the Marine Corps greater flexibility for amphibious assault by helicopter. As a minimum, 33 are to be procured for Marine Corps use.</p>	Procurement:				
	Quantity	-	14	15	14
	\$ Millions	-	183.2	190.0	164.9

	<u>FY 1978</u>	<u>FY 1979</u>	<u>FY 1980</u>	<u>FY 1981</u>
	<u>Actual</u>	<u>Planned</u>	<u>Prop'd</u>	<u>Prop'd for</u>
	<u>Funding</u>	<u>Funding</u>	<u>Funding</u>	<u>Authori-</u>
				<u>zation</u>

Army CH-47 Helicopter Modifi-
cation

This program provides reliability, maintainability, safety and survivability improvements to the Army's helicopter fleet. In addition, logistic support will be enhanced, and maintenance support simplified. Long-lead item procurement begins in FY 1980 with initial production in FY 1981 and first deliveries in FY 1982. Although a production rate of 3 per month is tentatively planned, we are studying the most economic rate, and this issue will be reviewed by the DSARC before production is authorized.

Modifications:				
Quantity	-	-	-	9
\$ Millions	-	-	27.0	141.0

Carrier Onboard Delivery (COD)
Aircraft

We are examining various alternatives for replacing the Navy's aging capability to provide at-sea air-delivered supplies. We plan to begin a replacement program in FY 1981.

E. Tactical Airlift

Although tactical airlift participates in the initial deployment of units and supplies, its size is driven by the need to provide sustaining support to a variety of remote locations in wartime and to enable us to move units and supplies rapidly within a theater as the tactical situation dictates. This year we again examined the benefits of developing and procuring an aircraft with the capability to move "heavy" Army units and pieces of equipment that will not fit in existing aircraft. We concluded that the benefits of modernizing our tactical

airlift fleet with a wide-bodied aircraft, when weighed against other DoD programs, do not justify the expenditures required for the separate development and procurement of a special-purpose aircraft. This conclusion was based on the assumption of a European conflict, where modern, sophisticated road and rail networks allow surface transportation to compete favorably with the speed and responsiveness of tactical airlift. Future work on limited contingencies -- where distances are greater and road and rail lines are minimal or nonexistent -- may show a more significant value and need for intratheater airlift. Moreover, it may prove feasible to use a single basic aircraft design for tactical airlift and other purposes. The resulting reduced unit cost could make modernization of tactical airlift economically attractive.

Current Air Force and Navy land-based tactical airlift forces and short-range civil aircraft (in about the numbers currently committed to DoD) can meet the essential demands for a global war, with the exception of the Navy's COD mission discussed above. We intend to maintain this capability, but this does not require the immediate purchase of additional aircraft. The Air Force's Military Airlift Command (MAC) operates the bulk of DoD tactical airlift aircraft. Though the Navy will retain control of its existing modern aircraft to provide high responsiveness to urgent fleet demands, we plan to discontinue operations of the Navy's old C-117s/C-118s by the end of FY 1979 and do not plan to procure replacement aircraft for the Navy, because the rest of their demands can be met by MAC.

CHAPTER 7

NATO RELATED ACTIONS AND PROGRAMS

I. INTRODUCTION

The North Atlantic Treaty Organization, as noted in Section I, holds a central position in U.S. foreign policy and is the focus of our efforts to counter growing Soviet military strength. Given the shared adherence to democratic political institutions that binds the alliance, the growing economic and technological interdependence among the members and the concern over growing Soviet power and the possibility of confrontation, NATO is likely to remain of central importance to all of its members for the foreseeable future.

Recognizing a continuing need for the NATO alliance, we and our allies have begun planning its further development along two dimensions. First, we recognize the necessity of long-range planning to bring to fruition cooperative development and procurement of equipment and weapons, as well as mutual support and construction projects that are vital to any defense posture intended to balance the military power of the Soviet Union. The alliance responses in this dimension are the Long Term Defense Program (LTDP) and related cooperative programs to improve NATO's military effectiveness.

The second dimension is organizational: the multitude and variety of both resources contributed to, and benefits gained from, NATO result in a complexity not manageable under a compartmentalized structure. The NATO allies are developing a number of programs aimed both at improving operational military posture and capabilities, and at avoiding duplication of effort and costs. These include the NATO Infrastructure Program, a program of "host nation support," proposals aimed at standardization of weapons and equipment, interrelated training programs, and organization reforms proposed in the LTDP.

II. NATO LONG TERM DEFENSE PROGRAM (LTDP)

A. Program Objectives

Many of our ongoing efforts to improve NATO's collective defense posture have been channeled through NATO's Long Term Defense Program. The LTDP was developed to bring increased efficiency to the use of limited resources by explicitly increasing the levels of coordination, joint planning, equipment compatibility and mutual support among NATO forces.

All of the specific recommendations within ten defense program areas have been assigned to appropriate action bodies for providing more details and/or for implementation. NATO has also established a monitoring function to insure that the measures within each program area are implemented in a coordinated fashion and that progress schedules are met.

Ultimate responsibility for improvements in the ten areas rests with the individual NATO members. To facilitate monitoring our own efforts and contribution to the LTDP, the Department of Defense has established a working group for each area, under the direction of a DoD Rationalization and Standardization Steering Group. This structure should assure continuing active U.S. participation in and response to all aspects of the LTDP.

The Long Term Defense Program covers areas where improvements in NATO capabilities are critical. The objectives to be met within each area are important as guidance for defense planning, programming and budgeting purposes and are summarized below.

1. Readiness

NATO will increase its ability to respond with the maximum possible combat capability in the face of short warning time. Specific programs to increase readiness include: improvement in anti-armor units; modernization and increased holdings of air-to-surface weapons; improved defense against chemical warfare; enhanced support from the civil sector; increased holdings of tanks, anti-armor weapons and missiles, and armed helicopters; increased ability to upload ammunition at short notice; and a larger commitment of national forces to NATO.

2. Reinforcement

NATO will develop an increased capability for rapid and effective reinforcement of the Allied Command Europe. This will include: the greater commitment of civil air, sea, and land national infrastructure resources to the reinforcement task, more effective arrangements to coordinate the flow of reinforcements; and new measures to accelerate movement of significant fighting units and tactical air forces to the forward areas in the critical early phase of any potential conflict with the Warsaw Pact. Central to these efforts is the U.S. commitment to more than double its ground reinforcement rate in the first week after mobilization by adding prepositioned equipment for three additional prepositioned divisions by the end of FY 1982.

3. Reserve Mobilization

Additional measures will be taken to ensure that reservists and reserve formations are properly equipped, trained, and deployable where they are required. Programs include: bringing national reserve forces up to established NATO standards; improving the operational readiness of certain reserve units; and, for some European countries possibly forming additional units over the longer term from uncommitted reserve manpower.

4. Maritime Posture

NATO will develop a stronger and better-coordinated maritime defense. This effort will involve: enhancing maritime command, control, and communications; increasing capabilities for air defense of naval units; improving anti-submarine capabilities; developing better surface-to-surface anti-ship missile capabilities; increasing mine warfare capabilities; and cooperating in the development of key weapons systems. The correction of shortfalls in the number of ships will be sought under established NATO planning procedures.

5. Air Defense

Improvement of NATO's air defense capabilities will include: improvement in capabilities for identification of hostile aircraft; enhancement of the control of NATO's own combat aircraft; improvements in fighter aircraft; and the acquisition of better surface-to-air weapons and more air-to-air missiles.

6. Command, Control and Communications (C³)

Overall capabilities will be improved by: implementing the second phase of the NATO Integrated Communication System (NICS); more cooperation in the field of maritime communications; and improvements in combat net radios, NATO/national area interconnections, automatic data processing and war headquarters improvements.

7. Electronic Warfare (EW)

Increasing our ability to counter the sophisticated electronic warfare threat posed by the Warsaw Pact to NATO's forces is particularly important. Both offensive and defensive improvements in organization and procedures for NATO's EW forces, as well as closer cooperation in EW research and development, are included in the LTDP.

8. Rationalization of Armaments Production

The alliance can enhance its military efficiency by increased standardization and interoperability of weapons and munitions, resulting in savings that could be applied to an increase in forces. This important program is discussed in section III of this chapter.

9. Logistics

NATO will improve its policy and organization for enhancing the logistical support of combat forces. A position of NATO Assistant Secretary General for Infrastructure and Logistics has been created. Improvements will be facilitated by: defining more clearly the logistics support responsibilities of NATO commanders and member nations; providing improved logistics structures within NATO military commands; developing a logistics master planning system for better planning and management of NATO logistics functions; increasing war reserve stocks of combat equipment; seeking ways to improve flexibility in the use of ammunition stocks in war; and building up war reserve stocks of primary fuels, ammunition and supporting equipment with improved storage facilities.

10. Theater Nuclear Modernization

The United States will have the primary role in ensuring that NATO's theater nuclear forces continue as a significant feature of NATO's deterrence and defense posture. We and our allies are continuing to discuss specific programs to be pursued in this critical area. The objective is to develop a sound, mutually acceptable modernization plan that will insure adequate NATO theater nuclear forces in the future, yet be consistent with our efforts to limit nuclear armaments.

B. Implementation of the LTDP

In view of the growing Warsaw Pact threat to NATO, the need for rapid implementation of the LTDP is great. Since formal endorsement of the LTDP in May 1978, considerable effort has gone into development of operational and monitoring procedures and in clearly spelling out LTDP agreements.

On our part, working groups have been established under the DoD Steering Group for NATO Rationalization/Standardization for each program area, and chairmen have been designated. Coordinating existing U.S. planning and practices with the longer-range planning horizon of the LTDP, instituting new LTDP plans, and determining the U.S. contribution will be the main tasks of the DoD working groups in the next year.

The allied effort to find common ground for agreement in a 15-year military planning project is in itself an unprecedented undertaking. NATO has never tried to look so far ahead before. Nor has it attempted to deal with broad defense programs as an entity -- treating not only forces but their required support, whether NATO or national. The NATO Long Term Defense Program should provide invaluable guidelines for national programming and national support of NATO programs, and I expect our involvement in the program to be very beneficial to the United States and to NATO in the short as well as the long run.

III. NATO STANDARDIZATION AND INTEROPERABILITY

A notable deficiency of NATO relative to the Warsaw Pact is the lack of interoperability of weapons and munitions between NATO forces. The LTDP includes a program to overcome both the comparative disadvantage and distinct problems of coordination among the allies by standardizing equipment and generally rationalizing alliance defense efforts.

A. Framework for Improved Armament Cooperation

In addition to furthering NATO standardization and interoperability (S/I) policy and procedural improvements within DoD, we are working to enhance NATO armament cooperation with three initiatives -- general memoranda of understanding (MOUs) in reciprocal purchasing, dual production in NATO countries, and implementation of the family of weapons concept.

The purpose of the general MOUs is to encourage bilateral arms cooperation; one major step in this direction is the reduction of national barriers to fair competition by NATO member defense industries through reciprocal waivers of various "Buy National" requirements and practices. Such memoranda have been negotiated with several NATO countries, including Canada, France, Norway, Italy, Britain, Germany, and the Netherlands. Other NATO Allies have been invited to conclude such agreements with the United States.

Dual production of weapons systems can help to eliminate unnecessary duplication in research and development. Under this approach, a nation that has developed a system useful to the alliance would permit other nations or consortia of nations to produce the system. The United States presently is involved in dual production arrangements on the French/German developed ROLAND, and has offered for European production the AIM-9L air-to-air missile, COPPERHEAD laser-guided artillery projectile, and the STINGER surface-to-air missile.

The third approach to enhanced NATO arms cooperation is the family of weapons concept. Our primary goal in this area is the reduction of unnecessary duplication in development and production. We envision aggregating weapons that perform similar missions into a family and then agreeing to divide responsibilities for the development of these systems. When development is completed, each developer would make available to the other participants a data package for production. The initial families under discussion are the air-to-air and anti-tank guided missiles.

B. Supporting Management Structure

Cooperative actions can be effective in the long-term only if cooperation begins early in the equipment acquisition process and is continued throughout a system's life cycle. Therefore, the NATO Conference of National Armament Directors (CNAD) is developing a Periodic Armaments Planning System (PAPS). This system is comprised of two basic elements. The first is a procedure aiding the definition of military needs prior to the establishment of national programs, and encouraging multilateral solution of these needs. The second provides feedback on NATO programs to tell us how well the process is working. A related system is the NATO Armaments Planning Review which would help identify requirements for weapons harmonization and opportunities for arms cooperation from a review of national plans.

IV. OTHER NATO ACTIVITIES

A. NATO Infrastructure Program

NATO Infrastructure refers to those military facilities that are used by two or more NATO countries or that are of a high degree of common interest and are essential to the operations of NATO forces. Such facilities as airfields, naval bases, tank training areas, U.S. nuclear warhead storage sites, and fuel storage areas are considered infrastructure.

The NATO Infrastructure Program is commonly financed by 13 nations, or by 14 if France participates in a project. It is managed by NATO on the basis of commonly developed rules, procedures and criteria. At the beginning of each five year period, negotiated program financial ceilings and national cost shares are set, although provisions for higher program ceilings resulting from midterm program reviews have been made. Specific projects are submitted by the sponsoring nation after design is accomplished. Only then may a particular project be given approval by all of the participating nations on the NATO Progress and Payments Committee.

Not only has the NATO Infrastructure program proven invaluable to NATO as a means of financing common installations, such as war headquarters and the NATO Integrated Communications System (NICS), but participation in the program has been cost/effective for the United States as the proportion of projects used by U.S. forces has been greater than our proportionate contribution to the program.

Emphasis upon improving NATO readiness, reinforcement, C³I, and logistic support capabilities, particularly those measures identified in the LTDP, will require substantial increases in infrastructure funding. In addition, it has become evident that the program level established for the previous five-year program was inadequate to meet the needs. It is therefore the U.S. objective to secure a substantially increased ceiling for the five-year program commencing in 1980. It is also our objective to emphasize the use of the NATO infrastructure program where appropriate to satisfy our needs for facilities.

While there are many advantages to continuing and increasing our reliance on the NATO infrastructure program, several factors must be kept in mind. One is that the overall ceiling for the program, being a result of negotiations by 13 nations, requires compromises. Moreover, programming and approval by NATO and by 13 nations concerning projects to meet new requirements can be a lengthy process. Accordingly, the urgency of some projects may require national prefinancing so as not to delay establishing a critical capability. Secondly, before advocating eligibility for new types of facilities, we should examine what impact providing such facilities to all nations would mean to the alliance, and what effect this would have on the ratio of benefits to contributions for the United States.

Despite the advantages we gain from the infrastructure program, in strengthening the NATO defenses and in reducing what we pay for some of the construction we require in Europe, it would be a great mistake for the United States to view the infrastructure program principally as a device for letting our Allies finance our construction needs. Such an approach would reduce the effectiveness of this program in promoting allied participation in high priority measures critical to NATO's defense.

B. Host Nation Support

In addition to logistical support to NATO combat forces that has been established as a national responsibility, NATO also imposes on the allies an obligation to assist each other. The obligation establishes the basis for what is termed "host nation support." The United

States and The Federal Republic of Germany (FRG) have defined host nation support as civil and military assistance rendered in peace or war by a host nation to NATO forces and organizations that are located on the host nation's territory. Such support may include provision of manpower, equipment, or facilities and may range across such activities as repair of equipment or facilities, transportation for troops or munitions, civil labor, and procurement.

Host nation support is arranged through cooperative agreements in which the host nation agrees to perform a task or provide a resource that would otherwise customarily be the responsibility of the state that is lending its forces for the defense of the NATO area. The host nation includes agreed upon responsibilities in its overall wartime plans. The United States has concluded a number of these arrangements with NATO allies and has agreed to pay for services rendered in the event of hostilities. These arrangements have been concluded with the goals of reducing redundancy and waste, increasing readiness by employing in-place support rather than having to provide our own support along with our forces in the event of war, and increasing the integration of logistics into the NATO structure.

The U.S. Army, Europe (USAREUR) is increasing its already considerable reliance on NATO allies' logistics structures and resources. USAREUR's policy is to avoid early deployment of U.S. support forces to Europe for missions that initially could be accomplished equally well with host nation resources. The most widely used host nation support resources are civilian manpower, supplies, services, equipment, and accommodations. A number of bilateral agreements have been signed between the United States and the United Kingdom, Belgium, Luxembourg, and Germany. Host nation provided manpower, continuation of current labor service, and hired indigenous labor would amount to more than 88,000 spaces at D+90. If these spaces were filled by Americans, the cost -- in terms of equivalent spaces -- would be almost 130,000.

The U.S. Air Force has made significant progress in developing host nation support in its Collocated Operating Base Program. Specific areas for host nation support include fire and crash rescue services, rapid runway and other facilities repair, utilities distribution, billeting, messing, air traffic control services, disaster preparedness, and communications.

U.S. Air Force, Europe (USAFE) is presently evaluating the support capability of each airfield in NATO and may be able to reduce USAF requirements in the future, commensurate with the host nation

support to be provided. Significant additional savings are expected at host nation airfields when firm agreements are negotiated for use of vehicles, materiel handling equipment, and personnel.

C. NATO Airborne Early Warning and Control (AEW&C) Program

This program is designed to offset improvements in the offensive capability of the Warsaw Pact air forces, and to increase NATO's detection, warning, and control capabilities.

The AEW&C program includes the acquisition of AEW&C aircraft and the modification of 52 ground sites for compatibility with the aircraft systems. The program provides for common procedures and interoperability for the AEW&C "mixed force" of 11 British-built NIMROD and 18 U.S.-built NATO E-3A aircraft.

In December 1978, NATO Defense Ministers approved the procurement of the U.S.-built E-3A aircraft. The United States will have a dual role as agent and participant in this program. As agent we will work with the prime contractor to procure the aircraft. As a NATO member, subject to Congressional approval, we will participate in all aspects of the program.

The E-3A (complemented by the United Kingdom's NIMROD) will offer NATO distinctive advantages in all-altitude surveillance, warning, and control; will provide a "deep look" into unfriendly territory, eliminating gaps in conventional radar coverage; will present accurate and timely information to decision makers; and will deny a surprise attack capability to the Warsaw Pact forces.

D. Interrelated Training Programs

As an important part of rationalization efforts within NATO, increasing emphasis has been placed on joint or multi-national training. Consolidated training is often less expensive because of economies of scale. More important, however, common training will facilitate an interdependent defense effort among the NATO forces.

The Euro NATO Training Group is the organization charged with developing proposals for useful cooperative training. The group consists of training experts from all Alliance nations except France, Luxembourg, and Iceland. The group meets annually in plenary sessions, and sub-groups -- Joint Services, Army, Navy, Air Force, and Financial -- normally meet twice each year and appoint working groups for specific projects.

Differences in operational doctrine and procedures and variations in operational equipment pose difficulties in the development of extensive cooperation in training. As rationalization/standardization/interoperability (R/S/I) measures proliferate, these problems should become less important.

In the meantime, joint training projects have begun in a number of areas. German, Danish, Norwegian and Dutch students have completed or are completing basic helicopter pilot training in the United States. A first course in Long Range Reconnaissance (from what is now called the Euro Patrol School) was offered in 1977 for students from Belgium, Denmark, Germany, Greece, the Netherlands, Norway, the United States, and the United Kingdom. Joint training in the LANCE missile system has been conducted by Germany, Britain and the United States.

A number of other projects in joint training have either been conducted or are in the trial or planning stages. These include a NATO engineer course, FH70 and SP70 (155mm Gun) Training, Naval Control of Shipping (NCS) Training, the NATO Air-Ground Operations School, NATO Air Defense Ground Environment (NADGE) Training, and NATO joint jet pilot training. Some joint training occurs on a more informal basis with allied officers acting as observers in maneuvers of national forces other than their own. This approach helps develop a spirit of interchange and increases operational knowledge and experience.

Our intention is to continue U.S. involvement in these programs, through them to effect some savings in the costs of training our NATO forces, and to coordinate better our forces and their tactics with those of the allies, thus strengthening and expanding the capabilities of the joint NATO force.

V. SHARING THE NATO DEFENSE BURDEN

A. Overview of Allied Defense Efforts

The question of an equitable distribution of the burden in NATO's defense deserves serious attention. We have an obligation to the American people to be sure that the United States is not carrying an excessive proportion of the load. It is equally important to the vitality and effective functioning of NATO itself that the defense burden be fairly apportioned. Historically, alliances have become subject to internal fissures, and eventually cleavages, when some members began to believe that other members were not contributing adequately to the common security. We cannot afford to have such a feeling develop either here or among our allies, because our only hope for effectively confronting Soviet military power at reasonable cost is to pool our common resources.

Preventing inequities is not a simple task, and preventing misperceptions of inequity is even more difficult. Our continental allies, for example, have maintained their peacetime conscription of young men but note that we, the British and the Canadians have opted for purely volunteer forces. Our own experience clearly establishes that conscription is a burden. Some allies have pointed out what appear to them to be unusual risks accompanying their membership in the alliance, since a conflict involving NATO and fought on European soil could arise from a U.S.-Soviet confrontation elsewhere in the world.

Given the range of various indicators of economic strength within the alliance, plus the varying degrees of potential benefit to be derived from NATO, a precise calculation of equitable shares is impossible. However, when all factors and indicators are considered, I believe that the U.S. contribution is neither lavish nor parsimonious. Our attention should be focused on the difficult enough question of whether, in the aggregate, we are doing enough rather than simply on the nearly impossible one of whether our individual contributions are equitable.

B. U.S. and Allied Efforts

It is always tempting to use dollar amounts to make comparisons between contributions by several participants in a common effort. In the NATO case, however, this temptation should be strongly resisted. Manpower, for example, is very important in the U.S.-USSR balance. The USSR maintains standing armed forces of roughly four million while we maintain two million. But our NATO allies contribute nearly three million throughout the alliance while non-USSR Warsaw Pact allies contribute only a million to their side. The two sides are therefore approximately equal in existing manpower, allowing the United States an all-volunteer force while at the same time giving us a counterweight to Soviet military strength in the world's most important theater of potential conflict. Through conscription a number of our allies obtain manpower at a lower budgetary cost than we can. Therefore, a comparison of U.S. and allied defense budgets does not adequately characterize the contribution made by the allies.

Apart from straight calculation of dollar costs, the allied contribution is substantial. Over 90 percent of the peacetime NATO ground forces deployed in Europe are European. European military aircraft comprise 75 percent of the total located in the NATO area in peacetime. The allies furnish to us, free of charge, a considerable amount of real estate and a number of facilities that might otherwise produce sizable revenues.

The allies also provide a reserve strength that is large in proportion to our own. In Norway, for example, all physically able men are required to serve in the armed forces. Those in the Army serve one year of active duty and remain in the reserves until they are 40 to 45 years old. After that they must serve in the Home Guard until they are 50. Reserves and Home Guard members keep their uniforms and individual weapons at home and participate in alerts and exercises. This system provides Norway with a reserve force that the United States has no plans to match in terms of percent of its population. Norwegian armed forces in total comprise a proportion of Norwegians that would be equivalent to 14 million Americans. Less than three million Americans form our equivalent force.

Some examination of spending can be instructive. The U.S. devotes 5.4 percent of its gross domestic product (GDP) to defense, compared to an average of around 3.7 percent for NATO Europe. But allied defense spending is on the rise; between 1970/1971 and 1976/1977 real spending by the allies increased by approximately 13 percent.

The United States has pursued -- quite rightly, I believe -- an overseas defense strategy in seeking to defend vital U.S. interests far away from our own territory. This strategy has entailed and will continue to require costs for capability development, transportation, and subsidy of U.S. forces and their families living abroad that cannot simply be passed on to our allies.

CHAPTER 8
SECURITY ASSISTANCE

I. INTRODUCTION

Security assistance has been an important instrument of United States foreign and national security policy for more than three decades. The essential purpose of the Security Assistance Program is to strengthen the security of the United States by enhancing the defense posture of nations with which we share political and military interests. Through carefully selected sales, grants and training assistance, the United States has enabled friendly states to participate in and share the burdens of collective security.

The Secretary of State has the statutory responsibility to determine the nature and scope of Security Assistance Programs and to provide continuous direction and supervision of the program. The Department of Defense administers the following program elements:

- The Military Assistance Program (MAP), which involves grants of U.S. combat equipment, materiel and services (except training) to foreign governments.
- Foreign Military Sales (FMS) through government to government channels, which permit the purchasing government to use the procurement services of the Defense Department as well as direct purchase of military training. The purchasing government pays all costs that may be associated with a particular purchase, including a general administration surcharge to meet U.S. costs of managing the FMS system.
- Credit Financing, which is provided by the U.S. Government in the form of either direct loans or guarantees to lending institutions to assist in financing the purchase of U.S. equipment and services -- both directly from U.S. contractors and through U.S. Government channels. Credit financing for FY 1980 will provide Foreign Military Sales credits for use by 25 foreign governments.
- The International Military Education and Training (IMET) Program enables foreign students to be trained in U.S. military schools and facilities with U.S. military personnel. For FY 1980, IMET will provide grant training for students from 52 countries.

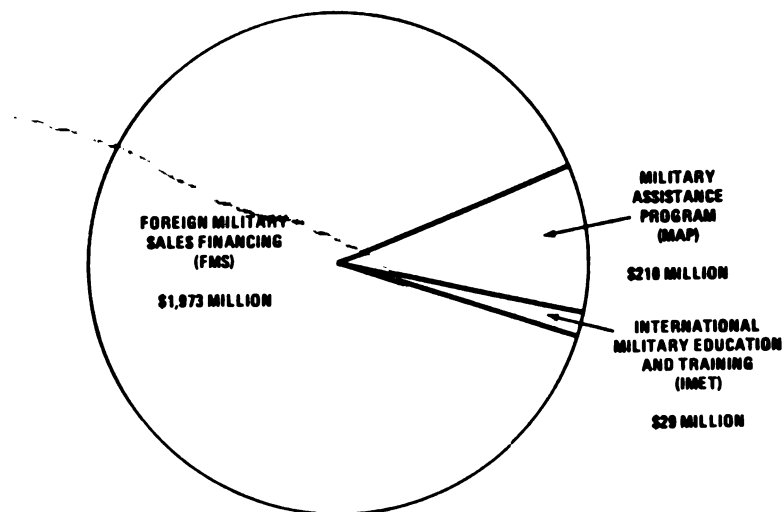
Three other components of security assistance are not administered by the Defense Department. One is the Economic Support Fund (ESF)* -- a form of economic assistance for Egypt, Jordan, Israel, Syria, Turkey and the Southern Africa region -- administered by the Agency for International Development (AID) and totalling \$1,882.00 million in FY 1979. The second is Peacekeeping Operations (PKO) administered by the State Department and totalling \$39.4 million in FY 1979. The third is the direct export through commercial sources of items controlled by the State Department Office of Munitions Control under the International Traffic in Arms Regulations (ITAR).

The statutory authorization and appropriations for MAP, IMET, and credit financing of FMS are provided in annual foreign assistance legislation. This legislation is separate and distinct from that authorizing and appropriating funds for DoD programs. Foreign Military Sales and deliveries of defense items through commercial channels may be made on cash terms, or they may be financed with credits through the Federal Finance Bank. In either case, the credits are guaranteed by the Department of Defense. Credits extended by the U.S. are reimbursed by purchaser governments in full, with interest, except for those sums "forgiven" for Israel by statute. MAP and IMET are carried out under the Foreign Assistance Act as grant aid for which the U.S. receives no reimbursement. ESF may be grant or loan, depending on the circumstances.

*The International Security Act of 1978 replaced Security Supporting Assistance (SSA) with ESF and PKO.

Chart 8-1

RELATIVE SHARE OF DOD ADMINISTERED SECURITY ASSISTANCE PROGRAMS FOR FY 1979



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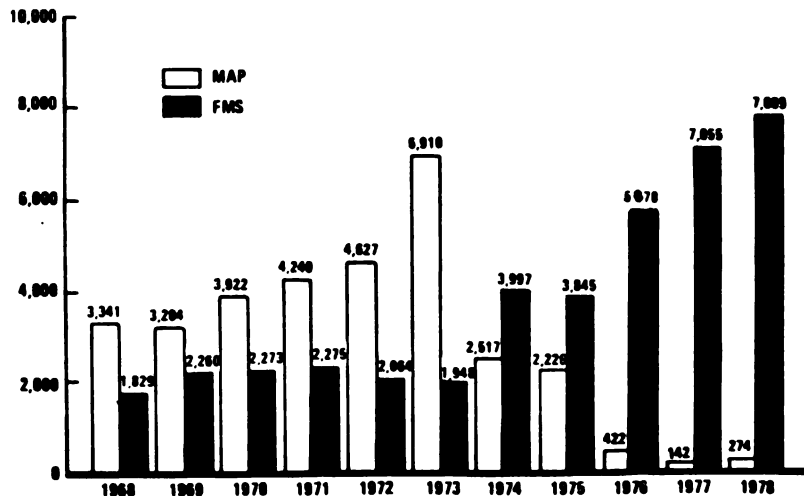
The U.S. Security Assistance Program has undergone major changes since its inception in FY 1950. At that time grant aid comprised the bulk of U.S. arms transfers. In a massive program to rearm U.S. allies, mainly in Europe, the Congress appropriated the FY 1978 dollar equivalent of over \$15 billion annually in the early 1950s for grants of military assistance. Today, however, grant aid accounts for only a small portion of U.S. security assistance. The grant materiel program (MAP) authorized and appropriated by the Congress for FY 1979 totals about \$210 million and is earmarked for only five countries: Portugal, Spain, Jordan, the Philippines and Greece. MAP programs for Thailand and Indonesia were terminated at the end of FY 1978.

