REPORT OF SECRETARY OF DEFENSE

HAROLD BROWN

TO THE CONGRESS

ON THE

FY 1979 BUDGET, FY 1980 AUTHORIZATION REQUEST
AND FY 1979-1983 DEFENSE PROGRAMS

JANUARY 23, 1978

NATIONAL SECURITY INFORMATION
Unauthorized Disclosure
Subject to Criminal Sanctions

247

CLASSIFIED BY The Secretary of Defense
EXEMPT FROM GENERAL DECLASSIFICATION
SCHEDULE, E.O. 11652, EXEMPTION CATEGORY 3,
DECLASSIFY ON 31 DECEMBER 1994

FORMERLY RESTRICTED DATA

SECTION III

DEFENSE POLICY

The U.S. defense posture is determined most importantly by the international context and our national security objectives. These factors delineate our vital interests and the critical commitments -- informal as well as formal -- we have made. They permit us to identify major forces potentially adversary to our programs for international security, peace, and stability. They specify the major trends -- in both the capabilities and the policies of other nations -- with which U.S. national security policies must be concerned. They tell us which of those nations we can best count on to share the burdens of collective security. They offer overall guidance as to the general magnitude of the defense task we face and the functions our defense will be expected to perform in the achievement of U.S. objectives.

Of these functions, three deserve particular emphasis because of their impact on defense planning and policy. The first function is to provide the foundation of strength and deterrence so necessary to the effectiveness of our other instruments of policy. The second function is to provide specific support to all our national security objectives. As one example of this second function, it is imperative that our defense plans and policies be compatible with our efforts to maintain national security through arms control. It is equally important that we adapt our defense posture and deployments to such general policy requirements as the maintenance of a powerful naval presence in the eastern Mediterranean, even though these deployments may not be optimal from some "strictly military" standpoints -- for example, from the standpoint of the posture needed to fight a general war. The third function is, of course, the conduct of effective and efficient military operations in support of national objectives. If and when such operations are required, it is particularly important that military force support rather than drive policy. At the same time, we should recognize that we are not able to calculate precisely what force is required to achieve a result independent of knowledge about enemy action.

In the light of these functions, our posture must have the flexibility and responsiveness to follow Presidential direction. The Department of Defense must not be committed to a single, inflexible war plan -- it must not have only a particular set-piece battle, campaign, or war in mind.

While these functions place important constraints on defense planning, they do not dictate a particular defense posture. In order to specify a force structure, deployments, and major defense programs, two

further steps are necessary. First, major contingencies and their implications for force structure and deployments have to be analyzed. Second, programmatic options have to be developed and compared on the basis of cost and effectiveness.

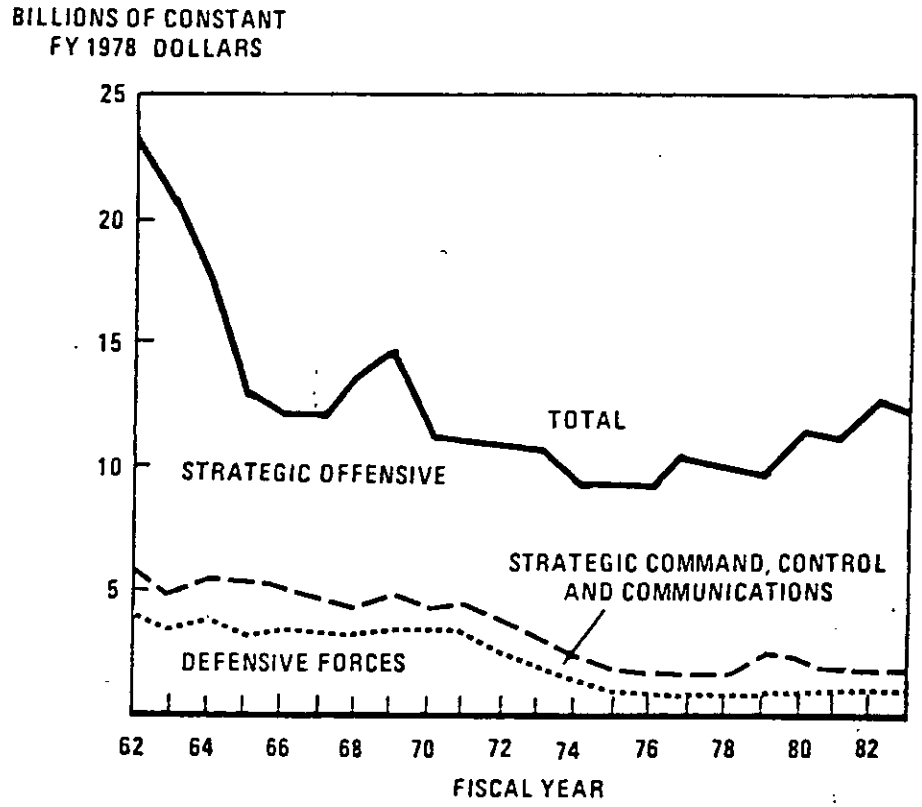
This section discusses the basis for our defense policies and general posture. It focuses on our strategic nuclear, theater nuclear, and conventional requirements, but it also deals with our needs for security assistance, intelligence, command-control-communications, and defense research, development, and production.