There were almost no Foreign Military Sales 25 years ago when the grant program was at its height. In FY 1964, FMS exceeded grants for the first time. FMS rose markedly in the mid-70s -- reaching a peak in FY 1975 when sales orders in FMS channels reached \$15.1 billion (in FY 1978 dollars). The FY 1978 FMS figure was \$13.5 billion.

Until three years ago, IMET was funded as part of the overall grant program. At that time, Congress provided separate legislative authority and funds for the IMET program. Each year since then, the Congress has reduced the Administration's IMET funding requests by 22-23 percent, which means that we have been unable to train as many students as programmed. Sharply increased tuition costs and inflation further complicate our training effort. Congress has appropriated \$29 million for the IMET program for FY 1979, which will enable us to train approximately 3,500 foreign students in this country and abroad.

Chart 8-2

**GRANT & FMS DELIVERIES
(MILLIONS FY 78 DOLLARS)**



NOTE: Yearly totals often include deliveries under agreements reached several years previously.

The FMS credit financing program has remained relatively constant in recent years. For FY 1979, Congress has appropriated \$654.5 million in credit funds, which will finance about \$1.97 billion on past or new sales to 26 countries. Israel is slated to receive \$1 billion out of this total; repayment of one-half of this amount will be "forgiven".

II. THE CONVENTIONAL ARMS RESTRAINT POLICY OF THE CARTER ADMINISTRATION

The totals of annual worldwide arms sales by all nations to the Third World have recently risen to over \$20 billion. Each year, larger numbers of more sophisticated weapons are transferred. Because of the potential threat to peace embodied in this level of arms traffic, the Carter Administration has decided that the United States must take steps to restrain its arms transfers and to enlist the cooperation of other suppliers as well as recipients.

One of President Carter's first acts was to direct a review of U.S. conventional arms transfer policy. On the basis of this review, the President issued a major policy statement regarding conventional arms transfers. Some of the key points of the policy, announced on May 19, 1977, are as follows:

- Arms transfers will henceforth be an exceptional tool of U.S. foreign policy, to be used only in cases where it can be clearly demonstrated that the transfer contributes to our national security interests. The necessity of each arms sale must be demonstrated. The burden of persuasion will be on those who favor a particular arms sale, rather than on those who oppose it.
- The dollar volume of new commitments to non-exempt countries under FMS and MAP for weapons and weapons-related items will be subject to a ceiling. Some services, construction and commercial sales are not included.
- As a general policy the United States will not be the first supplier to introduce into a region advanced weapons systems which create a significantly higher combat capability. The United States will not agree to sell or co-produce weapons until they are deployed with U.S. forces. Co-production agreements with non-exempt countries for significant weapons, equipment, and major components are prohibited. In addition, the United States will not develop or significantly modify advanced weapons systems for the sole purpose of export.
- This restraint policy will apply to all states except those in NATO, Australia, New Zealand and Japan.

- The United States will continue to promote respect for human rights in potential recipient countries. It will also assess the economic impact of arms transfer to Lesser Developed Countries (LDCs).
- The United States will meet with other arms suppliers to discuss possible measures for limiting arms transfers. The United States will encourage regional arrangements among purchasers to limit arms imports.

III. THE ARMS EXPORT CONTROL BOARD

The Arms Export Control Board (AECB) was established in order to aid in the implementation of International Security Assistance and Arms Export Control Act of 1976. The purpose of the board is to advise the Secretary of State, National Security Council and President in matters relating to conventional arms transfers. The board functions in an advisory, not decision-making capacity. It is composed of senior representatives from the Department of State, the Office of the Secretary of Defense, the Joint Chiefs of Staff, the National Security Council, the Arms Control and Disarmament Agency, the Treasury Department, Office of Management and Budget, the Agency for International Development, the Commerce Department and the intelligence community. The Under Secretary of State for Security Assistance, Science and Technology serves as chairperson.

The AECB provides recommendations in the following specific functional areas:

- Provision of systematic and comprehensive policy oversight in the arms transfer field.
- Review of security assistance plans and programs to ensure that they support overall U.S. policies and are fully coordinated with other policy instruments. Such reviews specifically include human rights and arms control considerations.
- Preparation of annual program funding levels and budget submissions and consideration of proposed program changes.
- Establishment of general policy guidelines and criteria for arms transfers and related activities such as co-production, technology transfer, third-country transfers, and export promotion policy.
- Selective review of key transfers of defense articles and services to ensure they are in accord with overall U.S. policies.

IV. ARMS TRANSFERS CEILING

The arms transfer ceiling plays an important role in the Administration's efforts to curb weapons sales. The ceiling is a maximum dollar figure not to be exceeded by the U.S. government in its foreign military sales for that fiscal year. The Administration's goal is to decide on an annual reduction that carefully balances our important national security interests on the one hand with our concern over the large increases in worldwide arms transfers on the other. Under the ceiling, U.S. sales to non-exempt countries were reduced in constant dollars by eight percent in FY 1978 and will be reduced by an additional eight percent in FY 1979. The ceiling figure for FY 1979 is \$8.43 billion in FY 1979 dollars. The comparable FY 1978 figure is \$9.16 billion (in FY 1979 dollars). The effects of the U.S. arms ceiling on the nature and level of arms transfers made by other suppliers is an area that we are watching closely. The ultimate success of our policy will hinge on our ability to involve other major suppliers in the development and implementation of guidelines for multilateral restraint.

V. CONVENTIONAL ARMS TRANSFER (CAT) TALKS

While the U.S. is the largest arms supplier, other major suppliers include the USSR, France, West Germany, the United Kingdom, Poland, East Germany and Czechoslovakia. The Administration recognizes that actual reductions in the worldwide traffic in arms will require multilateral cooperation, and has initiated a series of discussions aimed toward that objective.

In December 1977 the United States and USSR (the two largest arms suppliers), met for the first time to discuss the prospects for bilateral and multilateral arms restraint initiatives. Subsequent meetings in Helsinki in May and July 1978 and Mexico City in December 1978 allowed the two sides to explore a range of alternative approaches for curbing the arms flow. The U.S.-Soviet talks are only a first step. The full cooperation of all suppliers and recipients will be required for the creation of a workable restraint regime. The "Declaration of Ayacucho" of December 1974, sponsored by Peru and subscribed to by all of the Andean countries as well as Argentina and Panama has not yet produced any tangible results. Current initiatives by Venezuela and Mexico seek to give substance to this declaration.

VI. THE UNITED STATES AND USSR AS ARMS SUPPLIERS

Comparative assessments of the United States and USSR as arms suppliers have tended to emphasize the dollar value of sales or other transfers. These comparisons should be viewed with some caution. Comparisons based on dollar values can be misleading because of currency conversion problems, varying inflation rates, varying credit terms, the difficulty of determining what costs are actually included

In the foreign price, and the problem of making a fair assessment of actual costs. Comparisons based on physical counts can also be misleading because they do not take into account differences in quality and effectiveness. Nor do they provide a common denominator for assessing the aggregate level of sales and deliveries.

Furthermore, while we know with some precision the total value and quantities of equipment and services that the United States has transferred, we are less certain both of the quantities and value of arms -- let alone the services -- transferred by others. For example, major combat equipment accounted for about three-fourths of Soviet sales to lesser-developed countries during 1974-1976, whereas actual weapons comprised less than 40 percent of U.S. sales during the same period. Services play only a minimal role in Soviet sales, but have accounted for roughly 30 percent of U.S. sales.

The United States and the Soviet Union also tend to transfer different types of equipment, which only increases problems of comparability. For example, the United States is the main supplier of helicopters, major naval surface combatants and submarines to lesser-developed countries. The USSR, on the other hand, is the leading supplier of combat aircraft, tanks, self-propelled guns, artillery, guided missile patrol boats, and surface-to-air missiles.

Finally, the Soviets tend to manipulate the prices they charge for arms to suit their foreign policy goals, whereas the United States does not. Thus, estimates of the dollar value of Soviet transfers are likely to be artificially low.

TABLE 8-1

U.S. Foreign Military Sales
Percent of total dollar sales

	FY 74	FY 75	FY 76	FY 77	FY 78
Weapons and Ammunition	51%	46%	28%	39%	35%
Support Equipment	9%	7%	7%	5%	12%
Spare Parts and Modifications	16%	17%	15%	21%	19%
Support Service	24%	30%	50%	35%	34%

VII. REGIONAL SECURITY ASSISTANCE PROGRAMS

A. Near East and South Asia

In the event of an Egyptian-Israeli peace treaty, a new set of security issues may present itself in the Middle East. The western front between Israel and Egypt should become less volatile. However, Israel's other fronts could become the focus of tension. The nature of the requirement for military support of Israel will probably change, but the requirement itself is likely to continue as Israel will have to face the loss of the Sinai buffer, a possible increase in irregular types of threats and the possibility of greater conventional threats from other neighbors. In addition to assisting Israel, the United States is likely to provide military support for Egypt, and the close military equipment relationship between the United States and Jordan may also be expected to continue. Saudi Arabia remains an important purchaser of U.S. military equipment, and sales programs to the country will continue.

A reassessment of economic and social programs in Iran had led the Shah to limit his arms purchase policies even before the current crisis reached its present proportions. This policy stemmed from an announced intention of placing more emphasis on internal economic development.

B. Europe

Security Assistance Programs for Europe are designed to promote mutual objectives of enhancing the defense capabilities of the NATO alliance and assisting friendly and neutral nations in their efforts to maintain forces for the preservation of their independence.

Security Assistance for most of our NATO allies is limited to Foreign Military Sales on a cash basis. Under these procedures, defense equipment and services are purchased from the U.S. Government. This program supports NATO efforts toward standardization, interoperability, and rationalization.

Greece, Portugal, Turkey, Austria, Finland and Cyprus participate in a variety of additional security assistance programs. The U.S. will provide to Spain in FY 1980 an additional portion of the grant military aid specified in the 1976 U.S.-Spanish Treaty of Friendship and Cooperation and the \$120 million in FMS credits, \$2 million in IMET funds, and \$7 million in SSA required annually by the treaty.

C. East Asia and Pacific

Since 1976 the nature of our security assistance program in East Asia and the Pacific has changed significantly. The Philippines -- the location of major U.S. air and naval facilities -- is the only East

Asian country still receiving grant materiel assistance. FMS credit programs contribute to continuing modernization of the defense forces of Indonesia, Republic of Korea, Malaysia, the Philippines and Thailand although since 1976 only Korea and Indonesia have received increases in FMS credits. Continuing a substantial FMS financing program for the Republic of Korea will further help to improve Korean defense capabilities and allow the country to assume a greater share of its defense responsibilities as U.S. ground forces are withdrawn. The cost-free transfer to the South Koreans of the equipment left by withdrawing U.S. ground forces, which was authorized by Congress in the FY 1979 security assistance act, will continue into FY 1982. The IMET program has remained essentially constant at \$6.7 million despite increased training costs.

D. Latin America

Assistance to countries in Latin America is restricted to IMET and FMS financing. These modest programs will assist selected recipient countries to modernize their defense forces. Latin American regional FMS financing is being significantly reduced. Efforts to exercise arms restraint and improve human rights have been factors in this reduction. Twelve countries in Latin America will participate in IMET programs in FY 1980.

Where U.S. arms transfers accounted for more than 70 percent of total arms acquisitions by Latin American countries over a 16 year span following World War II, the U.S. portion during the decade 1967-1976 was less than 20 percent.

E. Africa

Modest security assistance levels for countries in Africa south of the Sahara further the U.S. policy of assisting friendly governments and attempting to ensure a degree of stability in this important and unstable region.

Security assistance programs in Africa for FY 1980 include FMS programs for Kenya, Botswana, Liberia, Cameroon, Zaire, Morocco, Sudan and Tunisia, as well as small cash sales to other countries. In addition, sixteen nations will participate in IMET programs.

VIII. PROBLEM AREAS

The Carter Administration remains firmly committed to reducing the global level of U.S. arms sales. However, certain aspects of the arms transfer process, as well as important military, political and economic considerations, make it difficult to achieve that objective which is in turn only part of the more fundamental objective of reducing the total level of sales by all suppliers.

Deliveries of materiel and services, for example, usually occur over a period of several years after a sale is made. As of November 1978 there was a backlog of over \$44 billion of undelivered orders in the "pipeline" as a result of U.S. sales concluded in past years. These deliveries on past orders are not affected by our policy to restrain new sales, but they will contribute to the actual flow of arms equipment and services until they are completed.

The reduction of conventional arms transfers (CAT) will require the cooperation of other major suppliers. The United States is currently engaged in the CAT talks and other discussions, but the process will take time. The situation is complicated by the strong economic and political interests that both Western and Eastern European suppliers have in arms sales. Balance-of-payments factors may also make some Europeans reluctant to reduce arms transfers.

Similarly, indigenous arms production in some of the countries of South America and South Asia is on the increase, and further complicates efforts to implement our restraint policies. For a variety of reasons, some of these states are seeking external markets. The possibility of a number of regional "mini-suppliers" emerging in the near future further emphasizes the importance of reaching agreement soon on a multilateral restraint regime that would involve both suppliers and recipients.

We also have to balance legitimate security needs (our own, and those of countries to which we transfer arms) against our other interests including the potential adverse impact of some transfers on our human rights policy. In compliance with Section 502(B) of the Foreign Assistance Act of 1961, as amended, and with its own policy directives, the Administration now reviews all arms transfer proposals from a human rights standpoint. U.S. military assistance and arms transfers are often perceived as implying U.S. support for the governments that receive them. Moreover, some types of arms we provide, finance, or license could possibly be used by a recipient for purposes of repression. Although we are prohibited by U.S. law, from providing assistance for these purposes, our ability to prevent them once the transfer is made is often limited.

Military assistance can be used to make clear our position on human rights by altering the size or functions of our military representation, the level of training grants, and the quantity and types of arms transfers. Some governments will probably turn to other suppliers over time if our assistance is reduced. However, many that desire close relations with the United States may respond positively to an expression of U.S. intention to reduce or eliminate the military assistance aspect of a relationship.

Finally, although our security assistance policy is not motivated by economic concerns, there are certain economic costs to the United States in reducing overseas arms sales. There may be problems associated with keeping certain production lines open. When overseas markets are reduced, defense contractors' revenues will be lower, and certain Research and Development (R&D) expenses, now recouped from overseas purchases, will fall upon the U.S. taxpayer. As the President noted in his report to Congress, the policy is not expected to have a major effect on overall U.S. trade performance, inasmuch as arms sales constitute less than one percent of current U.S. trade. However, the impact may be felt in certain local areas where the economy depends extensively upon weapons manufacture unless and until investment and the labor force involved turn to the production of other goods and services.

Despite these acknowledged problems, the need for restraint is overriding. An unrestricted international traffic in conventional arms can endanger everybody's interests, supplier and recipient alike.

The United States will persevere in its search for ways to achieve a balance in restraining arms trade, while meeting our other foreign policy objectives. The Department of Defense is ready to deal with the problems that may be involved.

CHAPTER 9

COMMAND, CONTROL, COMMUNICATIONS AND INTELLIGENCE

I. PROGRAM BASIS

A. Objectives and Requirements

Command, control, communications, and intelligence (C³I) systems are essential to the implementation of strategy, control of forces, and employment of weapons in modern warfare. These systems support day-to-day operations, rapid assessment of indications and warning information for decision makers in periods of increased tension and impending conflict, accurate situation monitoring and allocation of resources in crisis situations, and vigorous conduct of military operations in wartime. Elements and areas requiring support include:

- National Command Authorities and (as their agents) the Joint Chiefs of Staff, on a worldwide basis;
- Unified and Specified Commands and other military commanders in their areas of responsibility;
- Individual military units within their zones of interest.

The war-fighting capability of our armed forces and of our allies must not be compromised by ineffective or vulnerable C³I systems. Interoperability of U.S. and Allied systems is vital to the timely and unambiguous assessment of the situation and to military operations in a NATO/ Warsaw Pact conflict.

B. Major Needs

The key areas in which our C³I capabilities need improvement relate to their effectiveness in combat, survivability, and resistance to jamming and exploitation. These measures are particularly important in view of the emphasis that our potential adversaries place on destruction or disruption of our C³I capabilities.

II. PROGRAM DESCRIPTION

The five-year program stresses correction of the deficiencies in our C³I capabilities.

Strategic C³I initiatives emphasize:

- Enduring survivability of command and control by the National Command Authorities, beyond execution of the Single Integrated

Operational Plan (SIOP) and into the period of reconstitution of forces and support of optional responses following an attack.

- Adaptability of our forces to meet future strategic threats.
- Improving our attack assessment capabilities.

Our theater C³I initiatives also emphasize the achievement of survivability of essential command and control functions for U.S. force management at lower levels of conflict, with concomitant efforts aimed at improving our capabilities for participation in multinational operations in support of alliance commitments.

Tactical command and control efforts for FY 1980 and subsequent years stress improved interoperability between the Services and with the forces of our allies. Because tactical C³ systems are typically procured in large numbers and require substantial maintenance resources and logistics support, we are also emphasizing the achievement of greater operational utility and standardization at lower cost. In addition, the FY 1980 program calls for continued development, acquisition, and deployment of counter-C³ capabilities. These means are needed to offset advances in military surveillance, communications, and command and control being made by potential adversaries.

C³I programs which directly relate to strategic and theater nuclear, land, naval and tactical air capabilities have been presented in the chapters dealing with those forces. Defense-wide and NATO-related command, control, communications and intelligence programs are discussed below.

A. Intelligence Programs

1. National Intelligence

National intelligence supports the National Command Authorities -- the President and the Secretary of Defense -- and other senior military and civilian policymakers. It is used by force planners and those who develop weapons systems. The national intelligence effort is organized in a National Foreign Intelligence Program (NFIP), which comprises a significant portion of the intelligence efforts of the Departments of Defense, State, Energy, Treasury, the CIA and FBI, and the counterintelligence efforts of the FBI, CIA, and Department of Defense.

Within the Defense portion of the NFIP, there are five intelligence programs -- the Consolidated Cryptologic Program, the General Defense Intelligence Program, the Air Force and Navy Special Activities, and the Defense Foreign Counterintelligence Programs.

Within the Defense budget are intelligence programs integral to the strategic and general purpose forces which support tactical commanders in the use of their forces. These "tactical" intelligence systems, as a secondary function, also provide intelligence to national level consumers, as national intelligence systems provide information for tactical commanders. The two processes are usually complementary rather than duplicative.

a. Consolidated Cryptologic Program

The Consolidated Cryptologic Program (CCP) comprises efforts of the National Security Agency and Service Cryptologic Agencies engaged in the Signals Intelligence (SIGINT) mission. SIGINT provides political, scientific and economic, as well as military, intelligence, and is essential for warning. Military intelligence derived from SIGINT provides important information on the deployment and status of potentially opposing forces, and insights into military technological advances often unobtainable by other means.

b. General Defense Intelligence Program

The General Defense Intelligence Program (GDIP) includes all Defense Intelligence activities in the National Foreign Intelligence Program (NFIP) except SIGINT and specialized national programs. It includes all Defense intelligence production and collection in the NFIP, technical intelligence, the Atomic Energy Detection System, special security services, certain intelligence communications and within the Defense Intelligence Agency, management systems for intelligence collection and production requirements and tasking.

GDIP efforts emphasize collection and production of defense intelligence to support the readiness and employment of U.S. forces. Intelligence requirements are determined by missions assigned the Department of Defense and its components. They need intelligence as a basis for weapons and materiel research and development, and in support of contingency planning and wartime operations.

The extensive overlap between peacetime national intelligence needs and those of the OSD/JCS, the Military Departments and the forces in their wartime missions puts the GDIP in the unique position of providing support simultaneously to the highest national level users, defense management, and major commands, as well as tactical users of intelligence.

c. Air Force and Navy Special Activities

These specialized programs provide essential information to national policy makers and to force commanders.

d. Defense Foreign Counterintelligence (FCI) Program

This program consists of the counterintelligence activities of the three military departments including investigations of espionage and operations against hostile intelligence establishments. Also included are collection and production activities in support of national and departmental needs for counterintelligence and information on international terrorism. Defense counterintelligence activities are conducted in coordination with the FBI within the United States and in coordination with the CIA abroad.

2. Indications and Warning Intelligence

This program responds to national, departmental and command needs for both strategic and tactical warning of events that affect national security, including warning of attack against the United States and its allies. It includes the worldwide Defense indications network, indications and warning collection by human sources and operation of certain technical collectors which provide coverage of potential crisis areas.

3. Intelligence Support to Tactical Commanders

The DoD has undertaken a full-scale effort to develop a master plan for coordinated, integrated, and timely acquisition and use of national and tactical intelligence assets in support of tactical commanders. This program entails participation by senior OSD officials, the Services, cognizant Defense Agencies, the Unified and Specified Commands, and the Intelligence Community Staff, and deals comprehensively with the problem of matching intelligence capabilities and opportunities to the commanders' information requirements.

4. Intelligence Oversight

On January 24, 1978, President Carter issued Executive Order 12036, concerning the organization and control of U.S. foreign intelligence activities. In a September 1978 letter to the Secretary of Defense, President Carter further defined reporting procedures pursuant to E.O. 12036, and stated his intention to deal personally with intelligence abuses. To assure the legality and propriety of DoD intelligence and counterintelligence operations, the Inspector General for Defense Intelligence has continued to exercise independent oversight over these activities. As part of the intelligence oversight program he reviews the inspection efforts of the Service and DoD agency Inspectors General, conducts his own inspections and, when appropriate, investigates allegations of illegalities and improprieties. The Inspector General for Defense Intelligence reports questionable activities directly to the Deputy Secretary of Defense and the White House Intelligence Oversight Board. We believe that the DoD intelligence oversight program has fostered legality and propriety within the DoD intelligence community without inhibiting legitimate collection efforts.

B. Command and Control Programs

1. Command and Control Systems Acquisition Management

The Defense Science Board (DSB) completed a study in July 1978 on DoD management of command and control systems. They concluded that our command and control systems have not kept up with the changes in warfare or available technology. The DSB saw a strong need for:

- revision of DoD acquisition processes to accommodate the unique characteristics of command and control systems;
- establishment of better mechanisms for command participation in the command and control system acquisition process;
- a central organization for development of command and control systems that cuts across Service lines.

The DSB report has been accepted by the Deputy Secretary of Defense and actions are being taken to implement the recommendations.

2. Deployable Crisis Management Capabilities

The current systems which support rapid situation assessment and control in crisis are deficient. Summarized below are the programs designed to remove these deficiencies.

	FY 1978	FY 1979	FY 1980	FY 1981	
	Actual	Planned	Prop'd	Prop'd for	
	Funding	Funding	Funding	Authori- zation	
<u>Joint Crisis Management</u>					
<u>Capability (JCMC)</u>					
This JCMC program combines our efforts to improve our deployable crisis management capabilities. Included in this program are the former WWMCCS Mobile Airborne Command Center (ABCC) and rapid reaction deployable C ³ capabilities. In addition the JCMC program is expected to modernize capabilities currently provided by the Joint Airborne Command Center-Command Post (JACC-CP),	Development:				
	\$ Millions	-	-	4.0	2.0
	Procurement:				
	\$ Millions	-	-	3.6	-

Joint Crisis Management Capability (JCMC) (con't)

the Airborne Battlefield Command Control Communications (ABCCC) capability for tactical air forces, and the Joint Communications Support Element (JCSE).

3. WWMCCS Automated Data Processing (ADP)

The adequacy of the automated data processing (ADP) computers in the Worldwide Military Command and Control System (WWMCCS) has received considerable attention from the Congress in the past year. These concerns centered upon the age of the computers, their security and utility in support of operational commanders. These computers support a wide range of command and control tasks -- contingency, general war and force deployment planning; military airlift, ground and sealift management; tactical air operations; warning information correlation; monitoring of force status and execution.

Although more advanced computers are now available, the age of the hardware is not the determining factor in overall system utility. For most applications, the computers render effective support. The principal exception occurs in crisis situations, when commanders need quick answers to a broad range of possible questions. The solution is not as dependent on hardware as on gathering in advance a wide range of detailed information, keeping it current, and organizing it for ready use. Currently, this kind of information is gathered as needed through other elements of the WWMCCS -- staff organizations and global communications networks. The WWMCC System Engineer is developing an overall management plan which will be used by the Deputy Under Secretary for Research and Engineering (C³I) to coordinate actions leading to the restructuring and improvement of WWMCCS ADP systems.

4. Joint Interoperability of Tactical Command and Control Systems

The program for Joint Interoperability of Tactical Command and Control Systems (JINTACCS) is designed to assist in achieving interoperability of service tactical command and control systems in joint operations.

	<u>FY 1978</u> <u>Actual</u> <u>Funding</u>	<u>FY 1979</u> <u>Planned</u> <u>Funding</u>	<u>FY 1980</u> <u>Prop'd</u> <u>Funding</u>	<u>FY 1981</u> <u>Prop'd for</u> <u>Authori-</u> <u>zation</u>
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JINTACCS

At the request of Congress this program was reorganized in 1977-78 to provide a more streamlined, responsive management structure and to accelerate the program schedule. The JINTACCS program has been designated the U.S. agent responsible for achieving interoperability of NATO tactical data systems.

Development:
\$ Millions

7.1	26.7	42.9	51.5
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5. Joint Battlefield Exploration and Target Acquisition (BETA)

The purpose of this program is to expedite land target identification, location and dissemination to air and ground combat elements.

	<u>FY 1978</u> <u>Actual</u> <u>Funding</u>	<u>FY 1979</u> <u>Planned</u> <u>Funding</u>	<u>FY 1980</u> <u>Prop'd</u> <u>Funding</u>	<u>FY 1981</u> <u>Prop'd for</u> <u>Authori-</u> <u>zation</u>
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BETA

Project BETA is a joint program to evaluate the ability of automated centers to combine information on ground targets from many sensor systems. A NATO-based demonstration and evaluation will take place in 1980.

Development:
\$ Millions

12.6	15.9	12.8	5.7
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6. Tactical Command and Control/Battlefield Systems Integration

This area includes our efforts to improve the effectiveness of the Army, Air Force and Marine Corps in carrying out tactical command and control functions.

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	<u>FY 1978</u> <u>Actual</u> <u>Funding</u>	<u>FY 1979</u> <u>Planned</u> <u>Funding</u>	<u>FY 1980</u> <u>Prop'd</u> <u>Funding</u>	<u>FY 1981</u> <u>Prop'd for</u> <u>Authori-</u> <u>zation</u>
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Army Tactical Operations System

This program utilizes improved automated data processing and display technology to provide division and corps commanders with a system responsive to real-time battlefield needs. This system will be tested in FY 1980.

Development: \$ Millions	8.8	36.8	36.5	10.0
Procurement: \$ Millions	-	-	15.0	-

Army Tactical Data Systems (ARTADS)

This project is an endeavor to reduce automated systems costs through standardization of automated data processing equipment and changes in programming languages.

Development: \$ Millions	8.1	11.0	18.6	34.6
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Tactical Air Control System (TACS)

TACS will continue to be improved and automated and procurement of the automated Tactical Air Control Center begins in FY 1980.

Development: \$ Millions	8.4	14.0	10.0	8.2
Procurement: \$ Millions	9.2	-	2.1	-

Marine Corps Tactical Air Operations Center (TAOC)

The TAOC-85 program will replace existing Tactical Air Operations Center equipment developed under the Marine Tactical Data System (MTDS) in 1966. This program is designed to enhance Marine Corps air defense capabilities. Full-scale development will begin in FY 1980.

Development: \$ Millions	1.2	9.8	11.2	17.3
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	<u>FY 1978 Actual Funding</u>	<u>FY 1979 Planned Funding</u>	<u>FY 1980 Prop'd Funding</u>	<u>FY 1981 Prop'd for Authori- zation</u>
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**Tactical Air Intelligence
System Activities**

Funding includes support of the BETA program, integration of various tactical intelligence processing systems, and other intelligence systems.	Development: \$ Millions	8.5	8.6	9.6	7.6
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USAFE Command and Control System

Improvements to the Operational Application of Special Intelligence System (OASIS) will be made through the generation of additional computer programs.	Development: \$ Millions	3.1	4.4	5.9	9.5
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7. Joint Tactical Information Distribution System (JTIDS)

The JTIDS is a major joint Service development program to provide a jam-resistant secure integrated communications, navigation, and identification system capability to tactical forces. It will be the primary system for passing critical real-time information to large numbers and types of forces. We have offered JTIDS to our NATO allies in order to achieve greater interoperability. Thus far only the United Kingdom has ordered terminals for their NIMROD Airborne Early Warning (AEW) aircraft.

	<u>FY 1978 Actual Funding</u>	<u>FY 1979 Planned Funding</u>	<u>FY 1980 Prop'd Funding</u>	<u>FY 1981 Prop'd for Authori- zation</u>
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JTIDS

Initial production funding for Airborne Warning and Control Systems (AWACS) terminals is provided in FY 1980. This system will be operational in the early 1980s. Engineering development of terminals for fighter aircraft will begin in mid-1979.	Development: \$ Millions	46.7	76.4	76.3	92.5
	Procurement: \$ Millions	-	-	16.5	11.0

C. Communications Programs

1. The Defense Satellite Communications System (DSCS)

The DSCS, a Super High Frequency (SHF) satellite communications system, is key to linking the continental United States with forces located overseas. Both large fixed terminals and mobile terminals will be available to support Worldwide Military Command and Control System (WWMCCS) requirements and some tactical Service requirements. Currently three operational DSCS II satellites are in orbit, located over the Atlantic, Western Pacific, and Indian Oceans. Coverage over the Eastern Pacific is being provided temporarily by the NATO IIIB satellite. Two satellites were launched in December 1978. They will be placed in operation following a period of test and evaluation.

	FY 1978 Actual Funding	FY 1979 Planned Funding	FY 1980 Prop'd Funding	FY 1981 Prop'd for Authori- zation
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DSCS II Satellites 1/

The demand for DSCS capacity, area coverage, and reliability has established the need for six satellites (four active and two in-orbit spares). To maintain this system until follow-on DSCS satellites are available, six replacement satellites will be needed. Four are currently under procurement, and the fifth and sixth will be procured in FY 1980.

Procurement:				
Quantity	-	-	2	-
\$ Millions	28.6	12.7	49.4	2.4

DSCS III Satellites 1/

The DSCS III program is being developed to provide greater satellite life and a major increase in jamming protection and communications capacity over the

Development:				
\$ Millions	58.9	33.4	24.8	10.0
Procurement:				
Quantity	-	-	-	4
\$ Millions	37.6	1.2	29.0	140.1

1/ Includes launch vehicle support funding.

DSCS III Satellites 1/ (Continued)

DSCS II satellites. Two prototype DSCS IIIs are being procured with FY 1978 and 1979 R&D funds and the first DSCS III satellite is now scheduled for launch in November 1979. The first four DSCS III production satellites will be procured in FY 1981 followed by the first launch in FY 1983.

1/ Includes launch vehicle support funding.

2. Defense Communications System (DCS) Secure Voice Improvement Program

The Congress has directed changes in the system configuration and technology associated with the concept for DCS global secure voice capability. Actions are underway to restructure the program to respond to the Congressional interest. Program planning to achieve improvements for critical users has high priority.

3. Automatic Digital Network (AUTODIN)

The Automatic Digital Network (AUTODIN) is the principal network for transmission of data and messages within DoD. The current AUTODIN I system, in operation since the mid-1960's, will continue to be the primary message switching system supporting the DoD until the mid-1980's. A replacement will be needed thereafter.

4. Automated Message Handling System

During the past decade, the Department of Defense has made significant strides in improving message communications vital to the command and control as well as intelligence processes. This progress has been due in part to the increased substitution of automation for manual message handling tasks in our communications centers, yielding faster speed of service and manpower savings. Automation centers are needed to assist action officers in dealing with the floods of traffic that must be reviewed and acted on during crisis periods.

We have taken several initiatives to improve the efficiency of automated message handling, including:

- Standardization of fixed-base communications centers.
- Standardization of tactical message handling systems (TRI-TAC Program).

In addition, we are studying the use of existing hardware for other WWMCCS requirements.

5. Consolidation/Automation of DoD Telecommunications Centers

Consolidation of telecommunications centers within each service has resulted in an approximately 30 percent reduction of DoD telecommunications facilities. We estimate that these actions have resulted in cost savings exceeding \$200 million over the past decade and personnel reductions in excess of 2,500 billets.

By pursuing further consolidations and utilizing automated systems, additional dollar and manpower savings are possible. The majority of the measures should be completed by the end of 1982.

As we pursue these consolidations we are mindful that overconsolidation could increase the vulnerability of our communications by channelling them through very few nodes.

6. Digital European Backbone (DEB)

The present Defense Communications System (DCS) which uses analog techniques, is old, costly to maintain and has difficulty in providing link security.

	<u>FY 1978</u> Actual Funding	<u>FY 1979</u> Planned Funding	<u>FY 1980</u> Prop'd Funding	<u>FY 1981</u> Prop'd for Authori- zation
<u>DEB</u>				
The Digital European Backbone (DEB) program will upgrade the majority of the existing European Defense Communications System (DCS) transmission network to all digital operations. The DEB program will establish a major digital transmission system	9.4	13.9	8.0	-
Procurement: \$ Millions				

DEB (Continued)

interconnecting U.S. activities in the United Kingdom, Belgium, Germany and Italy. All information flowing through this system will be encrypted, thereby denying critical U.S. information to hostile forces.

7. Reserve Forces Modernization (RFM)

The upgrading and modernization of reserve forces communications-electronics capabilities will continue in fiscal year 1980. However, with the majority of existing older equipment currently in the reserves, there will continue to be problems of interoperability, maintenance, supportability, reliability and capacity when and if integration with active forces is required. The Services have recognized these deficiencies and are identifying funds for procurement and installation of more modern equipment for the reserves. The equipments include satellite and secure voice terminals for Navy reserve ships, tactical radios for Army reserve forces, and improved high-frequency radios and maintenance capabilities for Air National Guard units.

8. Communications Security (COMSEC)

The DoD Communications Security (COMSEC) program includes all resources devoted to the protection of U.S. Government telecommunications. Our goal is to make secure all U.S. Government communications systems which carry traffic of significant intelligence value. This must be done in the face of two major trends in communications. First, the sheer volume of the communications requiring protection grows steadily in more and more widely dispersed locations. Second, the media required to transmit this expanding information are inherently more susceptible to intercept.

COMSEC programs are aimed at increasing the reliability and life expectancy of COMSEC hardware and integrating appropriate COMSEC measures into early development stages of new and advanced communications systems. Procurement funding includes purchase of a significant amount of equipment to secure communications links which transmit information of intelligence value.

9. Computer Security

The DoD makes intensive use of computers to process highly sensitive classified information. These computers are operated in secure facilities with stringent protection against unauthorized

access and hostile penetrations. However, because internal protection mechanisms within available computers are lacking, these systems, with very few exceptions, are operated with all users cleared to the same security clearance level, even if some users only require access to information of a lower classification. Similarly, remote facilities connected to such a system must be secured to that high level, even where the remote facilities process only material of a lower classification. With increases in the requirement to share information on a timely basis among widely distributed commands, the requirement to clear all users and securing all remote facilities to the same security level becomes increasingly restrictive and costly. These effects are magnified when computer systems of different security levels are interconnected. Accordingly, there is a strong need to control information flow within data processing systems to restrict sensitive information to those who are authorized access, while at the same time allowing others to use the systems at lower security levels.

The DoD has designed and is implementing two ADP systems with mechanisms to allow the simultaneous processing of multiple levels of classified information by users having different levels of personnel security clearance. Detailed design information is being made available to the computer industry to encourage them to build ADP systems with similar mechanisms. We are preparing procedures for the evaluation of industry-developed products for use in DoD multilevel secure applications. We expect the effort to result in the widespread availability of secure systems for use in both classified and unclassified DoD ADP systems, elsewhere in government and the private sector.

D. Navigation and Position-Fixing

The Department of Defense will provide over \$300 million in FY 1980 for the development, procurement, operation, and support of navigation devices and systems.

We are developing plans for the orderly transition of positioning and navigation (POS/NAV) systems and equipment to the NAVSTAR Global Positioning System (GPS) when it becomes operational in the mid-1980's. Although NAVSTAR GPS plays a key role in the final mix of navigation and positioning systems, we are also mindful of the potential impact that pending introduction of other new systems such as JTIDS (Joint Tactical Information Distribution System), PLSS (Position Location Strike System), DABS (Discrete Address Beacon System), and the MLS (Microwave Landing System) during the next 10 to 15 years will have on total Defense expenditures in this functional area. We intend to effect a substantial reduction in the number of systems while significantly increasing our ability to meet emerging military requirements. Further, we are working to improve the coordination process between the Department of Defense and other Federal agencies responsible for providing navigation services,

with the ultimate goal of providing a consolidated plan for development, acquisition, and operation of military and civil radionavigation systems. We are also working closely with our NATO allies to further our efforts toward standardization and interoperability in this area.

	<u>FY 1978 Actual Funding</u>	<u>FY 1979 Planned Funding</u>	<u>FY 1980 Prop'd Funding</u>	<u>FY 1981 Prop'd for Authori- zation</u>
<u>NAVSTAR GPS</u>				
Development of this system dominates R&D funding in the position-fixing and navigation (POS/NAV) area. This funding assumes that a full-scale development decision will be made early in 1979. The system is expected to be fully operational by the mid-1980s, although the phase-in for military use will continue through the mid-1990s.				
Development: \$ Millions	73.6	117.5	209.2	179.5

E. NATO-Related Programs

1. Intelligence Support to NATO

The United States is placing emphasis on the improvement of NATO's intelligence capability. These improvements range from enhanced combat level information to strengthening the NATO headquarters warning and reaction capability. Plans for these improvements are currently under development.

2. Identification Systems (IFF)

Positive and reliable identification of friends, foes, and neutrals (IFF) is a problem common to all of our weapon systems, especially those which can engage targets beyond visual range. The United States is continuing to participate in the formulation of a NATO-wide development of a future identification system that will overcome the shortcomings of the present MARK XII IFF system, which is an early 1960s design. The program, part of the NATO Long-Term Defense Program, includes allied use of the MARK XII system on an interim basis. NATO operational commanders have placed greater emphasis on the IFF function

in light of the possibility of self-inflicted losses as demonstrated by the 1973 Middle-East War. The Federal Republic of Germany has conducted a demonstration of an experimental tank-to-tank and air-to-tank identification system based on the use of a laser. This FRG development will proceed in close cooperation with the U.S. Army, allowing the U.S. and NATO to field a fully interoperable forward combat zone IFF system by the 1990's. Total R&D funding proposed for IFF in FY 1980 for all the Services is \$17 million.

3. C³I Interoperability and Mutual Efforts

a. Tactical Area Communications

Over the past several years, NATO nations have agreed to specifications for a device that will allow a limited degree of interoperability among tactical communications systems. This is a stop-gap approach. More must be done prior to 1995, when nations are expected to field completely interoperable equipment. A major effort is being made to expedite automatic interoperability of U.S. tactical communications systems with those of NATO and NATO nations by expanding and automating the existing device based on NATO Standardization Agreement (STANAG) 5040.

b. Combat Net Radio

In its report to the NATO Ministers in December 1976, the Ad Hoc Committee on Equipment Interoperability recommended measures to insure interoperability of all new radio equipment. The Ministers agreed that all new combat net radio equipment introduced after 1985 should be designed to common specifications or at least to common standards. Accordingly, the U.S. Army will continue its program to develop SINCGARS-V (See Chapter 3) which will replace Army and Marine Corps tactical radios, provide anti-jamming capabilities, and be interoperable with NATO combat net radios.

c. Communications Satellite (SATCOM) Sharing

The sharing of U.S., British and NATO SATCOM assets has proved extremely beneficial. The United States and United Kingdom have made use of NATO IIIA in the Atlantic area and NATO IIIB in the East Pacific. The United States has also used the UK SKYNET satellite to provide communications for special users. To continue the shared SATCOM systems, it is imperative that the next generation of United States and NATO SATCOM systems be interoperable. Not only will this provide for contingency operations, but it should also be most economic for both the United States and NATO. The DoD objective is completely interoperable United States and NATO satellites and ground terminals.

d. Mutual U.S./NATO Support

Communications facilities must be provided for the U.S. Brigades 75/76 that are being stationed in Northern Germany. As part of the rationalization program, the Army and Air Force will make use of existing allied communications, e.g., the UK STARRNET. To avoid building duplicate U.S. systems, we are investigating the continued use of the UK STARRNET and use of the NATO Integrated Communications System.

e. Consolidation of U.S. and NATO Communications Facilities

Consolidation of the Supreme Allied Commander, Atlantic (SACLANT) and U.S. communications centers in the Norfolk area has been completed. Planning and programming for automatic interconnection of the U.S. AUTODIN and NATO TARE record traffic systems, and of the U.S. AUTOVON and NATO IVSN switched voice systems will be completed in 1979. U.S. procurement of multiplex equipment for use with the NATO CIP-67 system could provide links for U.S. transmission requirements in the NATO system. These and similar projects will provide added reliability and survivability for U.S. and NATO communications. We continue to press for the adoption of a NATO policy that will permit the automatic interconnection of national and NATO communications systems.

CHAPTER 10

RESEARCH, DEVELOPMENT AND ACQUISITION

I. SUMMARY OF DEFENSE RESEARCH, DEVELOPMENT, AND ACQUISITION

The FY 1980 Department of Defense Budget requests \$49.0 billion for research, development and acquisition (RD&A) activities to support our military posture. Included are \$13.6 billion for research, development, test and evaluation (RDT&E) and \$35.4 billion for the procurement of weapon systems and other military equipment and supplies. The size of this request reflects our continuing concern over the growing quantitative disparity between deployed U.S. and Soviet weapons. It also reflects concern over significant advances in the quality of Soviet technology and fielded weapons.

The formulation of the RD&A program was governed by three major objectives:

- A. Better justification of programs on the basis of mission needs to reduce waste and duplication.
- B. Strengthened technology base.
- C. Greater cooperation with our allies.

In keeping with the principle of presenting and evaluating our efforts on the basis of the missions that they support, RD&A programs for our strategic, theater nuclear, land, sea, and air forces are primarily addressed in chapters on those forces. This chapter summarizes the basic objectives of RD&A for strategic and tactical application, and provides highlights of RD&A programs which contribute to Defense-wide capabilities (except C³I which is addressed in the preceding chapter).

Tables 10-1 and 10-2 reflect the resources allocated for RDT&E and procurement of weapon systems and other equipment, divided by major mission category.

II. STRATEGIC AND TACTICAL RD&A PRIORITIES

Funding for strategic programs is devoted to improving offensive, defensive, and C³I capabilities. Our strategic offense programs are aimed at reducing the vulnerability of our ICBM force, increasing the second-strike capability of our SLBM force against hard targets, and developing an effective cruise missile force. Strategic defense programs are aimed at maintaining the technology in defensive systems to reduce the possibility of technological surprise; providing defensive options to protect strategic forces, satellite systems, and command and control

TABLE 10-1

RDT&E Funding (\$ millions)

	<u>FY 1979</u>	<u>FY 1980</u>
Strategic Warfare <u>1/</u>	2,383	2,408
Tactical Warfare <u>2/</u>	5,310	5,251
Defense-Wide C ³ I	672	910
Other Defense-Wide Mission		
Support of Management	1,869	2,087
Science & Technology Program	<u>2,540</u>	<u>2,950</u>
Total	12,774	13,606

TABLE 10-2

Procurement Funding (\$ millions)

	<u>FY 1979</u>	<u>FY 1980</u>
Strategic Forces	2,995	4,914
General Purpose Forces	22,140	23,624
Intelligence and Communications	3,016	3,381
Airlift and Sealift	389	402
Guard and Reserve Forces	1,448	1,275
Central Supply and Maintenance	927	1,013
Training, Medical, and Other Personnel Activities	452	503
Administration and Associated Activities	48	63
Support of Other Nations	<u>85</u>	<u>250</u>
Total	31,500	35,425

1/ Includes Strategic C³I funding

2/ Includes Tactical C³I funding

systems; and providing a surveillance and warning network to detect and characterize hostile actions by aircraft, missiles and spacecraft. Strategic control programs are aimed at increasing survivability in a trans-attack and post-attack environment, while providing adaptive measures to cope with future threats.

The main objective of our tactical programs is to maintain the military balance in Central Europe in both conventional and theater nuclear warfare. Accordingly, we are concentrating our efforts to improve the survivability and effectiveness of theater nuclear forces in the areas of C³, operational intelligence and target information, and modernized armaments with improved security and safety features. Our land warfare programs are primarily designed to support a strong NATO with particular emphasis on rationalization, standardization, and interoperability. The principal focus is on precision munitions/fire-power, target acquisition, armored vehicles and attack helicopters, air defense, landmine warfare and logistics. In air warfare, the emphasis is on better defense of high value assets (including naval forces) from enemy air strikes, defeat of enemy fighters, battlefield interdiction (including second echelon forces), close air support, and suppression of enemy defenses. Naval warfare programs will improve our ability to control the seas as needed to protect shipping, support allies and overseas forces, and permit effective use of maritime striking forces. The program places particular emphasis on improving our defense against air and submarine threats to our naval forces. Our C³I programs are aimed at greater survivability and interoperability of systems (particularly in the NATO environment) and an improved capability to counter opposing C³ capabilities.

III. THE SCIENCE AND TECHNOLOGY PROGRAM

A. Policies

Our continuing emphasis on the Scientific and Technology (S&T) Program is -- in the long run -- the core of the defense RDT&E program. The increasing quantities of systems fielded by the Soviets, as well as observed improvements in their quality, demand that we not just maintain our technology pace but that we accelerate it -- both through better exploration of innovative technology and through improved management of our scientific and technological resources. These measures are vital if we are to maintain the crucial technology advantages that give us superiority where we need it in selected military capabilities. As the diversity of the world's weapons arsenal expands, there is a corresponding need to expand the technology options available to us. Such diversity in technology options will allow greater selectivity and lower costs in the more expensive acquisition portion of the total Research, Development and Acquisition process.

In order to ensure the availability of better and more clearly chosen technological military options and to prevent technological surprise, I am requesting sufficient funds to provide for about 10 percent real growth in the S&T Program in FY 1980.

I would like to emphasize that the development and maintenance of a strong S&T Program depends not only upon actions within the Defense Department but also on the combined efforts of the federal, industrial, and university communities. Important goals of our national S&T program include an effective manufacturing technology program to increase productivity in the production process, a creative industrial independent research and development program, and a high level of innovation within all of these communities. In achieving this latter goal, my staff is providing strong support to the interagency Domestic Policy Review of Industrial Innovation to assess the impact of government programs and policies on industrial innovation in this country and to recommend approaches that could enhance the national capacity for innovation which will have a direct impact on our military capabilities.

The maintenance of our technological lead also depends upon creative and improved management of export controls. Where critical technologies would provide a military advantage to political adversaries that would be detrimental to U.S. interests, I intend to ensure the needed controls are applied. Simultaneously, I will support the relaxation of many existing product controls which impose undue restrictions on our industrial sector in its conduct of international trade. During the past year, substantial progress has been made in developing the U.S. position for negotiating the review of the Coordinating Committee (COCOM) control list with our allies. The export control process involves the careful balancing of national security risks and potential benefits. The former involves possible loss of a technical lead, the latter the needs of U.S. industry to compete successfully in the world marketplace. International trade provides an opportunity for industry to acquire additional resources which can further be allocated to industrial R&D programs for the improvement of our national technological position. National security involves all of these factors.

In furthering our objective of more closely integrating the efforts of the NATO alliance in order to provide for a stronger and more effective defense, we are working with our allies to increase mutually advantageous cooperative research and development projects. It is our view that the total S&T program within the countries involved can be strengthened by increasing real growth in the military S&T programs and by improving the exchange of technical information between countries. We are now participating in international cooperative programs on a regular basis at both the policy and working levels to enhance our position in the S&T area.

B. The Basic Program

The Defense S&T Program covers a spectrum of science and engineering endeavors. This program is designed to induce scientific and engineering breakthroughs and to encourage technological innovation. Its outputs provide not only for increased capabilities -- both qualitatively and quantitatively -- in weapons, mobility, command and control, and guidance, but also in technology infrastructure programs such as those in materials, semi-conductors and electronics that are the basic foundation for technological advances in all areas of military interest. These projects lead to new systems, equipment, concepts and procedures for our strategic, tactical and support forces that in the final analysis execute the defense mission. Illustrative of the types of projects in the Defense S&T Program are:

1. Research

We have identified several areas critical to DoD which require additional scientific resources. FY 1980 funds will be applied to research in new materials, better characterization of existing materials, combat environments, microelectronics and survivability.

2. Very High Speed Integrated (VHSI) Circuits

The VHSI program is designed to expedite innovation in an area essential to DoD's mission and one in which DoD cannot depend on the consumer market for needed advances. This initiative is a six-year program to develop a new generation of integrated circuits (ICs). The goal is to achieve major advances in IC technology including an order of magnitude reduction in size, weight, power consumption and failure rates and a hundred-fold increase in processing capacity. ICs with these capabilities will allow important and significant advancements in cruise missiles, satellites, avionics, radar, undersea surveillance, electronic warfare SIGINT and C³ systems.

3. Precision Guided Munitions Technology

The current DoD emphasis on precision guided munitions will be increased this year as the S&T community capitalizes on advances made in micro-electronics and signal processing. The Under Secretary of Defense for Research and Engineering (USDR&E) is coordinating ongoing activities and developing objectives to expedite development and acquisition of this sophisticated new technology.

4. Directed Energy Technology

The principal efforts in this area involve the High Energy Laser and to a lesser extent the Particle Beam Technology Programs. In FY 1980, we will concentrate our efforts on identifying the

scientific and engineering uncertainties associated with this technology, the means for their resolution, and on determining the feasibility and utility of directed energy weapons.

5. Chemical Warfare Defense

The U.S. is continuing international and bilateral negotiations with the goal of achieving an effective, verifiable agreement banning chemical warfare. However, present deficiencies in our force posture and the threat to U.S. and allied forces in this area dictate that we give greater attention to: technology activity in detectors, warning, decontamination, medical treatment, protective equipment and training devices.

6. Metal-Matrix Composites (MMCs)

These new materials are conventional metals such as aluminum or titanium which are selectively reinforced with high strength fibers of carbon, graphite, silicon carbide or other materials. Because of the potential of these new materials, this program will receive continued emphasis in FY 1980.

7. Personnel and Training

As personnel costs continue to be the largest single item in the defense budget, I plan to continue emphasis on this aspect of the S&T Program. It is important that the Department develop procedures, techniques and policies that promote efficient recruitment, training and matching of people with the combat environment. In particular, we plan to continue to emphasize the development of simulators and training devices as a means of not only reducing costs, but also increasing individual and crew operational proficiency.

8. Manufacturing Technology

The Manufacturing Technology Program (MTP) is designed to assure the economical production of weapons systems. While specific projects focus on individual production problems, the MTP addresses improved factory floor space productivity across the entire spectrum of commodities purchased by DoD. Illustrative examples include programs in composite materials fabrication, advanced inspection methods, and ammunition production.

9. Low Vulnerability Munitions

A joint study of the Departments of Defense and Energy, currently in progress, will evaluate the technical possibilities for developing, and applying to military weapons, new explosives and propellants which are less susceptible to accidental detonation than

materials currently in use. The study will be completed this year. Its recommendations will be used to initiate a five-year S&T Program.

C. Defense Advanced Research Projects Agency (DARPA)

1. Objectives

DARPA's role is two-fold: (1) to explore the "leading edge" of technology to prevent technological surprise and (2) to exploit new developments by demonstrating technology pay-off and presenting system options to the Services.

The DARPA program, balanced in its support of technology exploration and demonstration, consists of ten major efforts.

2. Technology Opportunities Programs

a. Space Defense

b. Space Surveillance: Sensor technologies for target detection and tracking from space.

c. 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.

d. Anti-Submarine Warfare: Technologies to detect and track submarines.

e. Land Combat: Target acquisition and weapon delivery technologies providing options to offset the numerically superior Soviet armored vehicle assault capability.

f. Air Vehicles and Weapons: Innovative concepts such as the X-Wing Aircraft, Self-Initiated Anti-Aircraft Missile (SIAM), and the Forward Swept-Wing Aircraft which will offer dramatic improvements.

g. Command, Control, and Communications: Technologies for survivable computer communications, secure message and information systems, improved crisis management and command systems, and evaluation of these emerging technologies in a quasi-operational testbed.

h. Unconventional Technologies: Development of (1) the charged particle beam concept; and (2) the Assault Breaker program which is an integrated anti-armor surveillance and engagement concept for NATO.

i. Nuclear Test Verification Technology: Development of methods and data analysis techniques for remotely determining characteristics of nuclear tests and for verifying other nations' compliance with agreements limiting nuclear testing.

j. Technology Initiatives and Seed Efforts: This category includes programs such as innovative computer sciences for new communications technology, quantitative non-destructive material evaluation techniques aimed at lowering the cost of new systems; laser and optics development; and further development of integrated circuits technology.

IV. DEFENSE-WIDE MISSION SUPPORT AND MANAGEMENT

This major mission category includes all efforts which provide support to multiple defense missions and cannot be allocated directly to any other major mission area. Included are such activities as space launch and orbital support, global military environmental support, studies and analyses, test and evaluation, and general management support. Two of the major efforts are described in the following sections.

A. Supporting Space Developments

Our primary objectives are to develop a flexible, effective space launch capability that can support space system deployment at reduced cost with enhanced survivability, and to provide an advanced technology base for future space system opportunities.

A standardized, improved TITAN III (34)D will provide improved reliability for current payloads. However, we are depending heavily on the space shuttle as the basic launch capability of the future. Space shuttle development progress and orbiter availability uncertainties present problems to DoD in planning to use the shuttle to achieve more flexible, effective space operations and to phase-out expendable launch vehicles. Additional effort is needed to evaluate the use of the manned shuttle as a laboratory in space for DoD experiments, in defining the future military role of man in space, and in improving DoD shuttle operations capabilities. To take advantage of this system, we are developing the Inertial Upper Stage for use with the shuttle at Kennedy Space Center, providing shuttle launch and landing facilities at Vandenberg Air Force Base, preparing to transition space systems to shuttle launch, assuring that classified payloads will be protected on the shuttle, and procuring a minimum number of backup boosters as a hedge against uncertainties in shuttle development and availability.

There are two related efforts. One is planning for an improved satellite control capability, including shuttle flight control to enhance space system survivability. A second is the use of the Space Test Program to enhance the use of the manned shuttle as a laboratory in space for conducting DoD experiments. The latter effort will enable more rapid technology advancements since we could test concepts under actual space conditions and then return the experimental packages for modification and retest. In our present situation, we must launch expensive and nonrecoverable R&D payloads prior to fielding an operational space system.

B. Test and Evaluation

We will continue to maintain a strong, independent evaluation of weapon system testing throughout the acquisition process. The test and evaluation program continues to emphasize the reduction of vulnerability and improvement of reliability in our weapon systems. Through earlier operational testing in the system acquisition process we seek to lessen risks in decision-making and assure the highest level of operational suitability of fielded weapons, while not making unwarranted additions to their cost and time to deployment. We will proceed with efforts to improve and modernize the capabilities of the DoD test ranges and facilities to keep pace with the sophisticated requirements of new weapon systems. These efforts include the development and procurement of sufficient targets for use in weapon system tests. By careful attention to costs and products, the goal of maximizing the "return on investment" of the test and evaluation process will continue to be pursued.

I. OVERVIEW OF DEFENSE LOGISTICS

A. Objectives of Logistics Planning and Programming

The major objectives of our logistics planning and programming are:

- to ensure that the operational readiness and combat sustainability of our combat forces are consistent with the overall strategic concept for national defense planning;
- to ensure that DoD's military population is adequately fed, clothed, and housed;
- to provide for the essential upkeep of DoD's extensive capital plant and facilities and avoid costly deterioration of these assets;
- to provide the necessary levels of "miscellaneous," but essential, management and support.

None of these objectives is an end in itself; our ultimate objective is to provide a combat capability adequate to ensure that our national interests can be protected. In other words, the ultimate objective of logistics planning and programming is to ensure the combat capability of our defense forces.

Combat capability depends on a myriad of diverse but inter-related components. For the purposes of this discussion, the components of combat capability are classified and discussed under the following four general areas: (1) peacetime materiel readiness; (2) combat sustainability; (3) logistics management and support; and (4) facilities support.

1. Peacetime Materiel Readiness

Peacetime materiel readiness depends on the adequacy of the DoD logistics and manpower programs. These programs ensure that weapon systems and equipments attain, and where necessary improve, their inherent design capabilities. Support of peacetime materiel readiness encompasses maintenance (including modification of equipment), supply, transportation, and distribution. The maintenance, modification, and alteration of weapons systems and components include depot maintenance

activities, procurement of spares and kits for modification and alteration, and maintenance at intermediate and unit levels. Supply operations include the resources to operate the world's largest supply system of "wholesale" supply warehouses and "retail" supply outlets at bases and units. The transportation activities include funds spent on materiel distribution, separate from transportation charges paid as part of materiel procurement costs and the movement of personnel and their household goods.

2. Combat Sustainability

Another vital factor in our combat capability is the ability to sustain combat once initiated. Procurement of war reserve stocks (WRS) is a particularly crucial element of DoD combat sustainability. We must maintain substantial quantities of war reserve munitions, spare parts and other combat consumables in our peacetime inventories to support our combat forces during the early wartime surge in activity levels. A second component of combat sustainability is industrial preparedness. This includes the modernization and expansion of our munitions production base as well as other capital investment in logistics facilities and equipment, manufacturing technology programs, and the layaway and maintenance of mothballed facilities.

3. Logistics Management and Support

This grouping includes additional "miscellaneous", but essential, activities such as the operations of logistics management headquarters, procurement of logistics support equipment, and other support activities. These items, though further removed from direct combat support than the previously enumerated activities, are essential to the proper functioning of the entire Defense Department.

4. Facilities Support

This important grouping of functions includes capital plant investment as well as maintenance of existing facilities. It demands the commitment of substantial resources. Military facilities constitute the bulk of the capital plant investment of the Department of Defense. An aspect of facilities support that is very important to the well being of our military personnel is family housing. The sizeable inventory of government-owned family housing will continue to be operated and maintained. Emphasis will be on reducing the backlog of deferred maintenance to a reasonable level by end FY 1982. Real property maintenance activities (RPMA) encompass utilities expense, maintenance, repair, minor construction, and support services for installations. Also included in this grouping are the energy conservation investment program, environmental and OSHA compliance at military installations, and NATO infrastructure facilities funds.