I. POLICY FOR THE STRATEGIC NUCLEAR FORCES

The Carter administration proposes, in the defense budget for FY 1979, to allocate TOA of $9.8 billion to its strategic nuclear program. The chart below shows the trend in TOA for the strategic nuclear forces since FY 1964. It is expressed in constant dollars, and is broken down according to offense, active defense, and surveillance and control.

Chart III-1

STRATEGIC FORCES BUDGET TREND



The requested appropriations will permit us, in FY 1979, to retain essentially the same level of strategic forces as we have programmed for FY 1978; development of the Mark 12A warhead for the MINUTEMAN III will not be completed until the end of the fiscal year. We expect that three major new systems will enter the force in FY 1980: the air-launched cruise missile (ALCM), the C-4 (TRIDENT I) missile backfitted into the POSEIDON submarine, and the TRIDENT submarine with the C-4 missile.

The FY 1979 ICBM force will consist of 54 TITANs and 1,000 MINUTEMAN, of which 550 will be multiple independently targetable re-entry vehicle (MIRVed) MINUTEMAN IIIs and 450 single-warhead MINUTEMAN IIs. The SLBM force will comprise 41 submarines, equipped with 160 POLARIS A-3 multiple re-entry vehicle (MRVed) missiles and 496 POSEIDON (MIRVed) missiles. The bomber leg of the TRIAD will be made up of 316 B-52 unit equipment heavy bombers, 65 FB-111 medium bombers, and 615 unit equipment KC-135 tanker aircraft [redacted] Approximately 30 percent of the total bomber/tanker force will be maintained on ground-alert.

Active strategic defenses will depend on six squadrons of active duty, ten squadrons of National Guard manned interceptors, and six AWACS (Airborne Warning and Control System) aircraft assigned to CONUS defense. In case of an emergency, CONUS-based tactical fighter squadrons and additional CONUS-based AWACS aircraft could be used to augment the dedicated anti-bomber defenses. All strategic surface-to-air missiles (SAMs) have been phased out of our continental defense system, although we still deploy SAMs from the general purpose forces in Flordia and Alaska. We have essentially closed down our one anti-ballistic missile (ABM) site. Its Perimeter Acquisition Radar will remain operational as a missile warning and attack characterization sensor, but the rest of the facility -- which was deployed to defend a MINUTEMAN wing -- has been deactivated and dismantled.

Major surveillance and early warning will be based on the [redacted] the Ballistic Missile Early Warning System (BMEWS), the Space Detection and Tracking System (SPADATS), the soon-to-be operational PAVE PAWS and FPS-85 (operational) anti-SLBM phased array radars, and the anti-bomber Distant Early Warning (DEW) line, the mid-Canada line, and CONUS-based radars. Over-the-Horizon (OTH) radar remains a prototype development effort. A modest civil defense effort -- consisting primarily of crisis relocation planning, shelter surveys, improved communications and emergency planning -- will be funded as well.