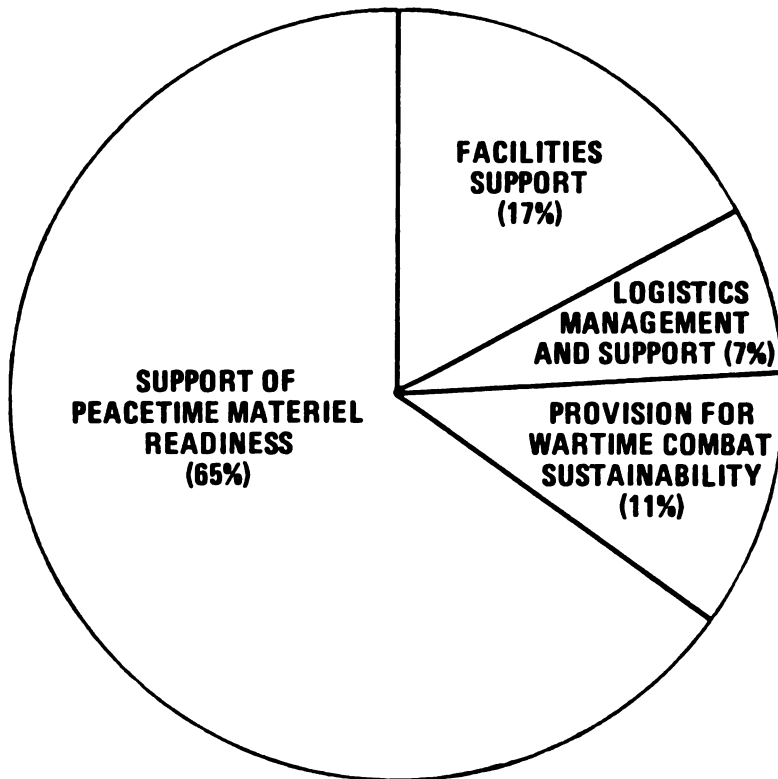
B. Distribution of Logistics Funding

About \$48 billion of the FY 1980 budget request of \$135.5 billion is to pay for a set of functions, activities, services, and certain procurements that we call "logistics." Logistics funds are spread across almost every budget appropriation and include resources: (1) to support peacetime materiel readiness; (2) to provide wartime combat sustainability; (3) for logistics management and support; and (4) for facilities support.

Chart 11-1 displays the estimated distribution of logistics funding among these categories.

Chart 11-1

DISTRIBUTION OF FY 1980 LOGISTICS AND FACILITIES SUPPORT FUNDING



II. TRENDS IN PEACETIME MATERIEL READINESS

A. General

The materiel readiness of our weapons systems and equipment refers to their ability, with a specified warning time, to deliver the performance for which they have been designed or modified. Explicitly, and perhaps artificially, excluded from this area are issues of manpower and training.

All the logistics functions (supply, maintenance, transportation, etc.) contribute to peacetime materiel readiness. The most cost/effective achievement of readiness requires a proper balance among these areas. Readiness operates on a "weakest link" principle, and if even the "least important" link breaks, the effect on readiness can be catastrophic. It is important that we not rob any one readiness-related function to fix another.

Last year, as for several years before, serious shortfalls in materiel readiness were highlighted. It normally takes some years to make significant improvements in most of these areas.

B. Ship Materiel Readiness

During the past year the materiel condition of ships has improved as reflected in reports from the Board of Inspection and Survey (INSURV); this improving trend is corroborated by a decline in the number of serious materiel casualty reports (CASREPS). Resources have been increased to provide improved depot level support. The depot level maintenance funds requested will reduce the number of ships overdue for overhaul from 24 at the end of FY 1979 to 12 at the end of FY 1980. In addition, increased FY 1980 shipboard maintenance funding will continue the improvement in fleet-wide materiel readiness. The Congress denied our FY 1979 request for funds to upgrade the shore intermediate maintenance activities at Pearl Harbor, Hawaii and Mayport, Florida. We continue to believe that this upgrade program is necessary to provide adequate support for new ships and those vessels on extended operating cycles between overhauls. The FY 1980 budget submission requests funds to upgrade the Mayport facility.

A major factor affecting the materiel condition of fleet units is the shortage of adequately trained maintenance personnel. A comprehensive training plan to improve the ability of our personnel to maintain the newer complex ships and equipments has been initiated.

C. Aircraft Materiel Readiness

Among the contributors to degraded aircraft materiel readiness have been backlogs of spare components requiring repair and unreliable, hard-to-support equipment designs. The level of component repair backlogs, while not a direct measure of materiel readiness, can have a strong influence on aircraft mission-capable rates.

Past Defense Reports have emphasized unreliable and hard-to-support equipment design as a major, and often the principal, contributor to less-than-desirable weapon system performance in the field. An important means of improving the peacetime materiel readiness of our existing forces is by means of reliability and maintainability (R&M) modifications to weapon systems and equipment. Both the Air Force and Navy are vigorously pursuing aircraft R&M modification programs by expanding last year's program for correcting unsatisfactory designs for older aircraft such as the A-7, F-4, and B-52s as well as our newer F-14, F-15, and S-3 systems.

D. Land Forces Equipment Programs

The shortage of modern equipment reported in the FY 1979 Report remains our most significant concern in the area of Army readiness. While the procurement of major weapons systems has significantly increased over the past two years, lead-times associated with these procurement actions will delay their impact on unit readiness. During FY 1980-1984, we will field a large number of additional modern weapons to increase our capabilities in the early stages of any conflict.

Our past and current emphasis on early warfighting capability has enabled us to achieve essential reconstitution of POMCUS stocks in Europe and we plan to increase POMCUS as discussed in Chapters 3 and 6. This increase may require some CONUS units (active and reserve) to train and operate at reduced equipment levels whose effect on training readiness is being assessed. Until our equipment inventories increase significantly as a result of recent procurement, the enhanced early combat capability is at the expense of our later deploying units that will continue to suffer from equipment shortages.

E. Congressional Readiness Reporting Requirements

In accordance with provisions of Section 812 of Public Law 95-79 (the FY 1978 Defense Appropriation Authorization Act), the DoD submitted to Congress in February 1978 a Materiel Readiness Report setting forth the readiness requirements of our forces and the past and

projected readiness status relative to those requirements. Section 812 also requires that future DoD budget submissions include data projecting the effect of the appropriations requested on materiel readiness. In addition to the information required by P. L. 95-79, Senate Armed Services Committee (SASC) Report No. 95-826 requests that DoD submit detailed materiel readiness data on seven specific aircraft types. We are responding to both the continuing provisions of P. L. 95-79 and the new SASC requirements in a separate "Materiel Readiness Package" to be submitted in mid-February to support the FY 1980 budget request.

F. Transportation Support

1. Traffic Management, Land Transportation and Ocean Terminal Operations

The Military Traffic Management Command, our single manager in this area, has initiated several programs to improve service and reduce transportation costs. Action to upgrade and modify rail equipment in the Defense Freight Railway Interchange Fleet will enhance our capability to respond to specialized and heavy-lift requirements of the services in both peacetime and wartime. A program to lease unused facilities at the military ocean terminals will generate revenue and eliminate standby maintenance cost. The funds requested for upgrading ammunition ocean terminals will provide for an improved capability to move both containerized and breakbulk ammunition in wartime.

2. Airlift Operations

The Military Airlift Command (MAC), as the single manager for airlift, maintains its wartime response capability through peacetime training exercises and by providing required airlift service to DoD components. Since the users pay for this airlift, the direct Air Force Operations and Maintenance cost for airlift training is reduced considerably. The essential peacetime flying-hour program for exercising the airlift system is supported by the services through appropriations for second destination transportation, personnel travel, Joint Airborne/Air Transportability Training and JCS exercises. Reductions in the level of these funds result in reduced flying hours for training and ultimately in reduced system readiness.

The Army's Air Line of Communication (ALOC) program, now in effect in Europe and being tested in Korea, calls for airlift of pallet-sized loads of selected repair parts to overseas units regardless of priority. An additional benefit is air return shipping of unit reparable. ALOC has resulted in a documented improvement of support for Army users with a concomitant reduction in stockage levels.

3. Sealift Operations

FY 1980 projections for peacetime sealift operations reflect continued growth in scope and size. Increases over FY 1978 levels are projected due to greater dry cargo and petroleum lift requirements. The Military Sealift Command (MSC) role in transporting the crude oil for the Strategic Petroleum Reserve Program will increase dramatically over the FY 1978 level of 6,988,000 long tons to a projected 19,370,000 long tons in 1980. The FY 1980 MSC budget also reflects an increase of 128 ashore positions required to support projected ship accessions to the MSC Naval Fleet Auxiliary Force. Cost and manpower savings realized from prior transfers of regular Navy noncombatant ships to MSC for operation by civilian mariners have demonstrated the advantages of this program.

G. Materiel Distribution System

1. Depot Operations

Our ongoing analyses of the entire DoD materiel distribution system in the 50 states are expected to continue through FY 1979. The Navy is examining consolidation of the distribution missions of Industrial Naval Air Stations with Naval Supply Centers where they are in the same area. The project will eliminate duplicate wholesale supply operations in the Oakland, Norfolk, and San Diego areas through the use of a process-controlled, automated materiel-handling system. Marine Corps goals are to provide covered storage space for all serviceable equipment, maintaining a ready-issue balanced inventory of mission-essential principal and secondary items. The Army's use of three area-oriented depots to provide worldwide support has reduced storage and transportation costs, allowed implementation of the direct support system, and improved overall supply support of Army units worldwide.

2. Storage, Packaging, and Handling

Replacement of critical mechanized materiel-handling system components is required to retain overall system reliability. Phased installation of the Defense Integrated Storage and Retrieval System is underway with pilot installation planned in FY 1979-80. The FY 1980 budget request for Navy storage, packing and handling functions is required to counteract the effects of inadequate funding in the past. FY 1980 funding will continue the Navy program to decrease the amount of over-age equipment from 52 percent to 20 percent by FY 1986. As part of this program, funding support of the process-controlled, materiel-handling system (Navy Integrated Storage, Tracking and Retrieval System) will be required. The FY 1980 Marine Corps funding in this area supports a long-range program designed to replace worn-out equipment and improve volume utilization.

3. Automated Systems

We have initiated work on a DLA Standard Warehousing and Shipping Automated System that could be used throughout the Department of Defense. DLA's existing Mechanization of Warehousing and Shipment Program (MOWASP) system is being optimized as the basic module for the DoD standard system to replace the multiple systems now in use. Enhancement of automatic data processing operations at DLA with the improved MOWASP is scheduled to begin in FY 1980.

III. TRENDS IN COMBAT SUSTAINABILITY

A. General

Combat sustainability -- the "staying power" of our combat forces -- depends on the availability of weapons, equipment, spare parts, secondary items, munitions, and other supplies to replace those consumed and/or attritted during combat operations.

B. War Reserve Stocks

War reserve requirements are based on war plans and deployment schedules that establish the numbers and types of U.S. units in-theater and an assumed intensity of combat that drives attrition and consumption rates. Thus, war reserve requirements are dynamic, varying with changes in strategy, tactics, and force structure. As modern, more effective munitions and equipment enter the inventory, the associated war reserve requirements change. Over the past several years there have been major reassessments of Army war reserve requirements based on new analyses and the lessons of the 1973 Middle East war. For FY 1980, there will be small reductions in total U.S. Army war reserve requirements due to the withdrawal of the 2nd Infantry Division from Korea; at the same time, requirements for the ROK have been modified to reflect the withdrawal and implementation of a forward defense concept for Korea.

1. Weapons and Equipment

The Army needs additional modern weapons and equipment to satisfy all of its requirements. The buildup of war reserve stocks has a lower priority than the basic equipping of active Army units, affiliated Reserve Component units scheduled for early deployment to Europe, and the reconstitution of POMCUS. In fact, weapons and equipment have been redistributed from war reserve stocks to these higher priority requirements.

2. Munitions

There are currently large shortages in our war reserve stocks of the modern, more effective (and more costly) air and ground munitions (e.g., precision-guided and clustered air munitions, air-to-air missiles, and improved conventional ground munitions). In general, we have adequate stocks of older, conventional munitions. This leads to an apparent anomaly that we have almost all of our worldwide munitions requirement on a tonnage basis, but only 55 percent on a dollar basis. This is characteristic of a situation in which more effective modern systems are being introduced; the "requirement" leads the availability of the new systems. The Army's prepositioned war reserve munitions requirement for Europe has not been satisfied because of increases in the stockage objectives based on reevaluation of consumption rates, coupled with a storage capacity deficiency. We are taking steps to solve this problem.

3. Secondary Items

Secondary item war reserves are those combat-essential consumables needed to repair, maintain, and support defense weapon systems and forces. Examples range from an aircraft radar component to GI combat boots. Secondary item war reserves are a relatively small part of the dollar value of our total war reserve, which is dominated by munitions and major equipment costs. However, secondary item shortages can severely degrade our combat capability so that the shortfalls in this war reserve inventory are as important as those in major equipment and munitions. The FY 1980 budget request includes \$172 million to reduce the secondary item war reserve shortfall.

A serious threat to the long-term security of the United States and its allies is the growing deficiency of secure and assured energy resources. We will continue to take actions to assure adequate stocks are available as required for wartime usage.

C. The Industrial Base

The U.S. industrial base would be hard-pressed to respond with the volume of war materiel necessary to assure uninterrupted support in a NATO conventional conflict after the inventories of war reserve materiel have been exhausted. This results primarily from the time required to accelerate production from existing sources and to open new production lines. It is expected that the ongoing DoD Surge Analysis and the Sustainability Study will provide valuable insights into this most important issue.

IV. BALANCING READINESS AND SUSTAINABILITY

We live in a world of limited resources; there are limits on the federal budget, and within it, on the Defense budget. We always face choices; our main objective is to set our priorities to get the most defense capability out of the total resources that the United States allocates to national defense. Hence, rather than focusing on pure, but unfunded, "military requirements," each of which is valid when viewed in isolation, we must balance the competing resource demands within the Defense program.

Our immediate capability to engage in combat is being degraded by the peacetime materiel readiness problems described above. Thus, we have decided to place more emphasis on initial combat capability and relatively less emphasis on combat staying power than has been done in the past. We also have as an objective, the procurement of war reserve stocks for our Korean Allies to ensure them adequate combat support; these war reserve stocks for allies (WRSA) will be retained under U.S. title and control. This will help pave the way for withdrawal of our combat ground forces from Korea as well as provide a hedge against the possibility that we might need to support U.S. forces in NATO longer than expected.

Establishment of a Special Contingency Stockpile will allow us to respond to urgent requests for assistance, such as occurred in the Middle East War of 1973, without drawing upon our stocks for Europe and Korea.

The net effect of these changes in priorities has been to place our current emphasis less on long-term staying power and more on areas with a higher payoff in immediate combat capability.

V. TRENDS IN LOGISTICS MANAGEMENT AND SUPPORT

The trend in logistics management continues toward the centralization and standardization of the logistics functions with increasing emphasis placed on the use of the private sector. Several major DoD logistics automated data processing systems are scheduled for replacement during the five-year program period.

A. Centralization of Logistics Functions

1. Single Manager For Conventional Ammunition

The Army has been assigned responsibility as the single manager for conventional ammunition. In Phase I of this program, most CONUS wholesale inventories and all major DoD-owned ammunition production facilities were transferred to the Army.

2. Commissary Consolidation

A joint task group is now evaluating options for consolidating the management of commissaries. The two alternatives under consideration are: consolidation under DLA, and consolidation under an independent agency (similar to the Army, Air Force Exchange Service).

3. Integrated Item Management

To eliminate duplicate inventory management among the Services, in 1974 the Deputy Secretary of Defense tasked the Joint Logistics Commanders to plan to transfer cataloging and item management responsibility for all nonconsumable items to a single service manager. This program, which is scheduled for completion in December 1979, will permit more efficient use of manpower resources, should reduce the net amount of wholesale inventories required to support nonconsumable items, and should improve the use of long supply inventories. We are currently reviewing a plan to transfer the management of all consumable items from the services to DLA.

B. Standardization of Logistics Activities

1. War Reserve Computations

Today, each DoD Component computes war reserve requirements of secondary items based upon unique, service-developed computational criteria. A policy has been developed that will provide standard computational methodology and enhanced credibility in our secondary item war reserve requirements.

2. The National Supply System (NSS)

The NSS is intended to provide, on an evolutionary basis, an integrated system of broad policies and procedures as a framework within which each federal government department/agency will operate its own supply system.

3. Retail Inventory Management and Stockage Policy

It is of prime importance that we optimize secondary item inventory control and management procedures for all echelons of supply. Recently-developed DoD policy will provide, at the retail level, optimum stockage for each materiel category by incorporating a balance between supply performance and economy with consideration of military essentiality.

C. Increased Reliance on the Private Sector

The Commercial Item Support Program (CISP) was established in an effort to increase reliance on commercial distribution systems for

support of commercial items within DoD. The objective is to eliminate DoD wholesale level duplication of commercial distribution systems for the supply of commercial items when it is economically feasible and when there is no adverse impact on military readiness. DLA-managed items are being reviewed for possible CISP application. After additional experience is gained, the program will be expanded to the Military Departments.

VI. FACILITIES SUPPORT

A. Military Construction Program

1. Facilities Backlog

Despite the serious efforts of the past five years to reduce the estimated military construction backlog, it has continued to grow to the present \$32 billion level. We need to assess this estimate carefully to see how much of the backlog is real.

2. European Construction and NATO Infrastructure

The FY 1980 Military Construction program request is \$2,158 million of which \$275 million is for support of U.S. forces in Europe. Included is \$150 million under the NATO infrastructure program for facilities which are essential to the operations of NATO forces and are jointly funded by the NATO countries. This request reflects essential facilities support for our joint actions with our allies to strengthen our capability to defend Europe, and includes construction linked to the Long Term Defense Program initiatives endorsed by the NATO Heads of State at the Summit Meeting in May 1978. These projects must be in the FY 1980 request because they are phased to support urgent military requirements and cannot be deferred for future infrastructure funding consideration. After thorough study of the possibility of NATO funding for all U.S. operational construction needs, we have concluded that such a course is not to our long-range economic advantage. If we requested total NATO funding, our allies could claim cost sharing by us of similar facilities for their forces, and our ultimate cost would be substantially higher than if we were to finance our own construction. However, we are attempting to expand selectively the list of NATO-eligible facility categories which may be economically beneficial to include under future NATO funded programs.

B. Base Realignments

In the past several years major base realignment decisions have resulted in the elimination of approximately 6,200 military and civilian positions and an estimated reduction in costs of \$100 million. In April 1978, the military departments announced proposals to reduce,

realign, and close 85 military installations and activities. If implemented upon completion of the necessary studies, these proposals could reduce annual Defense costs by over \$337 million and eliminate 23,200 military and civilian positions. The study effort is progressing satisfactorily, although some delays have been encountered in collecting basic data, developing the scope of the study, and in determining the impact of the forthcoming 2nd Infantry Division stationing decision.

C. Real Property Maintenance Activities (RPMA)

Funding for RPMA is being programmed to offset deterioration of permanent Defense real property facilities. Steps have been taken to improve RPMA workforce productivity, offset the impact of staffing reductions through scheduled training in the use of Engineered Performance Standards (EPS), now being updated, and to increase the utilization of EPS overall.

D. Energy Conservation Investment Program (ECIP)

Executive Order 12003 requires a 20 percent reduction, relative to 1975 levels, in energy consumption in existing facilities by 1985. ECIP funding continues to be programmed to achieve a 12 percent reduction. (The other eight percent of required savings is anticipated from Operations and Maintenance-funded projects and improved operational efficiencies.) The ECIP investment is self-amortizing from energy and associated utilities operational savings with the payback on projects initiated during FY 1976-79 averaging less than six years. The criterion for project selection is to maximize energy savings per dollar invested.

E. Pollution Abatement

Department of Defense installations must comply with the provisions of environmental laws, particularly the Clean Air Act and Clean Water Act. Although much progress has been made to date, a large number of DoD installations are still in violation of standards. Funding has been increased for pollution abatement projects at noncomplying installations. Continued emphasis and funding are required to obtain full compliance.

F. Occupational Safety and Health

The occupational safety and health program has been strengthened markedly, and funding has been provided to accelerate elimination of the identified backlog of serious safety and occupational health hazards in compliance with the OSHA Act and Executive Order 11807.

VII. MOBILIZATION CAPABILITIES

In the fall of 1976 the Army, concerned about the adequacy of its plans to manage its portion of the complex tasks of rapid, conventional reinforcement of NATO, held a month long mobilization and deployment exercise. The lessons learned in the Army's effort were useful, but limited owing to the lack of other Service and agency participation. In order to provide a more realistic setting and to test the entire Defense Department's plans to muster resources quickly enough to meet requirements for a NATO contingency, exercise NIFTY NUGGET was conducted in October 1978. This exercise was designed to (1) determine the adequacy of plans, systems and procedures for full mobilization, (2) examine limitations in manpower and logistics capabilities through the period of initial deployments, (3) fully exercise the mobilization and deployment responsibilities (without actual call-up or movement of units) of the Military Departments, the Office of the Secretary of Defense, the transportation operating agencies (Military Airlift Command, Military Sealift Command and Military Traffic Management Command), the Organization of the Joint Chiefs of Staff and the participating Federal departments and agencies, and, (4) assess the effectiveness of deployment planning.

Because the exercise involved many commands, agencies and units, including reserve units and individual reservists, not all of the results are presently available. Although many aspects of the exercises went well, we recognized some severe shortcomings immediately and have embarked on a course to correct them. In each Military Department and in the Joint Staff, senior level groups have been formed to give emphasis to the resolution of problems identified in NIFTY NUGGET. To give consistent direction and to add momentum in this area, I have formed a Department of Defense Mobilization and Deployment Steering Group, chaired by my Under Secretary for Policy.

Although NIFTY NUGGET confirmed many suspected resource problem areas, we gained a better understanding that mobilization -- despite the length of warning time -- is a process involving a myriad of manpower and materiel actions rather than a single event on a particular "M-Day." We also recognized that although a period of political warning provides opportunities to mitigate capability shortfalls and to deescalate a crisis, steps in these directions would be hampered by long lead-times, inadequate planning, domestic constraints on and international consequences of crisis actions. More reflection and planning is required to improve what can be done, in terms of increasing preparedness during periods of tension and mobilization. Periodic exercises will help in this respect.

Beyond these general observations many particular shortcomings in planning, execution and resources were observed. Ammunition service-ability, amounts of prepositioned materiel, outloading materiel handling

equipment at airfields, crisis management organization and procedures, and non-combatant reception and relocation are but a few of the many issues now being addressed.

Because budget preparation and the conduct of the exercise overlapped, little time has been available for major issue analysis, budget estimation, and review. However, because a number of our shortcomings were already known, many of the programs in the fiscal year 1980 budget hold promise of improving our mobilization and deployment capability. NIFTY NUGGET helped resolve last minute priority adjustments for budget decisions concerning ammunition maintenance and renovation, materiel handling equipment procurement, and procurement of prepositioned equipment and ammunition. Moreover, the Fiscal Year 1979 Supplemental request was adjusted to accommodate some of the more pressing deficiencies identified in NIFTY NUGGET.

CHAPTER 12

PEOPLE

I. INTRODUCTION

The overriding Defense manpower objective is to increase the combat effectiveness of the Armed Forces. In that effort the most important factor, often taken for granted in discussions of sophisticated equipment, is attracting and retaining capable, motivated people -- the soldiers, sailors, airmen, and marines who comprise our forces and the civilians who maintain and support our forces.

The requirement for Defense manpower is driven by complex inter-relationships of peacetime workload and projected wartime demands. The procedures used by the Services and Defense agencies for determining manpower requirements and the relationship of those requirements to the security of the nation are summarized in the annual Defense Manpower Requirements Report.

II. DOD MANPOWER STRENGTH AND COSTS

A. Manpower Strengths

1. Strength Trends

As Table 12-1 shows, there has been considerable fluctuation in Defense manpower strengths over the past 15 years. This is largely explained by the Vietnam war. Prior to the Vietnam buildup, the Department of Defense employed about 3.9 million people, almost 2.7 million active-duty military and almost 1.2 million civil service employees. During the peak of the war, strength reached 4.9 million followed by a sharp reduction in the early 1970s to below pre-war levels.

Since FY 1974 active-duty military and civilian strengths have been reduced about one percent per year. The President's FY 1980 budget represents a 1 percent reduction in civilian fulltime employment and no change in military manning from the strengths authorized for FY 1979.

Reserve paid drill strength has also declined since FY 1974, primarily because of the inability of the Army Reserve Components to achieve peacetime manning objectives. Careful analysis indicates

Table 12-1

Defense Manpower Strengths and Costs ^{1/}

	<u>FY 1964</u>	<u>FY 1974</u>	<u>FY 1976</u>	<u>FY 1978</u>	<u>FY 1979</u>	<u>FY 1980</u>
<u>End Strengths (000)</u>						
Active Military	2,687	2,161	2,081	2,061	2,050	2,050
Civilians						
Direct Hire	1,035	1,014	960	936	917	907
Indirect Hire	<u>140</u>	<u>95</u>	<u>87</u>	<u>81</u>	<u>78</u>	<u>78</u>
Total	1,175	1,109	1,047	1,017	994	985
Reserve-paid Drill ^{2/}	953	925	823	788	807	785
Retired	435	1,012	1,132	1,243	1,280	1,320
<hr/>						
<u>Manpower Costs (Outlays</u> <u>\$ Billions) in current</u> <u>dollars</u>						
Manpower Outlays						
Military Personnel						
Appropriations	12.3	22.1	23.3	25.1	26.2	27.6
Defense Family Housing						
Appropriations ^{3/}	.5	.7	1.0	1.1	1.2	1.2
Military Retired Pay						
Appropriations ^{4/}	1.2	5.1	7.3	9.2	10.3	11.4
Reserve/Guard Personnel						
Appropriations	.7	1.6	1.8	2.0	2.1	2.2
Civilian Costs ^{5/}	7.5	14.1	16.4	18.9	19.8	20.8
Personnel Support						
Costs ^{6/}	<u>1.7</u>	<u>3.0</u>	<u>3.9</u>	<u>4.2</u>	<u>4.8</u>	<u>5.2</u>
Total Manpower Costs	23.9	46.7	53.8	60.5	64.4	68.4

NOTE: Detail may not add to totals, due to rounding.

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- 1/ Data exclude civil functions.
 - 2/ Includes about 65,000 national guard and reserve technicians through FY 1978 and 60,000 in FY 1980 who are also counted as civilian employees.
 - 3/ Excludes civilian pay portion of this appropriation which is included under civilian costs.
 - 4/ For those already retired. Future retirement costs for the current force are not currently reflected in the budget.
 - 5/ The cost of civilians is budgeted under the functional appropriations, e.g., operations and maintenance, family housing, RDT&E. Numbers include indirect hire civilians who are often excluded from manpower costs and strength data. Indirect hire costs are \$1.1 billion in FY 1980. Civil Defense pay is excluded in all years.
 - 6/ Preliminary data for FY 1979 and FY 1980. Excludes the direct costs of military and civilian personnel since these are accounted for separately. Includes costs of individual training, medical support, recruiting and examining, overseas dependent education, half of base operating support, and a miscellaneous category.

that this is the result of a retention as well as a recruiting problem. Accession levels have been rather high, but only a small fraction of the recruits complete their initial six-year contract and many are gone within the first year. Actions being taken to reverse this trend in strengths are discussed later in the chapter.

Table 12-1 summarizes the trend in strengths and costs for selected years. The Defense Manpower Requirements Report contains discussions of the factors which influence these trends, and gives a perspective for evaluating the implications of data presented here.

2. Current Manning Overview

On January 2, 1979 the United States Armed Services completed their sixth full year under the volunteer force concept. During that six-year period 2,850,000 young men and women voluntarily entered one or another of the active or reserve forces as either officer or enlisted personnel. More than half of these new volunteers have stayed on in either an active or reserve unit and comprise about two-thirds of the active military and one-third of selected reserve strength. These volunteers have made it possible to meet our active forces strengths to within one percent of FY 1978 planned end strength level and for the reserve forces to within five percent of their planned end strength level. The FY 1978 end strengths are compared with Service plans in Table 12-2.

3. Review of the All Volunteer Force

The Department of Defense has conducted and published a review of the all volunteer force entitled America's Volunteers. A Report on the All-Volunteer Armed Forces (AVF). ~~The results of the AVF Study~~ are summarized in the discussions throughout this Chapter. The report itself provides considerably more detail for those desiring an in-depth review of the all volunteer force.

B. Cost Trends

DoD continues to seek means of accomplishing national security objectives while limiting the cost of manpower consistent with the maintenance of an effective force. Several management actions and legislative proposals intended to further this goal are discussed later in this Chapter. In peacetime, it is DoD policy to use the least costly mix of active military, reserve component military, civilian, and contractor manpower which will achieve wartime deployment and operational

Table 12-2

FY 1978 Active Force and Selected Reserve Military End Strength
End Strengths in 000s

<u>Active Force</u>	<u>Actual FY 1978</u>	<u>FY 1978 Column of the FY 1979 Pres. Budget</u>	<u>Percent</u>
Army	771.1	774.2	99.6
Navy	530.1	532.3	99.6
Marine Corps	190.7	191.5	99.6
Air Force	<u>569.5</u>	<u>570.8</u>	<u>99.8</u>
DoD	2,061.4	2,068.8	99.6
<u>Selected Reserve</u>			
<u>Paid Drill Strength</u>			
		*	
Army National Guard	341.0	356.7	95.6
Army Reserve	185.8	189.2	98.2
Naval Reserve	82.8	87.0	95.2
Marine Corps Reserve	32.7	32.1	101.9
Air National Guard	91.7	92.3	99.3
Air Force Reserve	<u>53.9</u>	<u>52.0</u>	<u>103.7</u>
<u>Total</u>	<u>787.9</u>	<u>809.3</u>	<u>97.4</u>
Total, Active Force and Selected Reserve	2,849.3	2,878.1	99.0

 * The Congressional FY 1978 Selected Reserve Manyear Average Strength Authorization reflects the limits of expected recruiting/retention potential rather than manning goals. These authorizations for the Army Guard and Reserve are approximately 75 percent of the war-required strength.

objectives. Within the constraints under which we must work, we continually strive to achieve this desired mix. However, DoD must pay compensation competitive with the private sector to attract and retain the talent needed.

III. MANNING THE PEACETIME FORCE

A. Quality

During the past year, the Services placed increased emphasis on the recruitment of high school diploma graduates. The Army, Navy, and, to a lesser degree, the Marine Corps accepted recruiting shortfalls during parts of the year in order to maintain a high proportion of high school diploma graduates. These efforts, along with lower accession requirements, and the large number of 18-year olds available relative to past and future years resulted in the highest overall proportion of high school diploma graduates among new accessions since the beginning of the volunteer force. Table 12-3 shows the trend in high school diploma graduates for selected years.

Table 12-3

High School Diploma Graduates as a
Proportion of Non-Prior Service Accessions

<u>FY 1974</u>	<u>FY 1975</u>	<u>FY 1976</u>	<u>FY 1977</u>	<u>FY 1978</u>
61	65	69	69	77

The proportion of the enlisted active duty force with a high school education or equivalent remained at about the same level as last year -- 88 percent -- and represents a significant increase from the proportion in 1964 (73 percent), the last year before the Vietnam war, and from the proportion in December of 1972 when the draft ended (81 percent).

Service emphasis on the recruitment of high school diploma graduates is based on our experience that graduates are more likely successfully to adapt to the demands and discipline of the military

environment. This does not necessarily increase the likelihood that they will learn military skills more rapidly than non-graduates. This latter trait is measured through administration of the DoD enlistment qualification mental examination known as the Armed Services Vocational Aptitude Battery (ASVAB). Through various combinations of questions in the ASVAB, the Services determine the applicant's general trainability and potential for training in the various military occupational fields.

In order to provide historical comparability in measures of mental quality, the general trainability measure from the ASVAB is converted to and expressed in terms comparable to the formerly used Armed Forces Qualification Test (AFQT) - formerly the sole enlistment eligibility criterion. It should be emphasized that while the applicant's AFQT is used to determine basic enlistment eligibility, it is the aptitude area score which determines an applicant's eligibility for a specific occupational assignment.

DoD prefers enlistment of individuals in the higher mental categories because training time and costs are lower and because they are more likely to have aptitudes for more skill areas. Since establishment of the AVF, the proportions of well above average and well below average enlistees have declined with a corresponding increase in the proportion of those in the average mental ability category. The trend is shown in Table 12-4 below:

Table 12-4

Mental Category of Non-Prior Service Enlisted Accessions

Mental Category	Population Percentile	DoD			Army			Navy			Marine Corps			Air Force		
		1964	1972	1978	1964	1972	1978	1964	1972	1978	1964	1972	1978	1964	1972	1978
I + II	65-100	38	35	34	34	34	26	42	37	38	38	25	29	51	43	45
III	31-64	47	48	61	45	48	63	48	43	60	53	55	68	46	49	55
IV	10-30	15	17	5	21	18	11	11	20	3	9	20	4	4	8	0

Percentage totals may not add due to rounding.

In summary, then, the active forces are obtaining enlistees in the numbers and with the mental abilities to meet force requirements. The most significant change in the mental quality of recruits under the AVF has

been the sharp decline in mental category IV personnel as discussed in the AVF Report. These individuals have historically accounted for a disproportionate share of disciplinary and training problems. The slight decrease in category I and II personnel has had less impact. For the Army, however, the decline in mental groups I and II is of some concern. The Air Force has actually had an increase in mental groups I and II, since 1972. While mental group I and II individuals, who represent the top 35 percent of the nation's youth, are needed in some specialties, most specialties can be filled with average people and many specialties can be filled very effectively with less gifted persons. Moreover, the current selection and classification procedures assure that all recruits meet service prerequisites for occupational training.

B. Retention

To attain an all volunteer force (AVF) we had to recruit sufficient numbers of qualified non-prior service personnel to meet authorized strength. To sustain the AVF, we must concentrate on retaining those high quality soldiers, sailors, airmen, and marines whom we recruited in the early years of the AVF. We must ensure that reenlistments occur at levels which provide a force of experienced career military personnel -- people critical to the operation and maintenance of an increasingly complex military force.

Our service members who joined the AVF in the early years are reenlisting at a satisfactory rate. In fact, the number of people entering the career force has been increasing yearly. This increase in first-term retention reduces turnover and allows recruitment of fewer non-prior service people. We are reexamining our career force requirements to insure that we have an experience mix which yields the most cost/effective force.

On the other hand, we have some evidence that the reenlistment of service members with 7-10 years of service is declining. We are focusing our efforts and resources on these individuals in order to ascertain the causes for the decline and determine what actions can be taken to reverse the trend.

The downward trend in second term reenlistments is particularly serious in the Navy. Actions being taken to improve overall retention in the Navy include:

- Payment of reenlistment bonuses in lump sum rather than installments.
- Increased funding of bonuses for reenlistments occurring between 6 and 10 years of service.

- Expansion of reenlistment options guaranteeing assignment.
- Initiation of a new Career Sea Pay program which provides additional compensation for long periods of arduous sea duty.
- Limitation of sea/shore rotation periods for retirement-eligible Chief Petty Officers.
- Improvements to leadership education and training programs for sea-going commanders and career enlisted personnel.

The Army, Navy and Air Force continue to experience recruiting and retention problems with physicians. DoD anticipates that this problem will be exacerbated by the relatively more lucrative National Health Service Corps Scholarship Program operated by the Department of Health, Education, and Welfare (HEW) vis-a-vis the Armed Forces Health Professions Scholarship Program, and by the erosion, because of inflation, of the value of Variable Incentive Pay. In addition to legislative proposals now under development, we are currently searching out cost-effective non-legislative actions which DoD could take to ameliorate this problem.

The Air Force and Navy are experiencing a decrease in retention of pilots. These Services are currently reviewing the monetary incentives structure, assignment policies, career patterns, and flight training rates in search of cost-effective options to overcome this problem.

The Air Force is also experiencing stiff competition from the civil sector for engineers which is adversely affecting both recruiting and retention. The Air Force has placed increased recruiting and advertising resources in its budget explicitly to combat this problem.

C. Accession Prospects for the 1980's

During the coming decade and a half, the number of males annually reaching 18 will decline. The decline in total males will be reflected in a corresponding proportionate decline in the number of new male high school diploma graduates. If the major competitors for new graduates attempt to maintain their current numerical totals, the result will be a significant increase in competition from post-secondary educational institutions and from civilian employers. We have therefore adopted a recruiting strategy aimed at maintenance of our current share of the male high school graduate market. Maintenance of a constant share of a declining market means that the Services must expect to recruit fewer male high school graduates in the coming decade. If efforts to reduce male accession requirements in line with the decline in the potential supply are effective, there will be no loss of quality.

Two important steps in this regard are currently underway. They are increasing the number of women in the military and decreasing attrition. Both will be discussed in more detail later. We are also examining additional sources of supply that could result from changes in selection criteria and enlistment standards. Increased shares of markets not fully exploited now (such as college) may also be possible.

We are hopeful that our efforts will permit the Services to maintain their current high school graduate proportions, but as I pointed out earlier, our current high school graduate proportion is higher than in recent years. We believe we can if necessary perform our mission with a somewhat lower proportion of high school diploma graduates but it may result in somewhat increased attrition and training costs since we will be accessing individuals with a greater propensity to leave the service. In summary, we believe that we can cope with the declining youth market of the 1980's in terms of meeting the personnel requirements of the current active force size. The decline in the market will, however, make the task more difficult. The increased difficulty will be reflected in somewhat higher costs. These costs will ultimately be determined by the extent of our success in reducing accession requirements, the extent of increased nonmilitary competition for new high school diploma graduates, and the commitment of the American people to support a voluntary military. That commitment can be favorably influenced by the willingness of top level national leadership to speak out in favor of military service as an important element of our national well being.

IV. WARTIME RESPONSIVENESS

Of major concern to defense management is the capability of the Reserve Components and the Selective Service System to provide the necessary additional forces and manpower required during wartime. Current and projected threat estimates indicate that both a rapid buildup and substantial replacement assets would be needed to fight a war in Europe. The NIFTY NUGGET exercise has reinforced the perceived need for actions to improve response capability.

A. Selected Reserve

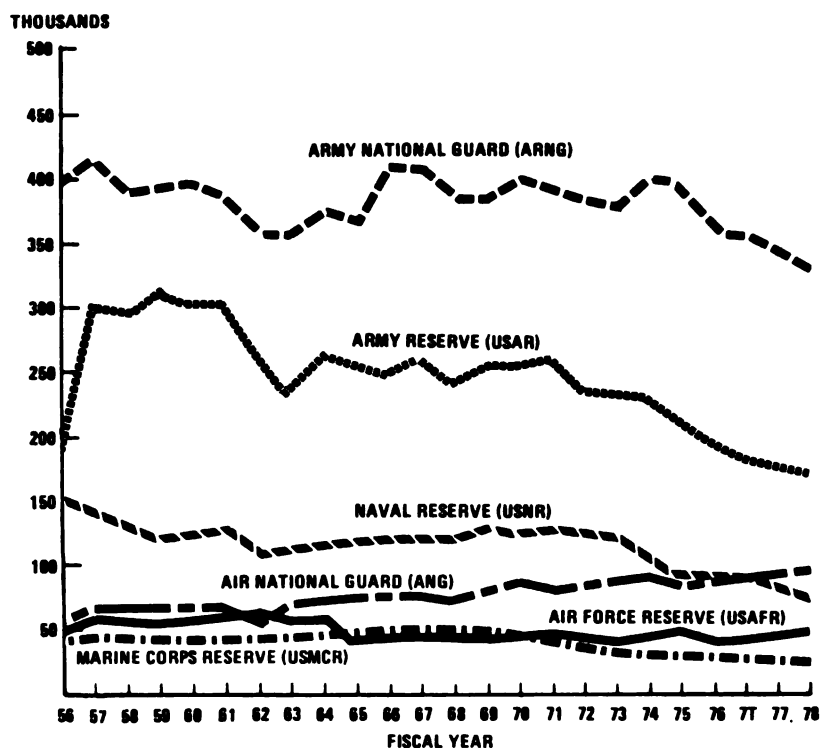
Under the Total Force policy we rely upon the Selected Reserve to provide immediate combat and combat support in theater, as well as follow-on additional combat and tactical support, and immediate augmentation of active strategic airlift and naval forces units.

1. Manning Issues and Manpower Management Initiatives

Maintaining personnel levels in the reserve force continues to be the most difficult problem we are experiencing in ensuring reserve readiness. Since the end of the Draft we have been faced with the problem of replacing unusually large losses in the Selected Reserves from among the Draft-induced enlistees of earlier years. This period is nearly ended. We expect the cumulative impact of this and a series of initiatives which began in FY 1978 and FY 1979, and continue in the FY 1980 President's Budget, to reverse this downward trend and show a significant gain. However, we will still be short of our peacetime manning goals. Chart 12-1 shows long-term trends to date in Selected Reserve Strength.

Chart 12-1

STRENGTH OF SELECTED RESERVE (TOTAL PAID DRILL)



We are doing well now in recruiting for the Marine Corps, Navy, and Air Reserve Components. Our shortages are largely concentrated in the Army Guard and Reserve.

Recently implemented programs which will assist us in raising the strength of the Selected Reserves to our peacetime manning objectives are:

a. Bonuses

Enlistment and reenlistment bonuses and educational assistance incentives for all DoD Reserve Components, but aimed primarily at the Army, are being initiated in FY 1979 and will continue.

b. Army Reserve Recruiting Assistance

In FY 1978 the Army implemented a pilot program for the U.S. Army Recruiting Command (USAREC) to provide management assistance for recruiting in the Army Reserve. USAREC will assume the entire Army Reserve recruiting mission in May of 1979.

c. Army Split Training Enlistment Option

Under this option enlistees enter Basic Training and Advanced Individual Training in consecutive summers or other seasonal cycles. This program is aimed at students who would not otherwise be able to squeeze the full training time into one summer. The program began in late FY 1978 and continues in FY 1980.

d. Physician Recruitment/Retention

In addition to increased emphasis on recruiting and retaining physicians, the Services are exploring impediments to recruiting and appropriate management actions.

e. Militia Careers Program

A test began in school year 1978-1979 to recruit individuals with certain technical skills from vocational-technical high schools into Army Reserve components. Early results look promising.

f. Drill Pay for Non-High School Graduates Awaiting Basic Training

This program has been authorized so we can provide inactive duty training (i.e., reserve drill periods) which will assist the young soldier in completing basic training. This program is aimed at curbing the high losses previously experienced for those awaiting training, thus both improving manning and increasing the effective yield of our recruiting expenditures.

2. Other Responsiveness Improving Initiatives

We plan to continue emphasis on those Reserve Component units that would be required early during a contingency. Later deploying units will have additional time to achieve an acceptable state of readiness before deployment. Initiatives in this area include:

- Making available more subcaliber devices and training simulators, self-paced instruction kits, qualification tests, and "how-to-do-it" manuals.
- Establishing a Gaining Command Program which preassigns units to the gaining wartime corps or communications zone (COMMZ) headquarters.

B. Pretrained Individual Manpower

1. Manning Issues

One of our most serious concerns today is insuring that sufficient numbers of individuals with prior military training are available to meet filler and replacement requirements during the early days of a war. This demand can at present be met only from the individual manpower pool consisting of members of the Individual Ready Reserve (IRR), Standby Reserve, and retired military personnel.

The supply of manpower in the IRR and Standby Reserve is declining and has reached the point, especially in the Army, where there is a significant shortage of pretrained individuals needed to meet the most demanding wartime scenarios. Factors contributing to this decline include an increase in the minimum active duty enlistment from two to three years, extensive use of the delayed entry program, increasing prior service accessions into the Selected Reserve, and higher active duty and Selected Reserve attrition. Another major contributing factor was the reduction in the size of the active force which reduced the number of individuals leaving active duty and entering the IRR.

The number of retired personnel is increasing, and many young retirees could be effectively used during the early stages of a war.

2. Manning Improvement Initiatives

Several initiatives have been recently instituted and will continue into FY 1980. These are:

- Reenlistment programs for the IRR;
- Screening of individuals leaving active duty and the Selected Reserve prior to the end of their obligated service to insure that only those with no mobilization potential are discharged;
- Elimination of the provision for transfer from the the IRR to the Standby Reserve during the last, or sixth, year of obligated service;
- Improved personnel management of the IRR and Standby Reserve including better tracking and location procedures, more frequent contact and faster mobilization notification procedures; and
- A program of identifying and programming retired personnel for specified mobilization positions.

Experimental programs under way or being considered include:

- A direct enlistment program into the IRR.
- Enlist/reenlistment incentives in selected units of the Selected Reserve.
- A two year active duty enlistment which will result in individuals spending a longer time in the IRR;
- Study to determine the effects of lengthening the current six year military service obligation.
- Cross-training of personnel in support occupations to combat occupations to permit replacement flexibility.
- The recall of non-obligated veterans upon full mobilization, as a last resort.

3. Other Mobilization Management Issues

The Department's planning objectives seek to satisfy all wartime manning requirements and to maintain a training posture that will enable all units to meet readiness standards at the time of scheduled deployments. Initiatives which promise significant improvement include:

- Authorizing peacetime manning at wartime strength levels in early-deploying Reserve Component units.
- Increasing stocks of modern equipment issued to early-deploying Reserve Component units, including POMCUS for selected units.
- Allocating active force training establishment resources for schooling on a priority basis for personnel assigned to early-deploying Reserve Component units.
- Additional full-time manning to improve the training and deployment readiness of Army Reserve Component units.
- Identifying individuals not qualified for the position that they occupy, by occupation and skill level, and insuring that they get the necessary training.
- Programming increased Reserve Component unit participation in training and mobilization exercises with affiliated active force units.
- Increasing Reserve Component undergraduate flight training rates to balance total force mobilization requirements and assets.
- Increasing attention to Reserve Component attrition problems.

C. Selective Service System

The mission and role of the Selective Service System have changed significantly in recent years. Inductions ceased in January 1973. Peacetime registration stopped in April 1975 and classification of registrants was terminated in January 1976. As a result of these changes, the Selective Service System was reduced from 2,500 employees and a budget of \$100 million to its current level of about 100 employees and a budget slightly greater than \$7 million.

The system now exists solely to plan and prepare for delivery of inductees should the President declare a national mobilization.

The function of a standby Selective Service capability is to provide wartime manpower to sustain the force in combat and, if necessary, to expand the force structure. Inductees cannot be used immediately after mobilization. Each individual must complete necessary training before overseas deployment, and current law prescribes a minimum of 12 weeks training prior to deployment.

Last year we reviewed our wartime manpower needs and concluded that the planned delivery rate for inductees should be improved. As a result, we have asked the Director of Selective Service to be prepared to respond to our improved wartime delivery rate. The old and new required rates are:

Table 12-5

	<u>Selective Service System Required Delivery Rates</u>		
	<u>1st Inductee</u>	<u>100,000 Inductees</u>	<u>6-Month Total</u>
Old	M+110	M+150	390,000
Improved Response	M+30	M+60	650,000

We continue to be concerned about the mobilization capabilities of the Selective Service System. The recently completed DoD Sustainability Study reconfirms the need for the enhanced delivery capability.

Recent studies conducted by the President's Reorganization Project (Office of Management and Budget) and the Congressional Budget Office concluded that the Selective Service System is currently not capable of meeting our mobilization requirements, a situation that we believe needs to be improved. The Selective Service System must be provided sufficient resources to meet DoD's mobilization requirements. We are working closely with the Selective Service System and the Office of Management and Budget to insure that the Selective Service System achieves the necessary wartime capability.

V. PERSONNEL MANAGEMENT

A. Legislative Implementation

Civil Service Reform Implementation

The Civil Service Reform Act is a major means of increasing the efficiency and effectiveness of Defense operations. We intend to make full use of the new tools provided to managers by the Act. This will require extensive orientation and training that will ultimately involve every DoD supervisor and civilian employee.

Implementation has begun in several areas. For example, guidance as to the effect of Title VII on existing collective bargaining agreements has already been issued to the Components. Guidance and criteria for the performance appraisal systems required by the Act will shortly be issued. Design of a pilot program for merit pay implementation is underway, and will be operative by October, 1979.

B. Legislative Proposals

1. Military Compensation Reform

I will submit legislation to reform the military compensation system to the Congress this spring. The specific proposals will be designed to correct inefficiencies and inequities in pay, benefit and retirement programs that were highlighted in the April 1978 Report of the President's Commission on Military Compensation. The provisions would not apply to past or present members of the forces, except insofar as provision is made for present members to elect the new system if they choose.

A key feature of the proposed retirement reform, drawn from the Commission's plan, would provide new career incentives by giving active duty personnel the option to draw special cash payments after ten years of service. These payments would be charged against their future pension rights. Members in the new system completing 20 years of service would still be entitled to immediate pensions, with benefits at that time lower than those of the present system, rising to present levels at the age 60. Personnel separating with 10 to 20 years of service would be entitled to deferred pensions beginning at age 60. Annuities would be calculated on high-2-years, average basic pay, rather than final basic pay and would be offset by benefits available under the social security system.

I expect our proposed plan to reduce total retirement system costs, after a transition period which will protect the interests of members of the current active duty force. The eventual savings are

projected to be in excess of 30 percent of current system costs. I expect that retention and turnover under this plan would be at least as good as under the current system. More personnel would stay past the first-term of service to complete 10 to 15 years; fewer would complete 20 years of service.

In addition to retirement reform, I am making two other proposals for compensation change. These are:

- Authority to recommend annual pay raises that vary by pay grade and longevity step. This increased flexibility will allow the Department to deal effectively and economically with manning surpluses and storages.
- A variable basic allowance for quarters which reflects regional differences in housing costs within CONUS.

Finally, the Department supports the Commission's recommendations that would retain the system of pay and allowances, that would use civilian job comparability standards as a guide but not as a rule for adjusting and setting military pay, and that would review the special and incentive pays to insure that they serve as a management tool to solve manning problems.

2. Financing Military Retirement Costs on an Accrual Basis

I intend again to propose legislation to change the way the budget accounts for military retired pay. The budget now reflects only the annuity costs of military personnel who have already retired. Under the proposed legislation, the budget would reflect the retirement benefits being earned by military personnel on active or reserve duty. This change is designed primarily to improve personnel management by focusing attention on those retirement costs that can be controlled. Because the proposal involves complex changes in many parts of the budget that are contingent upon enactment of the legislation, the changes have not been reflected in the budget schedules.

3. Civilian Pay Reform

I support legislation proposed by the Office of Personnel Management (OPM) to reform Federal Wage System pay-setting for blue collar employees. The Department supports the principle of comparability, which holds that federal employees should receive pay comparable to pay in the private sector. Current law, however, results in federal pay above comparability levels, and thus:

- Creates inequities between federal blue collar workers and other employees in the federal and private sectors;
- Adds to inflationary pressures by forcing private employers to "bid up" the pay of their employees; and
- Reduces readiness because high personnel costs restrict the number of employees in the areas of logistics and maintenance.

The proposed legislation would eliminate the principal source of overpayment of federal blue collar personnel by allowing the average federal wage to be matched to the average local prevailing rate. Under the current law, average federal pay is nearly 8 percent above the average of comparable private-sector personnel. In addition, the legislation would repeal the Monroney Amendment, which leads to the overpayment of federal workers because their pay in some cases is not based on local prevailing rates, but upon prevailing rates in other, higher-wage areas. The legislation would also eliminate the uniform night-shift differential, which is higher than most locally established differentials. And, it would permit wage surveys to include state and local employees, whose current exclusion distorts federal paylines because of inadequate surveying of many federal occupations.

OPM is devising a comprehensive pay reform bill which will apply to both blue collar and white collar employees. Its precise nature is still under development.

4. Defense Officer Personnel Management Act

In 1974, the Department proposed the most comprehensive legislation since 1947 to update the laws that govern the management of the active officer corps within the armed forces. The Defense Officer Personnel Management Act (DOPMA) will eliminate many inconsistencies in existing law which create inequities in the way officers are managed by the different Services and in the way male and female officers are managed in all the Services. It will also enable us to conduct the long-range planning which is so essential to providing our officers with careers that are competitive with civilian opportunities and which help to attract and retain the high quality officer force needed for our national security.

The DOPMA legislation has been repeatedly submitted to the Congress. It was passed by the House of Representatives in both the 94th and 95th Congresses, but action has not been completed by the

Senate. Consequently, "eleventh-hour" legislation was required during FY 1978 to continue temporary grade relief for the Air Force and to avoid some undesired personnel problems for the Navy brought about through the effects of the National Emergencies Act (P.L. 94-412).

Management of the officer corps is becoming increasingly more uncertain as a result of having to work under legislation passed long ago under very different conditions, conflicting pressures and unwarranted differences in treatment among the Services. For several years the officer corps has been anticipating changes in the management system which are of vital importance to them and their careers. The uncertainties must be removed as soon as possible so that the efficiency, readiness, and morale of the officer corps will not be impaired. The Department again submits DOPMA and urges the Congress to give high priority consideration to this important legislation.

C. Management Actions

1. Quality of Life

Two station allowances are authorized by Section 405 of Title 37, United States Code. These are the Cost-of-Living Allowance (COLA) and Housing Allowance (HA). The COLA compensates eligible personnel for the average difference between day-to-day living costs overseas and average living costs in the contiguous 48 states. The HA compensates personnel who are not provided Government quarters for the difference between the average cost of private leased housing at a duty station and the average basic allowance for quarters (BAQ) received by members at that station.

Military personnel in a few areas of the world, notably Germany and Japan, have had to cope with rapid and severe dollar devaluations relative to local currencies which literally would have impoverished our service personnel if no action had been taken. Consequently, DoD recently designed and implemented a multi-tiered station allowance index which permits COLA and HA adjustments without lengthy administrative delays.

Personnel who have no dependents overseas, typically the young enlisted members who live in the barracks, have in the past not been eligible for station allowances and thus have suffered losses in buying power in direct relation to currency value fluctuations. Consequently, we have examined the need for and feasibility of a cost-of-living allowance (COLA) for these personnel. We refer to it as a "Single" COLA. We feel that it is indeed warranted and desirable. It will cost approximately \$72 million annually at present currency exchange rates. We have included this program in our supplemental request for FY 1979 and in our budget request for FY 1980.

I believe that the combination of indexed station allowance procedures, "Single" COLA, and junior enlisted overseas travel entitlements which were authorized by Congress will improve the morale deterioration which we have been experiencing overseas. These actions are necessary to enhance the quality of military life so important to continued success of the All Volunteer Force. I strongly urge the full support of the Congress for these measures.

The Career Compensation Act of 1949 established a ceiling on rates of reimbursement for mileage while traveling on temporary duty or permanent change of station. This ceiling clearly does not reflect today's cost levels. Adherence to this limit requires our personnel to cover some official travel costs from their own resources. I am proposing that the ceiling be eliminated so that reimbursement rates may be adjusted in consonance with pertinent cost levels and our resource availability. I also urge your support for this enabling measure.

2. Actions to Reduce the Number of High Graded Employees

a. General/Flag Officer Management

The fiscal year 1978 DoD Appropriation Authorization Act directed a reduction in general and flag officer strength to 1,073 by the end of fiscal year 1980. The act also required the Department to submit a report with the fiscal year 1979 Military Authorization request on the number of flag and general officers required, along with any justification for deferring the directed reduction. The required report was submitted to the Congress in April 1978.

The report covers the Departmental review and validation of current flag and general officer requirements, and the lack of evidence to justify further reductions in the numbers of general and flag officers on active duty. To the contrary, the weight of available evidence indicates a requirement -- using judgmental standards of comparison with other governmental and private sector work forces -- for more, not fewer, general and flag officers.

Accordingly, the Department is requesting authorization to maintain the current general and flag officer strength of 1,119 in fiscal year 1980. The flag officer and high grade civilian reductions directed by Section 811 of the FY 1978 Authorization Act are inappropriate and the Section should be repealed. Reductions below the current level would degrade leadership, management effectiveness, U.S. influence in international security affairs, and career attractiveness. For these reasons the Department urges the Congress to approve the requested level of 1,119 general and flag officers for fiscal year 1980.

b. Civilian General Schedule Grade Control

Grade growth from improper classification or lack of careful position management ends up charging the taxpayer for more demanding work than is actually taking place. Hence, I am concerned about grade growth. The Department's average General Schedule grade has been relatively stable since 1970, having fluctuated between 7.7 and 7.8. However, the average is up since 1964 when it was 7.2. Much of this increase resulted from changing occupational content of the DoD work force resulting from changing technology. However, for some job series there has unquestionably been "creep" in grade classification. To avoid jeopardizing the Department's good performance, I want not to overreact and impair DoD operation nor to be unfair to our employees by arbitrarily constraining grades. The basic intent of the Civil Service classification procedures requires that employees be graded at the level they are performing, and most of DoD's very modest growth correctly reflects more technically demanding work.

In place of a fixed ceiling or other arbitrary control, DoD is using the OMB system of grade control by job series to search out and eliminate any overgrading. This system reviews the grade structure of all general schedule job series. When growth is found, it is compared to changes in responsibility of workers in the series. If the growth is unjustified, corrective action is taken. In this way, both the mission and the taxpayer are better served.

The FY 1978 Defense Appropriation Authorization Act directed a reduction in the number of GS-13 and above employees. I believe this is counter to our other attempts to establish grade levels that are fair to both the employee and the taxpayer. The Act incorrectly tied the number of GS-13 and above employees to the number of flag officers. These groups have quite different roles and missions and their numbers are driven by different requirements. However, DoD did program reductions in the number employed in grades GS-13 and above. I believe that further reductions, unless related to changes in missions and functions, are inappropriate. The OMB system is the correct approach to grade control.

3. First Term Attrition

In 1977, I directed that efforts be made to decrease first-term attrition (defined as the number of individuals who are lost to the military during their first three years of service prior to completing their initial enlistment). As shown in Table 12-6, the first-term attrition rate for enlisted men had grown markedly since FY 1971. In the Army, for example, the three-year attrition rate for people who enlisted in FY 1971 was 26 percent while the FY 1974 entry group had a rate of 38 percent.

Table 12-6

Attrition Percentage of Active Duty NPS Male Enlistees*

<u>Service</u>	<u>Actual</u>				<u>Estimated</u>			<u>Projected</u>	
	<u>FY 71</u>	<u>FY 72</u>	<u>FY 73</u>	<u>FY 74</u>	<u>FY 75</u>	<u>FY 76</u>	<u>FY 77</u>	<u>FY 78</u>	<u>FY 79</u>
Army	26	28	31	38	37	35	30	30	31
Navy	28	32	34	38	32	31	38	31	28
Marine									
Corps	31	24	32	37	40	37	34	31	30
Air Force	21	26	30	31	31	29	28	27	25
DoD	26	28	32	37	35	36	35	30	28

* Percent of those who enlisted for three or more years in fiscal year shown and leave the service before completing three years of service.