A. Objectives

The general functions of the strategic nuclear forces are by now well established. The possibility of a strategic nuclear attack on the

United States itself is very low. But since the consequences of such an attack would be so catastrophic, we must maintain a powerful strategic force to deter it. Because of our unique role in the collective security system of the West, we have a special obligation to deter nuclear attacks on our allies, on other nations the security of which is deemed essential to the United States, or on our forces overseas. In addition, the United States and its allies must be free from any coercion and intimidation that could result from perceptions of an overall imbalance or particular asymmetries in nuclear forces. The strategic forces, in conjunction with U.S. and allied theater nuclear and conventional forces, also have a role to play in deterring non-nuclear attacks -- particularly large-scale conventional attacks on NATO and our Asian allies.

The Soviets have developed, and are fully capable of maintaining, powerful strategic forces of their own. As a consequence, we must also acknowledge that unless one side or the other is careless -- and allows a major imbalance to develop -- or makes serious miscalculations, a condition of mutual deterrence and essential equivalence is likely to prevail in the future, just as it does today. As long as strategic nuclear forces exist in the world, this is an acceptable situation, the most acceptable available; in fact, it is in everyone's interest to accept it. We want mutual deterrence to be so stable that it cannot be upset in a crisis. We want it to be so well designed that neither side will be tempted to try to upset it over the longer term. These are the two essential types of strategic stability that we seek.

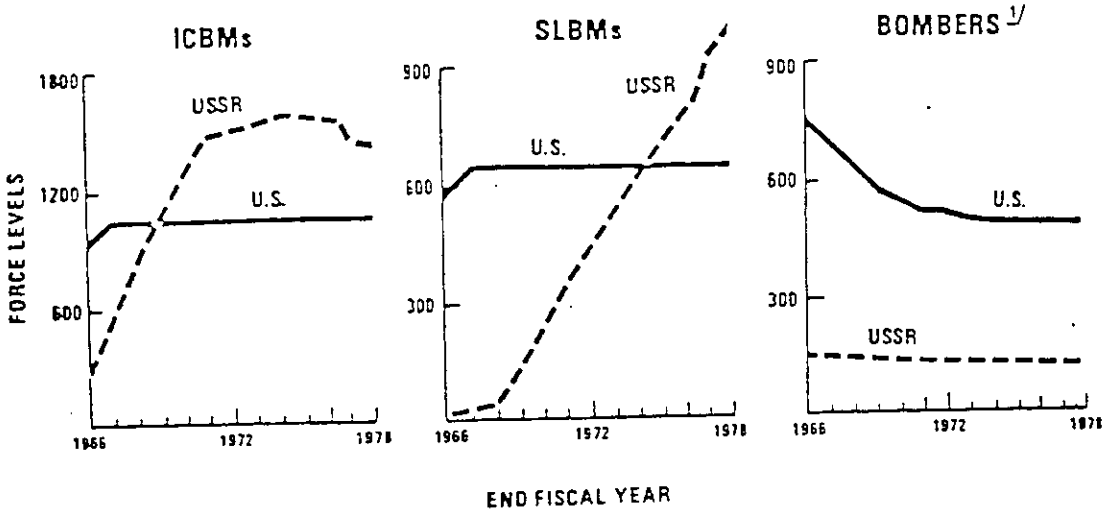
We seek these objectives through a combination of specific, equitable, and verifiable arms control agreements and unilateral force modernization. Whenever possible, we prefer to reach our goals through arms control agreements. The soundness of both strategic force modernization and arms control agreements will be evaluated in the light of these objectives.

B. Soviet Capabilities

The U.S. strategic nuclear posture required to perform these functions is shaped in large measure by the nuclear capabilities of the Soviet Union. These capabilities have undergone a considerable transformation during the last 12 years, as shown in Chart III-2. In FY 1966, the Soviets deployed only 224 ICBMs; we now estimate that force at [redacted] launchers. Soviet SLBM launchers stood at 29 in FY 1966; today, the number is [redacted] During this same period, the Soviet BISON/BEAR force has remained relatively stable.