This action to reduce attrition was necessary because high attrition is costly and requires more recruits than would otherwise be necessary to sustain a given force size. The impact on trained 1/ man-years and accession levels of different attrition levels is illustrated by a comparison of Army FY 1971 and FY 1974 attrition behavior. The FY 1971 cohort attrition implied that about 1.92 trained man-years were obtained per accession over the first three years of service. This number dropped to 1.65 for FY 1974 accessions and attrition experience. Thus, 17 percent more NPS accessions were needed in FY 1974 over FY 1971 to obtain the same trained strength for the first three years of service.

Attrition is obviously a serious problem warranting close attention. The high attrition rates experienced in the past are evidence that the full potential of recruits is not being achieved. Nevertheless, the measures taken to improve performance in this troublesome area must not degrade our forces or reduce their fighting capability. In fact, it is undesirable to retain nonproductive or counterproductive personnel in order to reduce attrition. The Services are attempting to lower attrition by increasing the management attention devoted to this problem and by screening those who enter the force to exclude high risk personnel. The Office of the Secretary of Defense, together with the Military Departments, is monitoring the progress being made in obtaining the attrition goals.

 1/ In this discussion a person is considered trained after he completes six months of service.

4. Desertion

Enlisted desertion rates estimated for FY 1978 are compared with rates for selected past years in Table 12-7. The overall rates are continuing to decline. We anticipate that the current trend will continue.

Table 12-7

Desertions Per Thousand Enlisted Personnel

	<u>FY 1964</u>	<u>FY 1968</u>	<u>FY 1972</u>	<u>FY 1976</u>	<u>FY 1977</u>	<u>FY 1978</u> ^{1/}
Army	13	30	63	18	15	13
Navy	6	9	8	25	32	30
Marine Corps	18	31	65	69	47	39
Air Force	1	1	3	1	1	1
DoD	8	18	32	20	18	17

^{1/} Estimate for FY 1978 based on three quarters of data.

The figures for the Navy and Marine Corps remain troublingly high. The introduction of a policy effective 1 December 1977, requiring deserters to be returned to their parent command at their own expense, appears to have leveled the previous increases of the desertion rate which have occurred during the past few years. The Chief of Naval Operations has recently identified as one of his principal objectives a radical reduction in the incidence of unauthorized absence, of which the desertion rate is the most dramatic and serious indicator.

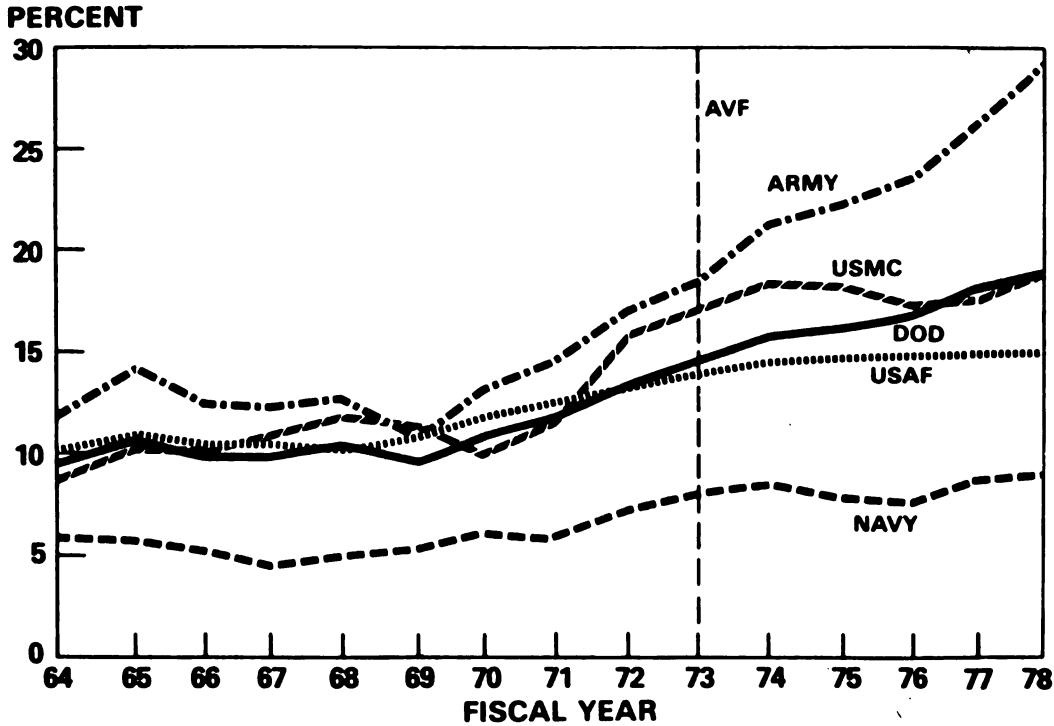
D. Equal Opportunity

1. Racial Representation

a. Blacks in the Enlisted Force

Chart 12-2 shows the percentage of blacks in the active duty enlisted force by Service. The increase since 1972 is a product of both the increasing accession rates for blacks and the higher than average reenlistment rates among black enlisted personnel. In FY 1977, 18 percent of the enlisted force was black as compared with ten percent in FY 1964. The Army has historically had the highest black content and the Navy the lowest. The pre-AVF trends have generally continued under the AVF.

BLACKS AS A PERCENTAGE OF ACTIVE DUTY ENLISTED END STRENGTHS



The proportion of enlisted blacks in the Selected Reserve has increased dramatically from one percent in FY 1969 to 18 percent in FY 1977. From FY 1971 to FY 1977, the Army Reserve increased its proportion of black personnel from two percent to 17 percent. The most recent figures available (1977) show the lowest proportion of black enlisted reserves are found in the Naval Reserve and Air National Guard with only six percent each.

b. Blacks in the Officer Force

The percentage of all active duty officers who are black has more than doubled between FY 1964 when it was 1.7 percent and FY 1977 when it was four percent. The Army is up from a low of less than three percent in FY 1970 to six percent in FY 1977.

While in percentage terms less than representative of the total black youth population, black officer accessions are roughly proportional to the college educated black youth population. Overall black officer strengths are becoming more representative under the AVF.

The percentage of black officers in the Selected Reserve has also increased. Since FY 1973, the percentage has increased by almost 60 percent. However, it still represents only 2.5 percent of Selected Reserve officers.

2. Women in the Military

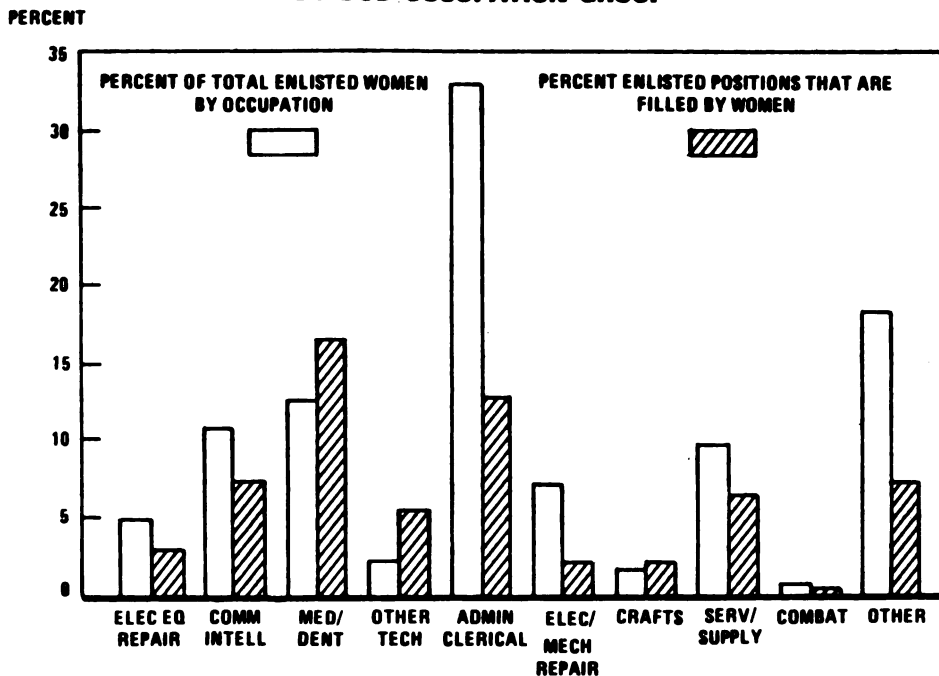
In mid FY 1978 more than 125,000 women were members of the active force. This was an increase of some 7,000 women from end FY 1977 strengths and indicates the growth toward the FY 1984 objective of 235,800 women on active duty.

Research and market analysis continue to indicate that women are willing to enlist in numbers that will support the FY 1984 goal and that expanded utilization is possible. The key women's issues appear to be attracting women with the aptitudes to meet mechanical and technical requirements of the Services, their utilization in nontraditional skill areas and retaining sufficient numbers of women beyond the first enlistment to sustain the career force.

Although some changes in distribution have occurred, most women continue to serve in the administrative and medical skills (Chart 12-3). Expansion of women into nontraditional fields is progressing slowly but satisfactorily at a pace intended to minimize training and utilization problems in the field.

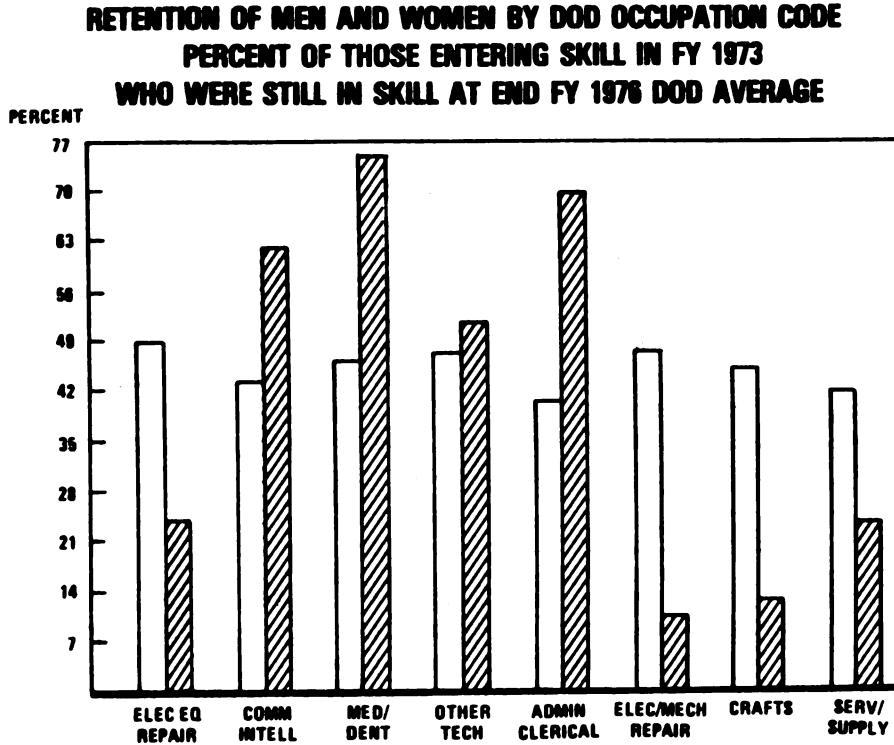
Chart 12-3

DISTRIBUTION OF ENLISTED WOMEN BY DOD OCCUPATION GROUP



Males who are in traditional male job lines and females in traditional female lines tend to remain on active duty at a higher rate than their respective contemporaries in nontraditional occupations (Chart 12-4).

Chart 12-4



Enlisted women as a whole progress with their male contemporaries and are promoted at the same or greater rate.

The Department of Defense again requests changes in the U.S. Code covering women serving on Navy combat ships and flying Navy or Air Force combat aircraft. Section 808 of the FY 1979 Department of Defense Appropriation Authorization Act (P.L. 95-485) permits Navy women to be assigned to non-combat vessels on a permanent basis and to temporary duty aboard combat vessels not expected to be assigned combat duties. Legislative change in this area to allow the respective Service Secretaries to establish utilization policies for women will ensure that women have the same career opportunities as their male counterparts.

CHAPTER 13

MANAGEMENT

I. INTRODUCTION

In my report of last year, I indicated that, although the Department of Defense is generally a well-run organization, continuing organizational and management adjustments are required to respond to changing conditions and new requirements. To this end, I outlined a number of initiatives designed to improve the efficiency and effectiveness of the Department's management structure.

In the intervening months, organizational and management reform has continued to be a matter of priority within the Department of Defense. Of particular note have been the efforts taken to: (1) improve the planning process; (2) realign DoD organizations; (3) complete staff reductions in the Office of the Secretary of Defense and Military Department Headquarters; (4) decentralize activities from the National Capital Region; (5) expand the scope of the Defense Organization Study; and (6) improve policies and practices for the acquisition of major weapon systems. Additional noteworthy Defense management projects are summarized in tabular form at the end of the Chapter.

II. IMPROVING THE PLANNING PROCESS

The Planning, Programming, and Budgeting System (PPBS) under which the Department operates was originally designed to provide for an integrated and participatory decision-making process for managing the Department of Defense. While a major innovation at the time of its inception, and still an effective management system, the PPBS had in recent years developed a number of problems. The series of guidance documents -- Defense Guidance, Planning and Programming Guidance, and Fiscal Guidance -- came to be independently produced by various staff elements within the Office of the Secretary of Defense without adequate coordination. Their correlation with each other and with the joint strategic plans of the Joint Chiefs of Staff was often tenuous, which severely limited their value as planning guidance for the Military Departments. Further, the programming and budgeting phases were characterized by repetitive reviews and frequent substantial and disruptive changes late in the PPBS cycle. These changes were due, in part, to the fact that the process did not involve the President in decision-making until the very end of the PPBS cycle.

After extensive discussions within and outside of the Department of Defense, I initiated a revised system. The new system incorporates the following changes:

- Early and continuous Secretary of Defense and Presidential Involvement in the PPBS process.
- Expansion of the roles of the Joint Chiefs of Staff and the Military Departments. The Joint Chiefs of Staff, Service Secretaries, and Service Chiefs of Staff now provide substantive input during the Consolidated Guidance drafting process on a formal and informal basis, and participate in the PPBS decision-making process at several stages thereafter.
- Development of a Consolidated Guidance which addresses fundamental defense policy and strategy issues, and provides specific planning guidelines for the initiation and development of DoD programs. This supersedes and consolidates into a single document the former Defense Guidance, Planning and Programming Guidance, and Fiscal Guidance.
- Preparation by the Joint Chiefs of Staff of a Joint Strategic Planning Document (JSPD) and Joint Program Assessment Memorandum (JPAM), in lieu of the Joint Strategic Objectives Plan (JSOP) and Joint Forces Memorandum (JFM), which were previously submitted to the Secretary of Defense. The JSPD considers the views of the Commanders of the Unified and Specified Commands in recommending military strategy to achieve national objectives and provides advice on the force levels necessary to execute this strategy. The JPAM provides JCS advice to the Secretary for his review of the Program Objective Memoranda (POM's, prepared by the Military Departments to outline their resource requirements) and Issue Papers (IP's, prepared by the OSD staff to address significant program issues requiring resolution by the Secretary), as well as advice on other decisions regarding specific military programs.
- Development of an annual Study Plan which addresses analytical deficiencies identified during the course of drafting the Consolidated Guidance. The Plan assigns responsibility for the conduct of various studies to the OSD staff, the Military Departments, and Joint Chiefs of Staff.

The PPBS is, and must continue to be, an evolving system. Undoubtedly, additional improvements can be made as time goes by. I am confident, however, that the steps we have taken to date will significantly improve the quality of Defense programs and financial planning decisions.

III. ORGANIZATION

A. Realignment of DoD Organizational Structure

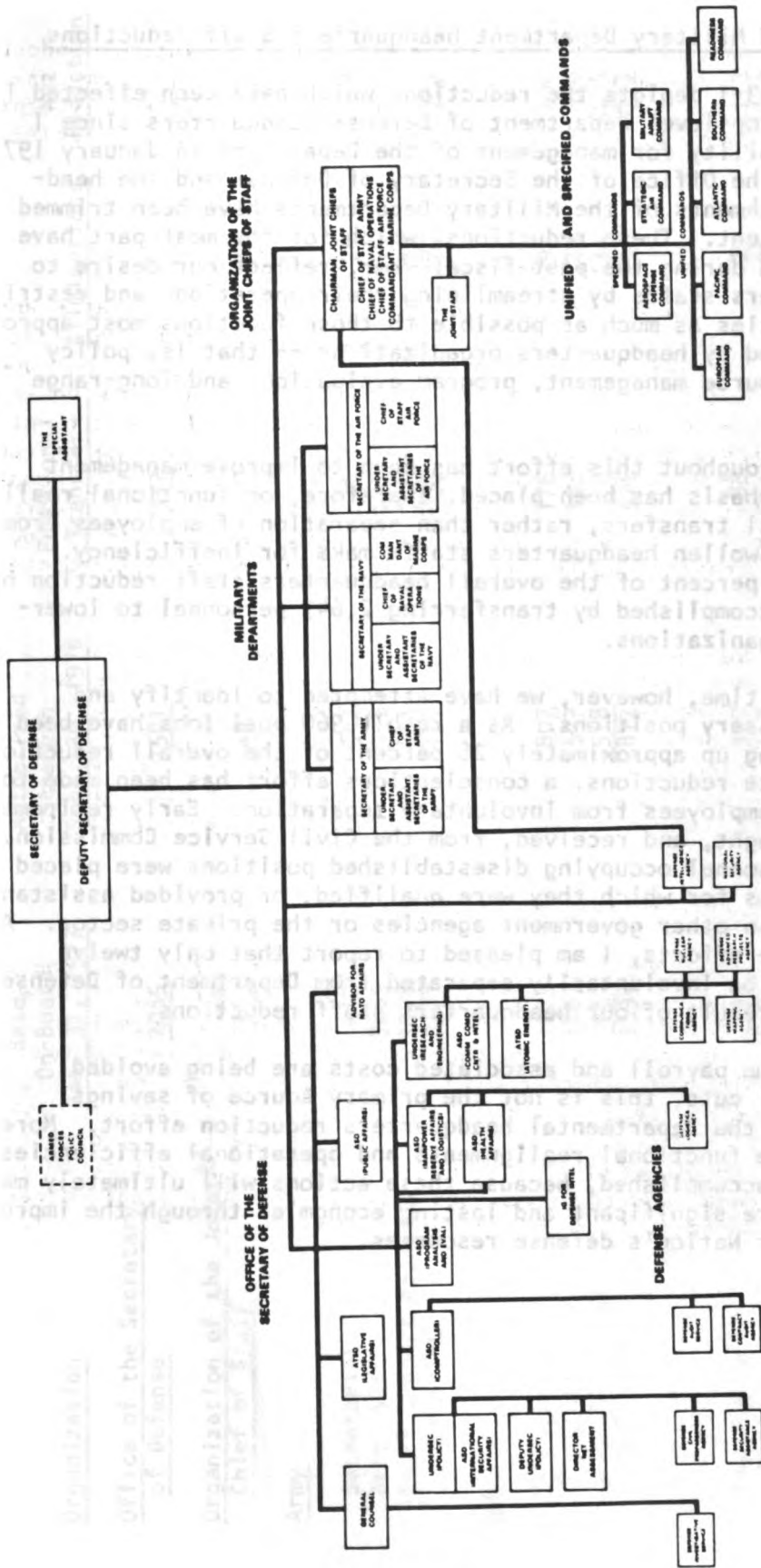
Chart 13-1 shows the current organizational arrangements and reporting relationships of the major DoD Components. The reorganization initiated during FY 1978, and described in last year's report, has now been fully implemented. I am pleased to report that it is working well. The managerial lines of authority at the top levels of the Department have been effectively streamlined and strengthened. Within the Office of the Secretary of Defense and the Headquarters of the Military Departments, related functions have been consolidated, unnecessary and marginal functions have been eliminated, and functions which are primarily operational have been transferred to lower echelons within the Departmental structure.

This reversal in the trend toward ever larger headquarters organizations is a significant step toward more effective management in the Department of Defense. The leaner headquarters structure will contribute to our continued efforts to streamline the Department to meet current and projected Defense requirements. Already this new structure has enabled us to scale down the number of Assistant Secretaries required to manage DoD programs and to reduce the size of Departmental headquarters staffs.

B. Reduction in Assistant Secretaries

The new Departmental organization structure, by combining a number of previously separated functions, is able to operate efficiently, and with improved coordination, using fewer Assistant Secretaries. Accordingly, by a Department of Defense Reorganization Order, dated March 7, 1978, which was effected with the concurrence of the Congress, we eliminated five of the twenty-two Assistant Secretary positions which were authorized to the Department by statute. Of the five, two were Assistant Secretary of Defense positions assigned to the Office of the Secretary of Defense, and the remainder were Service Assistant Secretaries -- one from each of the Military Departments.

Chart 13-1 DEPARTMENT OF DEFENSE



C. OSD and Military Department Headquarters Staff Reductions

Table 13-1 depicts the reductions which have been effected in the size of the top-level Department of Defense headquarters since I assumed responsibility for management of the Department in January 1977. As you can see, the Office of the Secretary of Defense and the headquarters establishments of the Military Departments have been trimmed more than 20 percent. These reductions, which for the most part have been accomplished during the past fiscal year, reflect our desire to reduce headquarters staffs by streamlining their operations and restricting their activities as much as possible to those functions most appropriately performed by headquarters organizations -- that is, policy development, resource management, program evaluation, and long-range planning.

Our goal throughout this effort has been to improve management performance. Emphasis has been placed, therefore, on functional realignment and personnel transfers, rather than separation of employees from Defense rolls. Swollen headquarters staffs make for inefficiency. Approximately 74 percent of the overall headquarters staff reduction has therefore been accomplished by transferring 2,647 personnel to lower-level Defense organizations.

At the same time, however, we have attempted to identify and eliminate unnecessary positions. As a result 960 positions have been eliminated, making up approximately 26 percent of the overall reduction. In effecting these reductions, a conscientious effort has been made to protect Defense employees from involuntary separation. Early retirement authority was sought, and received, from the Civil Service Commission. In addition, personnel occupying disestablished positions were placed in other Defense jobs for which they were qualified, or provided assistance in seeking jobs in other government agencies or the private sector. As a result of these efforts, I am pleased to report that only twelve personnel had to be involuntarily separated from Department of Defense employment as a result of our headquarters staff reductions.

Although some payroll and associated costs are being avoided through personnel cuts, this is not the primary source of savings anticipated from the Departmental headquarters reduction effort. More important are the functional realignments and operational efficiencies which have been accomplished, because these actions will ultimately make possible even more significant and lasting economies through the improved management of our Nation's defense resources.

Table 13-1
Departmental Headquarters Reduction Summary

<u>Organization</u>	<u>Base On-Board Jan. 31, 1977</u>	<u>Authorized Strength Sept. 30, 1978</u>	<u>Functional Transfer</u>	<u>Eliminations</u>	<u>Net Reduction</u>
<u>Office of the Secretary of Defense</u>	<u>2065</u>	<u>1581</u>	<u>337</u>	<u>147</u>	<u>484</u>
<u>Organization of the Joint Chief of Staff</u> ^{1/}	<u>1295</u>	<u>1263</u>	<u>0</u>	<u>32</u>	<u>32</u>
<u>ARMY</u>					
Secretariat	410	342	44	24	68
Army Staff	3689	3338	237	114	351
Staff Support Agencies	1278	471	719	88	807
SUB TOTAL	<u>5377</u>	<u>4151</u>	<u>1000</u>	<u>226</u>	<u>1226</u>
<u>NAVY</u>					
Secretariat	1075	807	176	92	268
CNO Staff	1867	1547	195	125	320
Hq Marine Corps	652	518	0	134	134
SUB TOTAL	<u>3594</u>	<u>2872</u>	<u>371</u>	<u>351</u>	<u>722</u>
<u>AIR FORCE</u> ^{2/}					
Secretariat	433	320	88	25	113
Air Staff	4177	3147	851	179	1030
SUB TOTAL	<u>4610</u>	<u>3467</u>	<u>939</u>	<u>204</u>	<u>1143</u>
TOTAL	16,941	13,334	2647	960	3607

^{1/} OJCS excluded from this reduction effort because it was in the process of completing a 15% reduction initiated the previous year.

^{2/} The Air Force Departmental HQ reduction will not be fully accomplished until end FY 1979.

D. Decentralization of Activities from the National Capital Region

The Department of Defense has had a long-standing program to relocate activities from the National Capital Region to other areas of the country. The objectives of this program are to: (1) decentralize non-headquarters Defense activities from the National Capital Region; (2) reduce costs of GSA-provided administrative space in the National Capital Region; and (3) increase the use of existing, underutilized installations in other parts of the country.

As a continuation of this effort, we have established a goal to eliminate, over a five-year period, two million square feet of administrative space utilized by the Department, and to relocate the associated organizations and personnel outside of the Washington area. In April 1978, the first phase of this program was announced with the identification of the initial contingent of Defense activities proposed for relocation. Detailed planning studies and analyses are currently underway. If fully implemented as proposed, the first phase could result in the reduction of approximately one million square feet of administrative space in use by the Department of Defense in the National Capital Region.

Approximately 5,400 military and civilian positions would be relocated to other areas of the country; where, to the extent possible, they will occupy currently underutilized Defense facilities. Additional Defense organizations to be relocated under the second phase of this program are still under review, and will be announced as determinations are made.

E. Defense Organization Study

While several actions have been taken to improve the Department's organizational arrangements, we have continued to address organizational issues and alternatives in pursuit of further improvements. The Defense Organization Study has been conducted in conjunction with the President's Reorganization Project. In general, the study has focused on three major areas of inquiry:

- Defense Departmental Headquarters - a review of the interrelationships, roles, functions and responsibilities of OSD, the Service Secretariats, and the Service Staffs.

- The National Military Command Structure (NMCS) - a review of the ability of the NMCS to respond to the National Command Authorities, and of the appropriate roles of the Secretary of Defense, Chairman of the Joint Chiefs of Staff, Joint Chiefs of Staff, and Unified Commanders in the NMCS.
- Defense Resource Management - a review of DoD resource management systems; including the planning, programming, and budgeting system and the system acquisition process, as well as DoD support activities.

During the past year, significant progress has been made. Two of these reviews (Defense Departmental Headquarters and National Command Structure Studies) have been completed and the third, the Defense Resource Management Study, is scheduled for completion by early 1979. The recommendations of the two completed reviews are currently under consideration within the Department. In general, they touch on four areas of inquiry:

1. The appropriate source, content, and quality of military advice to include: the proper role of the Chairman of the JCS, Joint Chiefs of Staff, and the Commanders of the Unified and Specified Commands in policy formulation and in resource management decision-making, and improvements in Joint Staff procedures and personnel policies.
2. The appropriate National Military Command Structure, to include: responsiveness to the National Command Authorities; the relationships between the Chairman of the JCS, the Joint Chiefs of Staff, and Commanders of Unified and Specified Commands; the organization, scope, and missions of the Unified and Specified Commands.
3. The appropriate organization and functions of the Office of the Secretary of Defense, to include: the responsibilities of the recently established position of Under Secretary of Defense for Policy and the interrelationships of other OSD Under and Assistant Secretaries of Defense, the Chairman of the JCS, Joint Chiefs of Staff, and Secretaries of the Military Departments.
4. The appropriate organization and functions of Military Department headquarters, to include the role of Service Secretaries and their staffs, and the role of Military Service staffs.

After the Resource Management study has been completed, a consolidated study report summarizing the major recommendations and

decisions generated by all three efforts, will be prepared for the President. I will be able to implement some of the recommendations through administrative initiatives; others may require Presidential or Congressional action.

We do not intend to wait until the consolidated study report is completed, however, to take action on recommendations. Those which are appropriate for immediate implementation will be acted on earlier.

At the same time, the Defense Organization Study has been expanded to encompass additional areas of inquiry. At present, these include:

- Defense Medical Resources -- a review of DoD health care in terms of the organization and management of the military health care system, military readiness requirements, and benefits packages. A latter phase of the study is investigating civil sector medical benefits programs to assist in making recommendations as to appropriate military programs.
- Defense Training -- a review of the organization of training within the Department of Defense and of the processes by which policy and resource decisions which affect training are made.
- Defense Agencies -- a review of the roles, functions, and responsibilities of the Defense Agencies.

We anticipate that significant organizational improvement will be realized as a result of the Defense Organization Study. Many of the recommendations contained in the reviews which have been completed to date have been well received. It should be emphasized, however, that we are not seeking organizational change for its own sake. We are interested in improving efficiency and effectiveness, and will adopt those changes which will best achieve these ends. If this can be done by "fine tuning" the current organization, we will pursue that course of action. If, on the other hand more fundamental actions are in order, we will respond accordingly.

In addition to the Defense Organization Study, there are several interagency studies being conducted as part of the work of the President's Reorganization Project which may affect the Department of Defense. One such effort, a study of Federal Emergency Preparedness and

Response Programs, has already been completed. It has resulted in the decision to transfer the functions and resources of the Defense Civil Preparedness Agency from the Department of Defense to the new Federal Emergency Management Agency. Further, the Civil Service reform legislation enacted by the 95th Congress embodies the recommendations of another Interagency study effort. Increased flexibility with respect to the rotation of Civil Service executives as well as new incentive systems for supervisors and senior executives, which the legislation mandates, should help to improve management performance in the Department of Defense. Recently completed studies of Federal Data Processing, the Selective Service System, and Administrative Supply and Support Services are being reviewed to identify implementing actions.