Chart III-2

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



1/ FB-111 and BACKFIRE are excluded.

The Soviets have built their missile forces to the limits of the Interim Offensive Agreement of 1972, which -- even though it expired on October 3, 1977 -- each side has said it would respect (if the other does) until a new SALT agreement replaces it. The Interim Agreement on Strategic Offensive Arms, it will be recalled, permits the Soviets a strategic missile force of 950 SLBMs in 62 modern submarines and, in effect, some [redacted] ICBM launchers. As their SLBM force has expanded over the threshold of 740 launchers, the Soviets have been deactivating their older SS-7 and SS-8 ICBM sites as required by the Interim Offensive Agreement.

We are uncertain as to the future course the Soviets might take with respect to their strategic offensive forces in default of a SALT II agreement. However, there is no doubt about their ability to deploy more missiles and bombers than we believe they are programming at the present time. Indeed, it is estimated that, without a SALT II agreement, the Soviets could have over 3,000 strategic delivery vehicles by 1985.

Soviet defenses have not changed appreciably during the past year, although we now know somewhat more about certain aspects of them than we did before. The Moscow ABM system -- which could reach a considerable area around Moscow -- still consists of the GALOSH missile and 64

launchers, although the ABM Treaty permits its expansion to 100 launchers. Anti-bomber defenses continue to be based on roughly [redacted] surface-to-air missile launchers [redacted] and on 2,600 manned interceptors.

We believe that the primary purpose of the BACKFIRE is to perform peripheral attack, theater, and naval missions, although it has some intercontinental capability, and can reach portions of the United States on one-way, high-altitude, unrefueled missions. Since 1974, the BACKFIRE has been in production at a rate of two to 2.5 aircraft a month, [redacted]

Total Soviet force loadings (weapons that can be carried by strategic missiles and bombers) have risen from around 450 in 1965 to approximately [redacted] at the present time.

1. Current Deployments

The U.S. and Soviet strategic postures as of January 1, 1978 are shown in Table III-1. Also shown are estimates of the two postures at the end of FY 1978, assuming no further arms control constraints.

Table III-1

U.S. AND USSR STRATEGIC FORCE LEVELS

	1 Jan 1978		End FY 1978	
	U.S.	USSR	U.S.	USSR
Offensive				
Operational ICBM Launchers 1/ 2/	1054	[redacted]	1054	[redacted]
Operational SLBM Launchers 1/ 2/ 3/	656		656	
Long-Range Bombers 4/				
Operational 5/	345		347	
Other Bombers 6/	225	0	225	0
Variants 7/	0	120	0	120
Force Loadings 8/				
Weapons	[redacted]		[redacted]	4500
Defensive 9/				
Air Defense				
Surveillance Radars	57		57	
Interceptors 10/	324		330	
SAM Launchers 11/	-		-	
ABM Defense				
Launchers 2/	-	64	-	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 in FY 1977 and FY 1978; for the USSR: [redacted] Backfire [redacted]

5/ Includes deployed, strike-configured aircraft only.

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

7/ Includes, for USSR, 34 Bison tankers, 35 Bear ASW aircraft, and 51 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 numbers represent Total Active Inventory (TAI).

11/ These launchers accommodate about [redacted] SAM interceptors. Some of the launchers have multiple rails.

The Soviet civil defense program, which underwent significant shifts of emphasis in the late 1960s and early 1970s, is more extensive than was estimated a year ago. The provision of shelters is a key element in the program.

Blast shelters are available for the top national leadership in cities and at relocation sites outside cities. Hard shelters are also available for the rest of the leadership down to the city level.

Shelters for essential personnel, including key industrial workers, have been given emphasis in recent years. Most of the blast shelters estimated to have been built since 1968 are at industrial, administrative, and institutional facilities. We have only limited information about the adequacy of supplies and life-support systems for the shelters.

Evacuation of non-essential personnel (defined as about 70 percent of the urban population) remains the chief strategy for protecting the general population.

As the country has developed, the Soviets have expanded and modernized existing industries. They have also constructed new plants in both existing industrial areas and developing regions such as Siberia. There is only limited evidence of Soviet hardening of industry to any significant degree. Soviet plans do, however, provide for crisis implementation of hasty hardening and rapid shutdown methods for protecting critical facilities and equipment. Overall, there has been no significant reduction in the vulnerability of Soviet industry to nuclear attack.

The table below shows the correlation among cities, population, and industrial capacity as it was in 1970. The distribution has not changed appreciably since then. Although some new industrial plants are being constructed away from the major urban areas, the lion's share of new capital investment -- more than two-thirds in the latest 5-year plan -- is related to the modernization and expansion of existing Soviet plants. Furthermore, new capital investment in existing facilities is projected to increase at a faster rate than investment in new and somewhat dispersed plants. Thus, what may appear as a modest increase in the proportion of dispersed industry is more a manifestation of what, earlier, was a high concentration of industry rather than a concerted effort to disperse now.

Soviet population has become more concentrated during the past decade. The urban population has increased by about 29 percent, while the rural population has declined by 10.5 percent. Total population has increased by 11 percent.

Table III-2

Cumulative Percentage Distribution of
Soviet Population and Industrial Capacity

Number of Cities	1970 Population	1970 Industrial Capacity
10	8.3	25.0
50	20.0	40.0
100	25.0	50.0
200	34.0	62.0
400	40.0	72.0
1,000	47.0	82.0

I have already made public my assessment that the Soviets now have a limited, operational anti-satellite (ASAT) capability. This judgment is based in part on the eight tests the Soviets have run against target vehicles since they resumed their ASAT program in 1976. [redacted]

2. Force Improvements

The Soviets are not only maintaining these large capabilities; they are also modernizing them and developing a number of systems for possible future deployment. All of these activities, it should be added, are -- like our own modernization programs -- taking place within the limits set by the 1972 SALT agreements.

a. Intercontinental Ballistic Missiles (ICBMs)

The deployment of fourth-generation ICBMs -- the SS-17, SS-18, and SS-19 -- continues at a rate of approximately 125 a year. There now are [redacted] SS-18 launchers converted from SS-9 launchers, along with [redacted] SS-17, and [redacted] SS-19 launchers converted from SS-11 launchers. All three missiles can carry either high-yield single warheads or multiple independent reentry vehicles (MIRVs). The SS-17 and SS-18 are designed for cold launch; the SS-19 for hot launch. In a cold launch, the missile is "popped out" of its silo by a gas generator before the main booster motors are fired. As a result, the silo is not heavily damaged and could be reloaded, [redacted] A cold launch also allows the firing of a larger throw-weight missile from a given silo. [redacted]

TABLE III-3

The Soviets have essentially completed development of a fourth ICBM -- the [redacted] -- which we believe to be intended as a land-mobile system, although it can also be placed in silos. It is a solid-fuel, three-stage missile with a post-boost vehicle (PBV). However, it currently carries a single warhead.

In our judgment, the mobile SS-20 intermediate range ballistic missile (IRBM), which consists of the first two stages of the [redacted] is already being deployed. We estimate that it has a range of at least [redacted] kilometers and can carry three MIRVs to that distance. We estimate that it will replace or augment the current force of [redacted] medium range ballistic missile (MRBM) and IRBM launchers, and that, with a successful multiple refire capability, it could provide roughly three times the number of warheads of the older force.

In addition, the Soviets have a fifth generation of ICBMs in development, estimated to consist of [redacted] missiles [redacted] Flight testing of one or two of these missiles could begin at any time, with the others following by the early 1980s.

b. Submarine-Launched Ballistic Missiles (SLBMs)

The Soviet SLBM force continues to undergo both expansion and modernization. Construction of the YANKEE-class submarine has stopped at 34 units and 540 tubes. However, we believe that a new solid-fuel missile with a post-boost vehicle, greater accuracy, and a range [redacted] the SS-NX-17 -- may be back-fitted into some or all of the YANKEES. To date, only one unit has been so fitted. [redacted]

The Soviets now have a total of [redacted] DELTA submarines [redacted] The DELTA Is and IIs carry the SS-N-8, a single-warhead missile with a range of at least [redacted] kilometers [redacted] Both the SS-N-8 and the SS-NX-18 permit the Soviets to cover targets in the United States from patrol areas as distant as the Barents Sea and the waters of the North Pacific.