We appreciate the cooperation shown by the Congress in our reorganization efforts to date. We shall, of course, continue to consult on future changes with Congress, and in some cases may be seeking formal approval for those requiring Congressional review or legislative change.

IV. EFFICIENCY IN DEFENSE SPENDING

Inefficiencies in the Department of Defense directly reduce the amount of real defense capability attained, since in the nature of things the total resources available to DoD will always be limited. It is for that reason that I have put considerable emphasis on improving defense efficiency -- in the United States and in NATO. I believe our efforts will produce some excellent results.

We are revising acquisition policy to encourage more cost/effective procurement practices. Real economies (on the order of \$250 million annually) are expected under a new directive that permits wider use of commercial products, elimination of unnecessary government specifications, and the use of commercial channels for distribution. We have also: expanded use of multi-year contracting when lower unit prices can be obtained; encouraged contractors to invest in assets that reduce unit production costs; and taken steps to avoid the high costs associated with failing to buy products at the most efficient production rates.

High technology can be applied to reduce costs. We are investing to develop new materials and new manufacturing techniques which will reduce the cost of military systems. We plan to exploit further the advantages of our electronics industry by developing new Very High Speed Integrated Circuits, each one capable of replacing 100 or more of the present integrated circuits. We estimate savings in life cycle costs of

10 percent or more would accrue from application of this technology in several satellite and communication systems that are representative candidates for its use.

Our technological edge can be exploited to develop more efficient systems -- systems with reduced complexity yet improved performance. The air-launched cruise missile currently under development is one example of such a system. A B-52 cruise missile force will be about 40 percent less expensive than a B-1 force of equal effectiveness. The cruise missile exploits the American edge in technology, in miniature jet engines, precision guidance systems, and aerodynamics, providing a highly efficient approach to modernizing our bomber force.

Through base closures, reductions in force, and realignment or consolidation actions, over 15,000 military and civilian positions have been eliminated since January 1977. Estimated savings are \$240 million annually. Pending proposals involving 20,000 spaces and \$300 million in annual savings will be coming up for decision during FY 1979 and FY 1980.

A high level Steering Group on Oversight of Defense Activities has been formed to assess our existing management systems for vulnerability to fraud or waste, and to devise methods to correct potential weaknesses before fraud or waste occurs.

We are considering a realignment of logistic agency responsibilities that could result in annual administrative savings of approximately \$100 million.

While I believe we have made a good beginning, there are still many difficult issues outstanding. Many inefficiencies are mandated by law, and are not easily changed. Some of our most intractable and expensive issues center on civilian pay and personnel reductions. Ideally we should be able to pay blue collar workers at the prevailing rate for comparable work in their wage area; instead, through a series of legislative exceptions to that policy, we will spend \$2 billion more than necessary for wages over the next five years unless we get legislative relief. Ideally we should be able to reduce a base structure that is too large for our forces; realistically, reductions come only after protracted discussions -- environmental, regional and political. Ideally our attempts to buy efficiently and then discontinue production lines should not be frustrated by mandated procurement. Ideally we should be able to contract out jobs that can be performed more economically by the private sector; vigorously pursuing that course, however, is procedurally difficult. When we do contract for construction or services, pay rates

under the contracts should not be artificially inflated by operation of the Davis-Bacon and Service Contract Acts; the Davis-Bacon Act alone results in increased costs of up to 15 percent in DoD construction contracts.

There are clearly a number of significant steps that remain to be taken to increase the efficiency of defense spending -- steps that require sustained efforts from both the Department and the Congress to achieve. If successfully implemented, these steps to increase efficiency in the Department of Defense should result in the saving of millions of dollars, and enable us to get a high return on each dollar spent for defense. In a time when our principal adversary is reaping the benefits of a 15-year sustained commitment to increasing defense expenditures, we can prudently do no less.

V. IMPROVING THE WEAPONS SYSTEM ACQUISITION PROCESS

We have taken a number of steps aimed at improving the acquisition process so that we can get better equipment into the hands of our forces faster and more economically. Our efforts include:

- Development of a new mission area structure for material acquisition activities. We expect the structure to provide a framework for better assessment of our equipment needs and justification for our research, development and acquisition activities on the basis of the Defense missions which they support.
- Emphasis on greater use of competition. Initiatives include: (1) Competitive parallel activities during concept development, validation and even engineering development, for as many programs as appropriate; (2) A leader/follower production concept where there will be a sharing of the production effort on long production run programs. This concept will be used in the cruise missile program.
- Greater use of concurrent development and test activities when the technological risks warrant it -- particularly when competing concepts are being developed in parallel. On the DIVAD (Division Air Defense) gun program, concurrency and a two-contractor, "government-hands-off" competition will result in a full scale development phase that is about two years shorter than what we would normally expect.

- Carefully considering modification of systems as at least an equal alternative to new system development.
- Consolidation of similar program activities to reduce undesirable duplication, such as Air Force/Navy air-to-air and air-to-ground weapons.
- Earlier examination of system affordability, including (1) emphasis on consideration of alternatives during DSARC reviews and (2) a major affordability analysis at DSARC-II so that a go-ahead can be treated as a tentative commitment to produce a system, provided full-scale-development proceeds as expected.
- More emphasis on acquisition schedules based on operational needs, rather than technological opportunities. Required IOCs will be defined at program initiation and will be instrumental in determining how much new technology can be applied to a particular solution.
- More attention to the need to cancel programs with low-payoff instead of stretching other programs to accommodate more programs in the budget.
- Increased emphasis on technological and industrial cooperation within the NATO alliance.
- Continued initiatives to make the industrial base (government-owned and private sector) more cost effective and responsive to DoD's peacetime and emergency needs.
- Earlier and more detailed consideration of reliability and maintenance factors in weapon system planning.

VI. ENERGY MANAGEMENT

DoD energy management has the dual objectives of assuring energy supplies essential to the defense mission, and promoting energy conservation. Petroleum fuels account for 69 percent of DoD's energy usage. In FY 1978, DoD's energy consumption was 2.2 percent less than FY 1977, although the total cost of energy used increased by 3.5 percent. The Organization of Petroleum Exporting Countries (OPEC) December 1978 petroleum price increase will further increase our energy costs.

We have a number of priority action items for energy management scheduled for 1979.

-- Petroleum Supply Assurance - Short to Mid-Term

In 1973 the U.S. imported 35 percent of its petroleum supplies; in 1978, we imported almost 50 percent. This means increased vulnerability to petroleum supply disruptions. The world tension which would accompany a significant supply disruption would demand a high state of military readiness. Increased readiness would mean increased military fuel consumption at the very time the rest of our society would have to cut back. The Department of Defense needs to know exactly how it will cope with petroleum supply disruptions in the short term. In coordination with the Department of Energy, DoD is developing specific procedures and agreements, including use of the Defense Production Act and the Strategic Petroleum Reserve, to obtain priority allocation of petroleum products.

-- Energy Research and Development Plan for Mobility Fuels

Military equipment is now dependent on natural petroleum products. There will be a transition period over the next twenty to thirty-five years, during which natural petroleum products will be more and more difficult to obtain. As liquid fuels derived from oil shale, coal, and tar sands reach the market place, DoD must be prepared to use them. In the long term, DoD may need to build weapon systems that can run on hydrogen or some other non-hydrocarbon fuel. Work will also continue on the longer term objective of developing entirely new energy sources.

-- Energy Technology Demonstration Projects with the Department of Energy

The Department of Defense and the Department of Energy have completed preliminary planning on major energy demonstration initiatives, including projects using solar energy, photovoltaics, geothermal electricity, geothermal space heating, wood-fueled central power plants, and three "showcase" installations of energy technology.

-- Facilities Energy Conservation

Progress will continue in 1979 in our efforts to promote energy self-sufficiency on military installations, reduce fuel and utility expenses, and increase energy conservation. We are working to achieve the President's conservation goals in existing buildings and new buildings by 1985. (See Table 13-2.)

Table 13-2

Management Projects

<u>Project</u>	<u>Description</u>	<u>Goals</u>	<u>Current Status/ Accomplishments</u>
1. Energy Conservation Investment Program	An FY 76 to FY 84 military construction program to retrofit DoD facilities to make them more energy-efficient.	A 12% reduction (69 trillion BTU's) in facilities energy use saving approximately \$227 million per year. (FY 78 constant dollars).	Approximately 800 projects underway, with an estimated savings of 23 trillion BTU's representing a savings of approximately \$77 million per year in utility costs.
2. DoD Productivity Program	Established in August 1975; composed of 4 facets: productivity measurement and evaluation; work methods and measurement improvement; productivity enhancing capital investment; and workforce motivation.	To provide optimum productivity growth throughout the Department in order to obtain the highest level of preparedness with the resources available.	Present measurement and evaluation practices are being reoriented to emphasize goal establishment and to align productivity evaluation with internal management uses. Additional information on the DoD Productivity Program is included in the Defense Manpower Requirements Report.
3. Tri-Service Medical Information System (TRIMIS)	A Tri-Service program initiated in FY 76 to apply Automatic Data Processing (ADP) techniques to improve the effectiveness and economy of health care delivery in the Army, Navy and Air Force.	A net uniform annual savings of approximately \$7 million based on the acquisition and implementation of short range systems.	Program is in the early stages of development. Initial tests of selected pilot systems appear to support program objectives. Appreciable progress has been made in pursuing the procurement of short range systems.
4. Reliance on Private Sector Hospitalization Resources During Wartime	An FY 78 and 79 study and planning effort to establish policies and procedures to use private sector hospitals to supplement DoD health assets during wartime.	Execution of standby contracts with civilian hospitals to supplement military hospitalization.	Test of alternative control procedures accomplished during Exercise Nifty Nugget. Results pending.

CHAPTER 14
THE DEFENSE BUDGET

I. SUMMARY

Department of Defense funding requirements for the program previously discussed are summarized as follows:

Table 14-1
Department of Defense - Military Functions
(\$ Millions)

	<u>FY 1978</u>	<u>FY 1979</u>	<u>FY 1980</u>
<u>Current Dollars</u>			
Total Obligational Authority (TOA)	116.5	125.7	135.5
Budget Authority	115.3	125.2	135.0
Outlays	103.0	111.9	122.7
<u>Constant FY 1980 Dollars</u>			
Total Obligational Authority (TOA)	131.8	133.2	135.5
Budget Authority	130.5	132.7	135.0
Outlays	117.4	119.1	122.7

Budget authority (BA) represents the legal authority to incur obligations, that is, authority to hire personnel or enter into contracts involving expenditures of funds from the Treasury within a specified period of time. Budget authority, in most cases, is provided by appropriation, but there are some exceptions. For military functions, the exceptions are technical and relatively minor; 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); BA on the other hand represents the value of annual new authority to incur obligations.

Outlays represent expenditures or net checks issued. About three-quarters of FY 1980 outlays will result from FY 1980 budget authority; the remainder will come from budget authority provided in FY 1979 and earlier years.

11. THE FY 1980 BUDGET AND DEFENSE SPENDING TRENDS

Chart 14-1

DEPARTMENT OF DEFENSE BUDGET TRENDS (BILLIONS OF CURRENT \$)

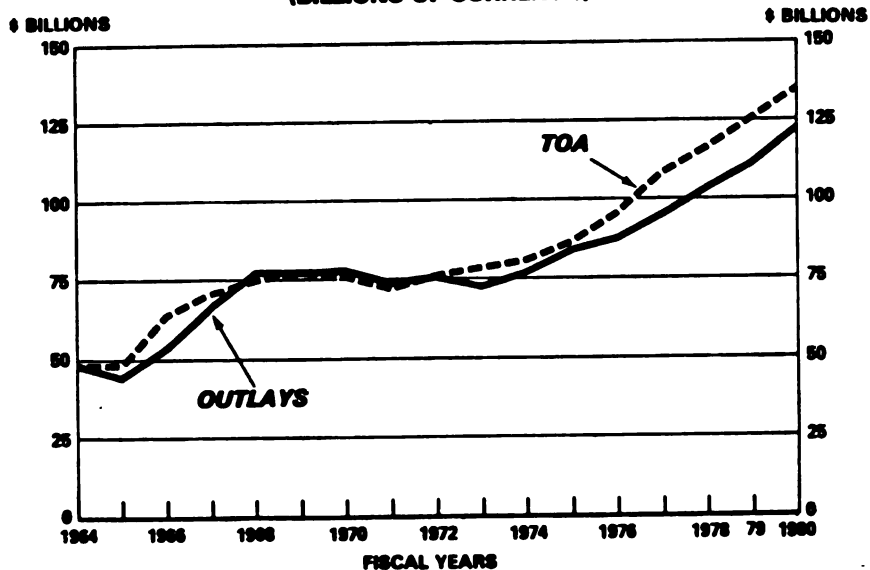
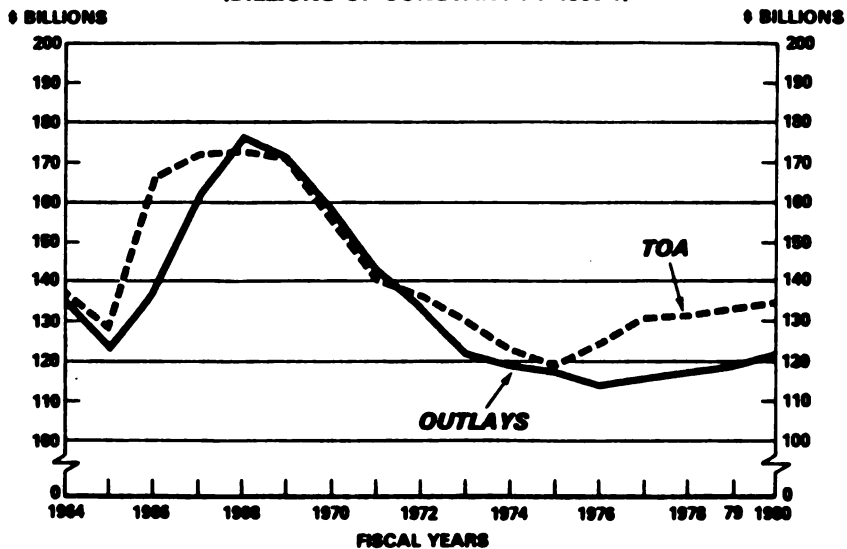


Chart 14-2

DEPARTMENT OF DEFENSE BUDGET TRENDS (BILLIONS OF CONSTANT FY 1966 \$)



III. ASSUMPTIONS AND PROJECTIONS

Assumptions as to purchase price inflation and pay increases are shown in the following table. These projections are based on guidance furnished by the Office of Management and Budget.

Table 14-2

Pay Raises and Price Increases by Element FY 1978-1984
Percentage Increases, Fiscal Years

	<u>1978- 1979</u>	<u>1979- 1980</u>	<u>1980- 1981</u>	<u>1981- 1982</u>	<u>1982- 1983</u>	<u>1983- 1984</u>
Military Pay Base	5.64	5.56	5.57	5.15	4.77	4.52
Other Military Personnel Expenses	6.54	5.70	5.03	4.25	3.34	2.54
TOTAL, Military Personnel	<u>5.76</u>	<u>5.57</u>	<u>5.51</u>	<u>5.04</u>	<u>4.62</u>	<u>4.29</u>
Classified Civil Service	5.50	5.50	5.25	5.00	4.75	4.50
Wage Board 1/	6.49	4.24	4.51	5.10	4.85	4.60
Foreign National Direct Hire	15.08	12.00	10.00	8.00	8.00	8.00
Foreign National Indirect Hire	5.96	6.00	6.00	6.00	6.00	6.00
TOTAL, Civilian Payroll	<u>6.01</u>	<u>5.20</u>	<u>5.14</u>	<u>5.15</u>	<u>4.94</u>	<u>4.68</u>
Military Retired Pay	8.74	7.86	6.38	5.52	4.47	3.46
Pay Composite	6.35	5.88	5.56	5.16	4.68	4.23
Industry Purchases						
Outlays	8.00	7.00	6.00	4.80	3.70	2.80
TOA	7.11	6.08	5.02	4.01	3.35	2.63
Composite Total						
Outlays	7.08	6.40	5.78	4.98	4.18	3.46
TOA	6.74	5.97	5.26	4.53	3.91	3.29

1/ Wage Board Pay raises during fiscal years are as follows:

<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
8.0%	5.5%	3.4%	5.25%	5.0%	4.75%	4.5%

IV. OUTYEAR PROJECTIONS

Using these assumptions Defense budget projections from FY 1979 through FY 1984 will be as follows:

Table 14-3

DoD, Military Functions (Current Prices)
(\$ Billions)

	<u>TOA</u>	<u>Outlays</u>
FY 1979	125.7	111.9
FY 1980	135.5	122.7
FY 1981	145.7	133.7
FY 1982	155.7	144.9
FY 1983	166.8	155.5
FY 1984	177.7	165.7

V. ANALYSIS BY PROGRAM AREA

The following tables provide a financial summary of the 10 major programs:

Table 14-4

Department of Defense Budget Financing Summary by Major Program
(\$ Billions)

<u>Military Program</u>	Current Dollars		
	<u>Total Obligational Authority</u>		
	<u>FY 1978</u>	<u>FY 1979</u>	<u>FY 1980</u>
Strategic Forces	9.1	8.8	10.8
General Purpose Forces	42.5	47.6	50.0
Intelligence and Communications	7.9	8.1	9.1
Airlift and Sealift	1.6	1.8	1.9
Guard and Reserve Forces	6.9	7.0	7.1
Research and Development	10.1	11.1	11.8
Central Supply and Maintenance	11.9	12.9	13.8
Training, Medical, Other General			
Personnel Activities	23.9	25.8	27.9
Administration and Associated			
Activities	2.2	2.3	2.6
Support of Other Nations (Excluding MAP)	<u>.3</u>	<u>.4</u>	<u>.6</u>
TOTAL	116.5	125.7	135.5

Table 14-5

Department of Defense Budget Financing Summary
by Major Programs
(\$ Billions)

<u>Military Programs</u>	Constant FY 1980 Dollars		
	<u>Total Obligational Authority</u>		
	<u>FY 1978</u>	<u>FY 1979</u>	<u>FY 1980</u>
Strategic Forces	10.3	9.1	10.8
General Purpose Forces	47.8	50.3	50.0
Intelligence and Communications	8.9	8.6	9.1
Airlift and Sealift	1.8	1.9	1.9
Guard and Reserve Forces	7.8	7.4	7.1
Research and Development	11.5	11.8	11.8
Central Supply and Maintenance	13.5	13.7	13.8
Training, Medical, Other General Personnel Activities	27.3	27.5	27.9
Administration and Associated Activities	2.5	2.5	2.6
Support of Other Nations (Excluding MAP)	<u>.3</u>	<u>.4</u>	<u>.6</u>
TOTAL	131.8	133.2	135.5

Table 14-6

Department of Defense Budget Financial Summary
by Appropriation Category
(\$ Billions)

<u>Appropriation Title</u>	Current Dollars		
	<u>Total Obligational Authority</u>		
	<u>FY 1978</u>	<u>FY 1979</u>	<u>FY 1980</u>
Military Personnel	27.2	28.7	30.3
Retired Pay	9.2	10.3	11.5
Operation and Maintenance	34.9	38.1	40.9
Procurement	30.3	31.5	35.4
RDT&E	11.5	12.8	13.6
Military Construction	1.9	2.6	2.2
Family Housing	1.4	1.7	1.6
Revolving and Management Funds	.2	.1	--
Special Foreign Currency	<u>--</u>	<u>--</u>	<u>--</u>
TOTAL	116.5	125.7	135.5

NOTE: Totals may not add due to rounding.

Table 14-7

Department of Defense Budget Financial Summary
by Appropriation Category
 (\$ Billions)

<u>Appropriation Title</u>	Constant FY 1980 Dollars		
	<u>FY 1978</u>	<u>FY 1979</u>	<u>FY 1980</u>
Military Personnel	30.4	30.3	30.3
Retired Pay	10.8	11.1	11.5
Operation and Maintenance	39.5	40.3	40.9
Procurement	34.2	33.2	35.4
RDT&E	13.1	13.6	13.6
Military Construction	2.1	2.8	2.2
Family Housing	1.6	1.8	1.6
Revolving and Management Funds	.2	.1	--
Special Foreign Currency	--	--	--
TOTAL	131.8	133.2	135.5

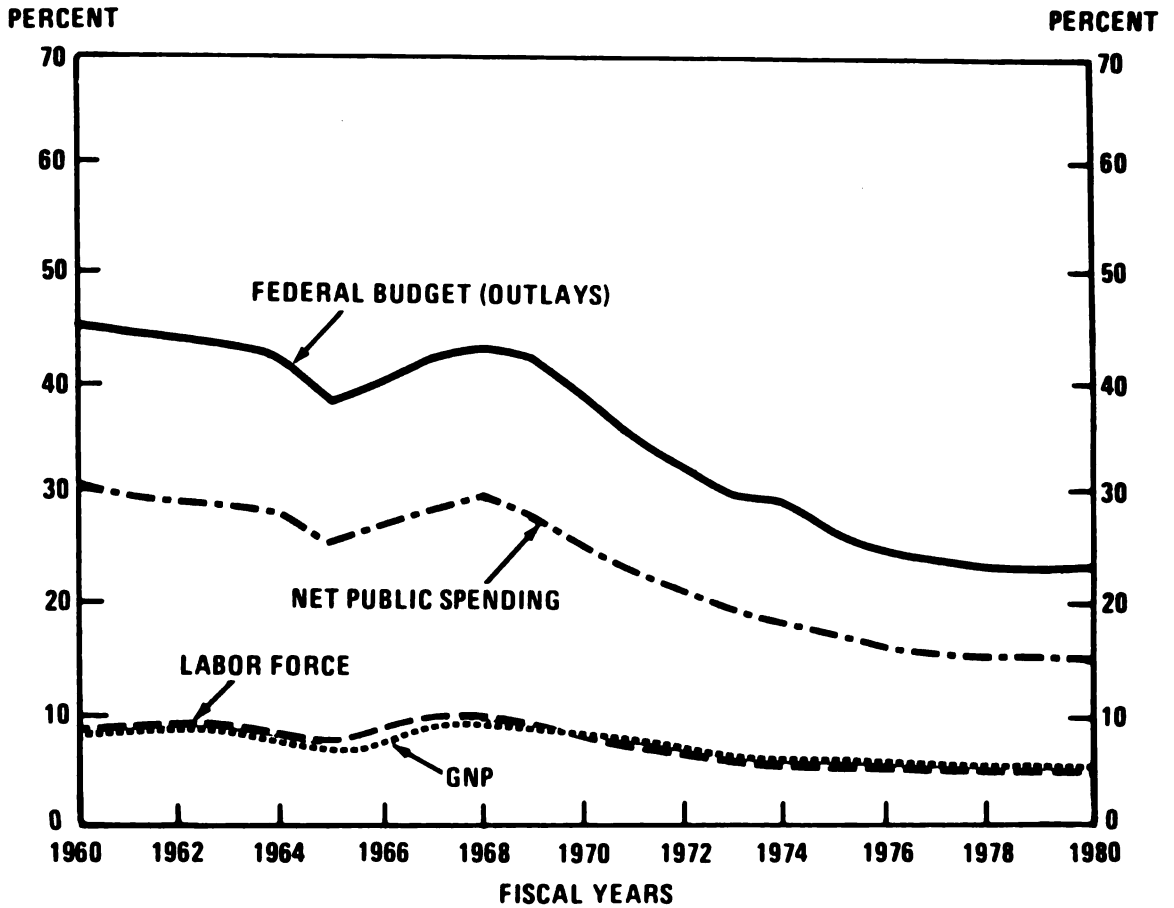
Table 14-8

Department of Defense Budget
Financial Summary

	<u>FY 1964</u>	<u>FY 1968</u>	<u>FY 1977</u>	<u>FY 1978</u>	<u>FY 1979</u>	<u>FY 1980</u>
Department of Defense as Percentage:						
Federal Budget (Outlays)	41.8%	43.3%	23.8%	22.8%	22.7%	23.1%
Gross National Product	8.0%	9.3%	5.2%	5.0%	4.9%	4.9%
Labor Force	8.3%	9.9%	4.9%	4.9%	4.9%	4.9%
Net Public Spending	27.9%	29.5%	15.6%	15.1%	14.8%	14.9%

Chart 14-3

**DEPARTMENT OF DEFENSE BUDGET
FINANCIAL SUMMARY
DOD AS A PERCENTAGE OF:**



APPENDICES

APPENDIX A
TABLE 1
Department of Defense
Financial Summary
(in Millions of Dollars)

Current Dollars

	<u>FY 1964</u>	<u>FY 1968</u>	<u>FY 1972</u>	<u>FY 1976</u>	<u>FY 1978</u>	<u>FY 1979</u>	<u>FY 1980</u>
Summary by Budget Title							
Military Personnel	12,983	19,961	23,147	25,430	27,184	28,683	30,328
Retired Pay	1,211	2,093	3,889	7,326	9,173	10,319	11,466
Operation and Maintenance	11,693	20,950	21,242	20,848	34,902	38,085	40,894
Procurement	15,028	22,528	18,526	21,213	30,346	31,500	35,425
Research, Development, Test, & Evaluation	7,053	7,263	7,584	9,520	11,474	12,774	13,606
Special Foreign Currency Program	-	-	12	3	2	14	7
Military Construction	977	1,557	1,262	2,148	1,860	2,608	2,167
Family Housing & Homeowners Asst. Prog.	602	612	839	1,259	1,382	1,657	1,608
Revolving & Management Funds	-	-	-	135	171	101	-
Total-Direct Program (TOA)	49,547	74,965	76,502	95,881	116,494	125,740	135,500
Summary by Program							
Strategic Forces	8,387	7,128	7,156	7,225	9,139	8,581	10,834
General Purpose Forces	16,417	30,537	25,560	32,972	42,473	47,610	49,974
Intelligence and Communications	4,380	5,542	5,458	6,674	7,896	8,135	9,116
Airlift and Sealift	1,040	1,747	1,114	1,262	1,619	1,810	1,907
Guard and Reserve Forces	1,768	2,177	3,258	5,380	6,945	7,026	7,113
Research and Development	4,834	4,270	5,749	8,655	10,105	11,125	11,758
Central Supply and Maintenance	4,638	8,385	8,663	9,740	11,945	12,889	13,770
Training, Medical, Other Gen. Pers. Activ.	6,921	12,151	15,198	21,539	23,916	25,825	27,887
Administration and Assoc. Activities	1,079	1,239	1,693	2,180	2,195	2,343	2,557
Support of Other Nations ^{1/}	81	1,789	2,652	244	259	296	583
Total-Direct Program (TOA)	49,547	74,965	76,502	95,881	116,494	125,740	135,500
Summary by Component							
Department of the Army	12,275	24,962	22,094	23,826	28,943	31,646	33,968
Department of the Navy	14,450	20,781	24,041	31,465	39,639	41,530	44,019
Department of the Air Force	19,958	24,974	23,834	28,441	33,118	35,427	39,007
Defense Agencies/OSD/JCS	1,007	1,498	1,745	3,487	4,152	4,553	5,300
Defense-wide	1,857	2,749	4,788	8,662	10,642	12,584	13,206
Total-Direct Program (TOA)	49,547	74,965	76,502	95,881	116,494	125,740	135,500
Financing Adjustments	80	1,377	-1,496	- 373	-1,172	- 531	- 459
Budget Authority (BA)	49,627	76,342	75,006	95,508	115,322	125,209	135,041
Outlays	49,470	77,265	75,076	87,891	103,042	111,900	122,700

Note: In the FY 1980 column, amounts for military and civilian pay increases, military retired pay reform and other proposed legislation are distributed. Details may not add to totals due to rounding.

^{1/} Support of Other Nations excludes MAP.

APPENDIX B

TABLE 1

Department of Defense
General and Flag Officer Strengths

<u>Actual</u>	<u>General and Flag Officer Strengths</u>	<u>General and Flag Officer Per 10,000 Total Military</u>
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
1977	1,174	5.7
1977	1,159	5.6
1978	1,119	5.4
 <u>Programmed 1/</u>		
1979	1,119	5.5
1980	1,119	5.5

1/ FY 1980 President's Budget

TABLE 2
Department of Defense
Officer and Enlisted Strength

<u>Actual</u>	<u>Officer Strength (000s) 1/</u>	<u>Enlisted to Officer Ratio</u>
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	6.6
1971	371	6.3
1972	336	5.9
1973	321	6.0
1974	302	6.2
1975	292	6.3
1976	281	6.4
197Q	279	6.5
1977	275	6.5
1978	273	6.5
 <u>Programmed 2/</u>		
1979	274	6.5
1980	277	6.4

1/ Includes all officers on extended active duty.
2/ FY 1980 President's Budget.

TABLE 3
DEPARTMENT OF DEFENSE
MANPOWER LEVELS
(End Year - In Thousands)

<u>Actual</u>	<u>Active Military 1/</u>	<u>Civilian 2/</u>	<u>Total</u>
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
1977	2,083	1,042	3,125
1977	2,074	1,022	3,096
1978	2,061	1,016	3,077
<u>Programmed 3/</u>			
1979	2,050	994	3,044
1980	2,050	985	3,035

-
- 1/ Excludes military personnel on active duty who are paid from Civil Works and Reserve Components appropriations.
- 2/ Direct and indirect hire. Excludes Civil Functions, special youth employment programs, and NSA employees.
- 3/ FY 1980 President's Budget.
- * Estimated.

TABLE 4

Active Duty Military Personnel, Reserve Component Military
Personnel, and Civilian Personnel Strength 1/
(end of fiscal years in thousands)

	<u>1964</u>	<u>1968</u>	<u>1972</u>	<u>1976</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
Active Duty Military							
Army	972	1,570	811	779	771	774	774
Navy	667	765	588	525	530	524	528
Marine Corps	190	307	198	192	191	190	189
Air Force	<u>856</u>	<u>905</u>	<u>726</u>	<u>585</u>	<u>569</u>	<u>563</u>	<u>559</u>
Total	2,685	3,547	2,322	2,081	2,061	2,050	2,050
Reserve Components (in paid status)							
Army National Guard	382	389	388	362	341	346	365
Army Reserve	269	244	235	195	186	192	200
Naval Reserve	123	124	124	97	83	87	49
Marine Corps Reserve	46	47	41	30	33	34	34
Air National Guard	73	75	89	91	92	93	93
Air Force Reserve	<u>61</u>	<u>43</u>	<u>47</u>	<u>48</u>	<u>54</u>	<u>56</u>	<u>57</u>
Total	953	922	925	823	788	807	798
Direct Hire Civilian							
Army <u>2/</u>	360	462	367	329	316	307	308
Navy	332	419	342	311	306	299	294
Air Force <u>2/</u>	305	331	280	248	237	234	227
Defense Agencies	<u>38</u>	<u>75</u>	<u>61</u>	<u>72</u>	<u>76</u>	<u>76</u>	<u>77</u>
Total <u>2/</u>	1,035	1,287	1,050	960	935	917	907

1/ Totals may not add due to rounding.

2/ 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.

APPENDIX C: BUDGET-RELATED TABLES AND CHARTS

DEPARTMENT OF DEFENSE
SUMMARY OF SELECTED ACTIVE MILITARY FORCES

	ACTUAL JUNE 30, 1964	ACTUAL JUNE 30, 1968	ACTUAL SEPT 30, 1978	ESTIMATED SEPT 30, SEPT 30, 1979 1980
STRATEGIC FORCES:				
INTERCONTINENTAL BALLISTIC MISSILES:				
MINUTEMAN	600	1,000	1,000	1,000
TITAN II	108	54	54	54
POLARIS-POSEIDON MISSILES	336	656	656	656
STRATEGIC BOMBER SQUADRONS	78	40	25	25
MANNED FIGHTER INTERCEPTOR SQUADRONS	40	26	6	6
ARMY AIR DEFENSE FIRING BATTERIES	107	81	-0-	-0-
GENERAL PURPOSE FORCES:				
LAND FORCES:				
ARMY DIVISIONS	16½	19½	16	16
MARINE CORPS DIVISIONS	3	4	3	3
TACTICAL AIR FORCES:				
AIR FORCE WINGS	21	30	26	26
NAVY ATTACK WINGS	15	15	12	12
MARINE CORPS WINGS	3	3	3	3
NAVAL FORCES:				
ATTACK & ANTISUBMARINE CARRIERS	24	23	13	13
NUCLEAR ATTACK SUBMARINES	19	33	70	75
OTHER WARSHIPS	363	385	166	170
AMPHIBIOUS WAR SHIPS	133	157	64	65
AIRLIFT AND SEALIFT FORCES:				
STRATEGIC AIRLIFT SQUADRONS:				
C-5A	-0-	-0-	4	4
C-141	-0-	14	13	13
TROOPSHIPS, CARGO SHIPS AND TANKERS	100	120	48	48

DEPARTMENT OF DEFENSE BUDGET
DEFENSE EMPLOYMENT OUTLOOK
(END-YEAR - IN THOUSANDS)

	<u>FY 64</u>	<u>FY 68</u>	<u>FY 78</u>	<u>FY 79</u>	<u>FY 80</u>	<u>CHANGE</u> <u>FY 79-80</u>
CIVILIANS						
ARMY	453	542	371	358	360	+2
NAVY/MARINE CORPS	346	433	317	310	305	-6
AIR FORCE	338	357	251	248	241	-7
DEFENSE AGENCIES	37	74	77	78	79	+1
TOTAL CIVILIANS	1,174	1,405	1,016	994	985	-9
MILITARY (ACTIVE)						
ARMY	972	1,570	771	774	774	-
NAVY	667	765	530	524	528	+4
MARINE CORPS	190	307	191	190	189	-1
AIR FORCE	856	905	569	563	559	-4
TOTAL MILITARY	2,685	3,547	2,061	2,050	2,050	-
TOTAL MILITARY AND CIVILIANS	3,859	4,952	3,078	3,044	3,035	-9
DEFENSE RELATED INDUSTRY	2,280	3,174	1,775	1,855	1,975	+120
TOTAL DEFENSE MANPOWER	6,139	8,126	4,853	4,899	5,010	+111

**DEPARTMENT OF DEFENSE BUDGET
 DEFENSE BUDGET TOTALS
 (\$ IN BILLIONS)**

<u>CURRENT DOLLARS</u>	<u>FY 1978 ACTUAL</u>	<u>FY 1979 ESTIMATE</u>	<u>FY 1980 ESTIMATE</u>	<u>INCREASE FY 1979-80</u>
TOTAL OBLIGATIONAL AUTHORITY (TOA)	116.5	125.7	135.5	9.8
BUDGET AUTHORITY (BA)	115.3	125.2	135.0	9.8
OUTLAYS	103.0	111.9	122.7	10.8
CONSTANT FY 1980 DOLLARS				
TOTAL OBLIGATIONAL AUTHORITY (TOA)	131.8	133.2	135.5	2.3
BUDGET AUTHORITY (BA)	130.5	132.7	135.0	2.4
OUTLAYS	117.4	119.1	122.7	3.6

33

DEPARTMENT OF DEFENSE
FINANCIAL SUMMARY BY COMPONENT
(TOTAL OBLIGATIONAL AUTHORITY, \$ IN BILLIONS)

<u>CURRENT DOLLARS</u>	<u>FY 1978</u>	<u>FY 1979</u>	<u>FY 1980</u>
ARMY	28.9	31.6	34.0
NAVY	39.6	41.5	44.0
AIR FORCE	33.1	35.4	39.0
DEFENSE AGENCIES/OSD	4.2	4.6	5.3
DEFENSE-WIDE	10.6	12.6	13.2
TOTAL	116.5	125.7	135.5
?			
<u>CONSTANT (FY 1980) DOLLARS</u>			
ARMY	32.5	33.4	34.0
NAVY	44.8	44.0	44.0
AIR FORCE	37.4	37.5	39.0
DEFENSE AGENCIES/OSD	4.7	4.8	5.3
DEFENSE-WIDE	12.4	13.5	13.2
TOTAL	131.8	133.2	135.5

**FY 1980 DEPARTMENT OF DEFENSE BUDGET
 SCHEDULING OF BUDGET REQUESTS
 (TOA, \$ MILLIONS)**

	<u>DOD APPROPRIATIONS ACT</u>	<u>MIL CON/FAMILY HOUSING</u>	<u>GRAND TOTAL</u>
APPROPRIATIONS (TOA) REQUESTED WITH BUDGET TRANSMITTED IN JANUARY 1979	<u>129,508</u>	<u>3,756</u>	<u>133,264</u>
APPROPRIATIONS TO BE REQUESTED AT A LATER DATE, BUT INCLUDED IN DEFENSE BUDGET ESTIMATE:			
OCTOBER 1, 1979 CIVILIAN AND MILITARY PAY RAISES	(2,004)	(6)	(2,010)
FY 1980 WAGE BOARD RAISES	(161)	(4)	(165)
PROPOSED LEGISLATION:			
OFFICER PERS MANAGEMENT ACT	(23)		(23)
FAMILY SEPARATION ALLOWANCE	(13)		(13)
MILITARY TRAILER ALLOWANCE	(8)		(8)
QUARTERS ALLOWANCE NAVY PERSONNEL	(10)		(10)
PCS MILEAGE ALLOWANCE	(40)		(40)
DUAL COMPENSATION	(-30)		(-30)
ADMINISTRATIVE DUTY PAY	(-2)		(-2)
OFFICER UNIFORM MAINTENANCE ALLOWANCE	(-1)		(-1)
TOTAL APPROPRIATIONS TO BE REQUESTED LATER	<u>2,226</u>	<u>10</u>	<u>2,236</u>
TOTAL FY 1980 BUDGET ESTIMATE	131,734	3,766	135,500

**FY1980 DEPARTMENT OF DEFENSE BUDGET
CHRONOLOGY OF THE FY1979 BUDGET ESTIMATES
(\$ MILLIONS)**

	TOA			TOTAL	OUTLAYS
	TRANSMITTED TO CONGRESS	CONTIN-GENCIES			
FY1979 BUDGET (JANUARY 1978)	123,695	2,305		126,000	115,200
CONGRESSIONAL ACTION STATUS AFTER CONGRESSIONAL ACTION	-2,254	-		-2,254	-618
	121,441	2,305		123,746	114,582
SUPPLEMENTALS:					
PAY INCREASES	+1,849	-2,235		-386	-384
READINESS AND MODERNIZATION	+2,160	-		+2,160	+595
FACT-OF-LIFE INCREASES	+399	-16		+383	+339
ALL OTHER CHANGES	-1091	-54		-163	-3,232
TOTAL CHANGES SINCE CONGRESSIONAL ACTION	+4,299	-2,305		+1,994	-2,682
CURRENT FY1979 ESTIMATE	125,740	-		125,740	111,900

¹INCLUDES SHIFT OF \$96.5 MILLION FOR DCPA OUT OF THE DOD BUDGET AND \$15.2 MILLION TRANSFER TO DEPARTMENT OF LABOR PURSUANT TO EXECUTIVE ORDER 12086

²REESTIMATE OF \$ - 3,000 MILLION WAS INCLUDED IN THE JULY 1978 UPDATE.

FY 1980 DEPARTMENT OF DEFENSE BUDGET FY 1979 SUPPLEMENTS (\$ THOUSANDS)

PURPOSE	AMOUNT
PAY INCREASES	
CIVILIAN AND MILITARY PAY INCREASES, OCTOBER 1, 1978	(1,849,091)
WAGE BOARD PAY INCREASES	1,608,369
	240,722
RATE ADJUSTMENTS AND LEGISLATION	
FOREIGN CURRENCY ADJUSTMENT COSTS	(398,823)
	95,761
INCREASED SUBSISTENCE COSTS	
INCREASED BAQ AND PCS COSTS	77,600
INCREASED MANNING LEVELS (AIR FORCE RESERVE)	42,700
RETIRED PAY COST OF LIVING INCREASES	4,100
IMPACT OF OCTOBER 1, 1978 MILITARY PAY INCREASES	151,262
ON RETIRED PAY	14,400
SURVIVOR BENEFIT LEGISLATION (P.L. 95-397)	13,000
PROGRAM CHANGES	
STRATEGIC	(2,160,400)
READINESS	419,400
NON-NUCLEAR COMBAT	551,200
THEATER NUCLEAR FORCES	93,000
COMMUNICATIONS, COMMAND AND CONTROL	42,000
SHIPBUILDING AND CONVERSION	62,200
TECHNOLOGY BASE	834,700
OTHER	14,100
	143,800
TOTAL	4,408,314

LONG-RANGE FORECASTS AND PAY/PRICE ASSUMPTIONS

	FY 1979	FY 1980	FY 1981	FY 1982	FY 1983	FY 1984
TOA (\$ BILLIONS):						
MILITARY RETIRED PAY	10.3	11.5	12.6	13.7	14.7	15.7
OTHER MILITARY FUNCTIONS	115.4	124.0	133.1	142.0	152.1	162.0
TOTAL, CURRENT PRICES	125.7	135.5	145.7	155.7	166.8	177.7
TOTAL, CONSTANT (FY 1980) PRICES	133.2	135.5	138.4	141.5	145.9	150.5
PERCENT CHANGE	1.1%	1.7%	2.2%	2.2%	3.1%	3.1%
 OUTLAYS (\$ BILLIONS):						
MILITARY RETIRED PAY	10.3	11.4	12.6	13.7	14.7	15.7
OTHER MILITARY FUNCTIONS	101.6	111.3	121.1	131.2	140.8	150.0
TOTAL, CURRENT PRICES	111.9	122.7	133.7	144.9	155.5	165.7
TOTAL, CONSTANT (FY 1980) PRICES	119.1	122.7	126.4	130.5	134.4	138.4
PERCENT CHANGE	1.4%	3.1%	3.0%	3.2%	3.0%	3.0%
COMPOSITE PAY/PRICE ASSUMPTIONS (FY 1980 = 100)	94.0	100.0	105.8	111.1	115.7	119.7

PRESIDENT'S BUDGET - PAY AND INFLATION RATE ASSUMPTIONS

FY 1978 - FY 1984 ANNUAL PERCENTAGE CHANGE

<u>CATEGORY</u>	<u>1978 TO 1979</u>	<u>1979 TO 1980</u>	<u>1980 TO 1981</u>	<u>1981 TO 1982</u>	<u>1982 TO 1983</u>	<u>1983 TO 1984</u>
PAY:						
MILITARY AND GS	5.50	5.50	5.25	5.00	4.75	4.50
WAGE BOARD	6.49	4.24	4.51	5.10	4.85	4.60
MILITARY RETIRED PAY	8.74	7.86	6.38	5.52	4.47	3.46
INDUSTRY PURCHASES (NON-PAY)	<u>8.00</u>	<u>7.00</u>	<u>6.00</u>	<u>4.80</u>	<u>3.70</u>	<u>2.80</u>
COMPOSITE, DOD	7.08	6.40	5.78	4.98	4.18	3.46

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FY 1980 DEPARTMENT OF DEFENSE BUDGET

**TOTAL OBLIGATIONAL AUTHORITY, BUDGET AUTHORITY AND OUTLAYS
 (MILLIONS OF DOLLARS)**

FUNCTIONAL CLASSIFICATION	DIRECT BUDGET PLAN (TOA)					BUDGET AUTHORITY (BA)					OUTLAYS				
	FY 1978	FY 1979	FY 1980	FY 1978	FY 1979	FY 1980	FY 1978	FY 1979	FY 1980	FY 1978	FY 1979	FY 1980	FY 1978	FY 1979	FY 1980
MILITARY PERSONNEL	25,163	26,529	26,656	25,211	26,529	26,656	25,116	26,154	26,296	25,116	26,154	26,296	25,116	26,154	26,296
ACTIVE FORCES	2,021	2,154	2,231	2,034	2,154	2,231	1,959	2,066	2,151	1,959	2,066	2,151	1,959	2,066	2,151
RESERVE FORCES															
TOTAL - MILITARY PERSONNEL	27,184	28,683	28,887	27,246	28,683	28,887	27,075	28,220	28,447	27,075	28,220	28,447	27,075	28,220	28,447
RETIRED MILITARY PERSONNEL	9,173	10,319	11,452	9,180	10,319	11,452	9,171	10,281	11,435	9,171	10,281	11,435	9,171	10,281	11,435
OPERATION AND MAINTENANCE	34,902	36,085	40,222	34,732	36,085	40,222	33,578	35,905	38,690	33,578	35,905	38,690	33,578	35,905	38,690
PROCUREMENT	30,346	31,500	35,402	29,529	31,463	35,402	19,976	22,476	25,749	19,976	22,476	25,749	19,976	22,476	25,749
RESEARCH, DEVELOPMENT, TEST & EVAL	11,474	12,774	13,536	11,371	12,774	13,536	10,508	11,726	13,015	10,508	11,726	13,015	10,508	11,726	13,015
MILITARY CONSTRUCTION	1,660	2,608	2,158	1,641	2,498	2,158	1,932	1,854	1,951	1,932	1,854	1,951	1,932	1,854	1,951
FAMILY HOUSING & HOMEOWNERS ASSIST. PROG	1,382	1,657	1,596	1,346	1,623	1,575	1,405	1,441	1,493	1,405	1,441	1,493	1,405	1,441	1,493
SPECIAL FOREIGN CURRENCY PROGRAM	2	14	7	2	14	7	2	3	4	2	3	4	2	3	4
REVOLVING AND MANAGEMENT FUNDS	171	101	-	423	101	-	-429	339	130	-429	339	130	-429	339	130
OFFSETTING RECEIPTS	-	-	-	-149	-351	-437	-149	-351	-437	-149	-351	-437	-149	-351	-437
INTERFUND TRANSACTIONS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DEFENSE-WIDE CONTINGENCIES	-	-	2,236	-	-	2,236	-	-	2,215	-	-	2,215	-	-	2,215
TRUST FUNDS	-	-	-	12	11	11	-16	15	17	-16	15	17	-16	15	17
INTRAGOVERNMENTAL TRANSACTIONS	-	-	-	-11	-10	-10	-11	-10	-10	-11	-10	-10	-11	-10	-10
TOTAL - DEPARTMENT OF DEFENSE	116,494	125,740	135,500	115,322	125,209	135,041	103,042	111,900	122,700	103,042	111,900	122,700	103,042	111,900	122,700
SUMMARY BY COMPONENT															
DEPARTMENT OF THE ARMY	26,943	31,646	33,161	26,434	31,450	33,013	26,019	27,659	29,585	26,019	27,659	29,585	26,019	27,659	29,585
DEPARTMENT OF THE NAVY	39,639	41,530	43,303	39,499	41,441	43,236	33,524	36,868	38,839	33,524	36,868	38,839	33,524	36,868	38,839
DEPARTMENT OF THE AIR FORCE	33,118	35,427	38,382	32,595	35,237	38,254	29,217	31,468	34,229	29,217	31,468	34,229	29,217	31,468	34,229
DEFENSE AGENCIES/OSD	4,152	4,553	5,237	4,180	4,532	5,144	3,623	4,093	4,777	3,623	4,093	4,777	3,623	4,093	4,777
DEFENSE-WIDE CONTINGENCIES	10,642	12,584	13,161	10,614	12,549	13,158	10,659	11,813	13,056	10,659	11,813	13,056	10,659	11,813	13,056
TOTAL - DEPARTMENT OF DEFENSE	116,494	125,740	135,500	115,322	125,209	135,041	103,042	111,900	122,700	103,042	111,900	122,700	103,042	111,900	122,700

FY 1980 DEPARTMENT OF DEFENSE BUDGET
 DIRECT BUDGET PLAN (TOA), BUDGET AUTHORITY, AND OUTLAYS
 (MILLIONS OF DOLLARS)

FUNCTIONAL CLASSIFICATION	DEPT. OF DEFENSE - TOTAL			DEPT. OF THE ARMY			DEPT. OF THE NAVY			DEPT. OF THE AIR FORCE			DEF. AGS./OSD:UNDIST		
	FY 1976	FY 1979	FY 1980	FY 1976	FY 1979	FY 1980	FY 1976	FY 1979	FY 1980	FY 1976	FY 1979	FY 1980	FY 1976	FY 1979	FY 1980
MILITARY PERSONNEL	25,163	26,529	26,658	9,176	9,695	9,755	6,438	6,926	9,028	7,547	7,908	7,876	-	-	-
ACTIVE FORCES	2,021	2,154	2,231	1,299	1,367	1,472	305	321	271	417	463	468	-	-	-
RESERVE FORCES	27,142	24,375	24,427	7,877	8,328	8,283	6,133	6,605	8,757	7,130	7,445	7,408	-	-	-
TOTAL - MILITARY PERSONNEL	52,305	50,904	51,085	17,053	18,023	18,038	12,571	13,531	17,785	14,677	15,353	15,284	-	-	-
RETIRED MILITARY PERSONNEL	9,173	10,319	11,452	9,663	10,603	11,117	12,019	13,030	13,860	9,914	10,751	11,542	9,173	10,319	11,452
OPERATION AND MAINTENANCE	34,902	36,085	40,222	9,663	10,603	11,117	12,019	13,030	13,860	9,914	10,751	11,542	3,066	3,700	3,703
PROCUREMENT	10,560	12,454	12,845	659	950	946	3,529	4,359	3,968	6,372	7,145	7,931	-	-	-
AIRCRAFT	4,320	3,667	5,109	563	765	1,251	1,960	1,588	1,569	1,797	1,514	2,269	-	-	-
MISSILES	5,780	4,594	6,174	-	-	-	5,780	4,594	6,174	-	-	-	-	-	-
SHIPS	1,699	1,980	2,346	1,409	1,511	1,689	490	469	457	-	-	-	-	-	-
COMBAT VEHICLES, WEAPONS & TORPEDOES	2,233	2,345	2,247	1,251	1,273	1,115	577	614	640	405	456	492	-	-	-
ORDNANCE, VEHICLES & RELATED EQUIPMENT	2,145	2,834	2,895	706	1,093	1,130	937	1,192	1,146	502	549	619	-	-	-
ELECTRONICS & COMMUNICATIONS	3,408	3,428	3,736	760	634	792	959	1,120	1,141	1,361	1,399	1,559	328	275	294
OTHER PROCUREMENT	30,346	31,500	35,402	5,347	6,226	7,123	14,233	13,936	15,094	10,436	11,063	12,691	328	275	294
TOTAL - PROCUREMENT	1,799	2,027	2,312	392	432	491	526	566	650	449	485	534	432	542	638
RESEARCH, DEVELOPMENT, TEST & EVAL	502	513	636	109	96	133	136	161	231	237	256	271	-	-	-
TECHNOLOGY BASE	2,329	2,383	2,411	216	231	230	611	533	433	1,479	1,596	1,688	23	22	60
ADVANCED TECHNOLOGY BASE	4,844	5,310	5,261	1,311	1,463	1,539	2,291	2,708	2,578	1,576	1,136	1,136	248	297	328
STRATEGIC PROGRAMS	359	672	810	14	16	30	70	70	86	76	86	89	76	63	105
INTELLIGENCE & COMMUNICATIONS	1,641	1,666	2,016	376	431	505	400	470	518	760	861	889	76	63	105
PROGRAM/WIDE MANAGEMENT AND SUPPORT	11,474	12,774	13,556	2,416	2,709	2,927	4,054	4,522	4,484	4,222	4,598	5,005	779	945	1,120
TOTAL - RESEARCH, DEVELOP., TEST & EVAL	1,860	2,608	2,158	716	972	767	558	793	567	849	618	580	39	227	244
MILITARY CONSTRUCTION	1,382	1,657	1,598	-	-	-	-	-	-	-	-	-	1,382	1,657	1,598
FAMILY HOUSING & HOMEOWNERS ASSIST. PROG	171	101	-	100	74	-	32	-	-	35	27	-	2	14	7
SPECIAL FOREIGN CURRENCY PROGRAM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
REVOLVING AND MANAGEMENT FUNDS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DEFENSE-WIDE CONTINGENCIES	-	-	2,236	-	-	-	-	-	-	-	-	-	-	-	2,236
TOA TOTAL - DEPARTMENT OF DEFENSE	116,494	125,740	135,500	28,943	31,646	33,161	39,639	41,530	43,303	33,116	35,427	36,362	14,784	17,137	20,654
FINANCING ADJUSTMENTS	-1,024	-181	-23	-348	-83	-	-121	-10	-	-492	-74	-	-64	-44	-23
TRUST FUNDS & OFFSETTING RECEIPTS	-148	-350	-436	-162	-143	-148	-19	-79	-67	-31	-115	-128	64	-12	-93
BUDGET AUTHORITY (BA)	115,322	125,209	135,041	28,434	31,450	33,013	39,499	41,441	43,236	32,595	35,237	36,254	14,784	17,081	20,538
OUTLAYS	103,042	111,900	122,700	26,019	27,859	29,585	33,524	36,668	38,639	29,217	31,466	34,229	14,282	16,906	20,048

APPENDIX D: ACRONYMS

AAH: Advanced Attack Helicopter
AAW: Anti-Air Warfare
ABM: Anti-Ballistic Missile
ACDA: Arms Control and Disarmament Agency
ADP: Automated Data Processing
ADM: Atomic Demolition Munitions
AE: Assault Echelon
AECB: Arms Export Control Board
AFSATCOM: Air Force Satellite Communications
AGM: Air-to-Ground Missile
AID: Agency for International Development
ALCM: Air-Launched Cruise Missile
ALCS: Airborne Launch Control System
ALOC: Air Line of Communication
AMRAAM: Advanced Medium-Range Air-to-Air Missile
AMST: Advanced Medium STOL (Short take-off and landing) Transport
ARG: Atlantic Fleet Amphibious Ready Group
ASAT: Anti-Satellite
ASH: Advanced Scout Helicopter
ASW: Anti-Submarine Warfare
AVF: All-Volunteer Force
AWACS: Airborne Warning and Control System
BETA: Battlefield Exploitation and Target Acquisition
BMD: Ballistic Missile Defense
BMEWS: Ballistic Missile Early Warning System
BJIC: Back-up Intercept Control
C³: Command, Control and Communications
C³I: Command, Control, Communications, and Intelligence
CAT: Conventional Arms Transfer
CCP: Consolidated Cryptologic Program
CD: Civil Defense
CFV: Cavalry Fighting Vehicle
CINCEUR: Commander-in-Chief, European Command
CINCLANT: Commander-in-Chief, Atlantic
CINCPAC: Commander-in-Chief, Pacific Command
CINCSAC: Commander-in-Chief, Strategic Air Command
COB: Collocated Operating Bases
COD: Carrier Onboard Delivery
COLA: Cost-of-Living Allowance
CONUS: Continental United States
CRAF: Civil Reserve Air Fleet
CV: Aircraft Carrier
CVN: Aircraft Carrier, Nuclear-powered
CVV: Aircraft Carrier, Medium-sized
CW: Chemical Warfare
DARPA: Defense Advanced Research Projects
DDG: Guided Missile Destroyer

DEW: Distant Early Warning (Line)
 DMZ: Demilitarized Zone
 DoD: Department of Defense
 DSARC: Defense Systems Acquisition Review Council
 DSB: Defense Science Board
 DSCS: Defense Satellite Communication System
 ECIP: Energy Conservation Investment Program
 ER: Enhanced Radiation
 FEBA: Forward Edge of the Battle Area
 FEMA: Federal Emergency Management Agency
 FFG: Guided Missile Frigate
 FMS: Foreign Military Sales
 FRS: Fleet Readiness Squadron
 FYDP: Five-Year Defense Program
 GDIP: General Defense Intelligence Program
 GLCM: Ground-Launched Cruise Missile
 GMF: Ground Mobile Forces
 GNP: Gross National Product
 GSA: General Services Administration
 GSFG: Group of Soviet Forces, Germany
 HARM: High Speed Anti-Radiation Missile
 ICBM: Intercontinental Ballistic Missile
 IFF: Identification, Friend or Foe
 IFV: Infantry Fighting Vehicle
 IMET: International Military Education and Training Program
 IONDS: Integrated Operational Nuclear Detection System
 IRBM: Intermediate-Range Ballistic Missile
 JCS: Joint Chiefs of Staff
 JINTACCS: Joint Interoperability of Tactical Command and Control
 JSS: Joint Surveillance System
 JTIDS: Joint Tactical Information Distribution System
 LAMPS: Light Airborne Multipurpose System
 LCAC: Landing Craft, Air Cushion
 LHA: Amphibious Assault Ship
 LOC: Line of Communication
 LSD: Landing Ship, Dock
 LTDP: Long-Term Defense Program
 MAC: Military Airlift Command
 MAF: Marine Amphibious Force
 MAP: Military Assistance Program or Multiple Aimpoint Basing
 MAU: Marine Amphibious Unit
 MBFR: Mutual and Balanced Force Reductions
 MCM: Mine Countermeasures
 MIG: Mikoyan Aircraft
 MIRV: Multiple Independently Targetable Reentry Vehicle
 MRBM: Medium-Range Ballistic Missile
 MSC: Military Sealift Command
 MSO: Ocean-Going Minesweeper

M-X: Missile, Experimental
NATO: North Atlantic Treaty Organization
NEACP: National Emergency Airborne Command Post
NFCS: Nuclear Forces Communications Satellite
NFIP: National Foreign Intelligence Program
NMCS: National Military Command System
NORAD: North American Air Defense Command
NSC: National Security Council
OASD: Office, Assistant Secretary of Defense
OJCS: Office, Joint Chiefs of Staff
OSD: Office, Secretary of Defense
OTH: Over-the-Horizon
PAL: Permissive Action Link
PMR: Primary Mission Readiness
PRC: People's Republic of China
PAVE
PAWS: Phased-Array Radars
PARCS: Perimeter Acquisition Radar Characterization System
PKO: Peace-Keeping Operation
POMCUS: Prepositioned Overseas Materiel Configured in Unit Sets
R&D: Research and Development
RDT&E: Research, Development, Test and Evaluation
RFM: Reserve Forces Modernization
R/S/I: Rationalization/Standardization/Interoperability
SAC: Strategic Air Command
SACDIN: SAC Digital Network
SACEUR: Supreme Allied Commander Europe
SACLANT: Supreme Allied Commander, Atlantic
SAGE: Semi-Automatic Ground Environment
SALT: Strategic Arms Limitation Talks
SIGINT: Signals Intelligence
SIOP: Single Integrated Operational Plan
SLBM: Submarine-Launched Ballistic Missile
SLOC: Sea Line of Communication
SNM: Special Nuclear Material
SRAM: Short-Range Attack Missile
SSBN: Ballistic Missile Submarine, Nuclear-powered
SSN: Submarine, Nuclear-powered
SURTASS: Surveillance Towed Array Sensor System
TAC: Tactical Air Command
TNF: Theater Nuclear Forces
TOA: Total Obligational Authority
USAFE: United States Air Force Europe
USAREUR: United States Army Europe
VSTOL: Vertical/Short Take-off and Landing
WRS: War Reserve Stocks
WMCCS: Worldwide Military Command and Control System