[redacted] With the SS-N-8, the Soviets already have a system of greater range than TRIDENT I.

c. Long-Range Bombers

The Soviet heavy bomber capability continues to rest principally in the small and aging BISON-BEAR force consisting of [redacted] turboprop BEARs and [redacted] BISONs. However, we now expect to see the first prototype of a new modern heavy bomber in the near future. If deployed, this aircraft would presumably replace the BISONs and BEARs as the backbone of the Soviet intercontinental bomber force.

The BACKFIRE bomber is being deployed in Soviet Long-Range Aviation and Naval Aviation units at a rate [redacted]

Both the BEAR and BACKFIRE can carry air-launched cruise missiles with ranges of about 600 kilometers. There is no current evidence that the Soviets have developed a cruise missile comparable to our ALCM, although we believe they could do so within the next five-to-ten years.

d. Active Defenses

The Soviets continue to adhere to the terms of the ABM Treaty. As permitted by that treaty, they are funding a very active anti-ballistic missile (ABM) research and development program. [redacted]

Since the large Soviet anti-bomber defense system continues to be vulnerable to low-altitude penetration, the Soviets are making short-run efforts to improve detection and tracking, principally by elevating radars so as to improve their line-of-sight against low-flying objects. The Soviets have also deployed and continue to modernize small numbers of the MOSS aircraft for airborne early warning, and continue to modernize their manned interceptor force with newer FLOGGER B (MIG-23) and FOXBAT A (MIG-25) aircraft.

The main long-run effort is likely to go into the development of a true look-down radar and the shoot-down capability to go with it. Such a combined capability could become operational as early as the early 1980s, although it is more likely to take place later. In addition, work is proceeding on a new surface-to-air missile. [redacted]

The Soviet anti-submarine warfare capability is evolutionary in character. Each succeeding platform and sensor tends to be more capable than its predecessor. The main emphasis is on ASW against the SSBNs of the United States, with the VICTOR-class attack submarine (SSN) constituting the most capable ASW platform. As yet, however, neither the VICTOR nor other Soviet ASW systems represent a serious threat to our nuclear powered ballistic missile submarines (SSBNs).

e. Passive Defenses

The objectives of the continuing Soviet civil defense program -- which may absorb one percent of the annual defense budget, and involve [redacted] full-time personnel [redacted]

[redacted] -- appear to be: continuity of centralized government and control through protection of the political and military leadership; maintenance of essential economic operations through protection of key workers, of some food supplies, and essential equipment; protection of the majority of the population by means of shelters in basements and subways, but mostly by evacuation from major urban centers.

C. PRC Capabilities

The strategic nuclear programs of the People's Republic of China have continued to develop at a slow pace. We estimate that the PRC now has in operational status [redacted] liquid-fuel MRBMs [redacted] liquid-fuel IRBMs [redacted] TU-16 medium bombers with operational radii of around 3,000 kilometers. [redacted]

Chart III-3

[redacted]

A liquid-fuel ICBM [redacted] has been used successfully in the PRC satellite program; at least two such missiles could be deployed by 1980.

As has been the case for some years, the PRC possesses one G-class diesel submarine with missile launching tubes, but without missiles. We believe, however, that work continues on the development of a nuclear-powered submarine and the missiles to go with it.

In December, 1970, the PRC launched the HAN-class nuclear-powered attack submarine, believed to be the prototype to develop the full hull form and propulsion system for future nuclear ballistic missile and attack submarines [redacted]

The PRC has continued its nuclear testing program. During FY 1977, two atmospheric [redacted] tests were conducted.

D. Contingencies

At the present time and for the foreseeable future, only the strategic nuclear forces of the Soviet Union constitute a potential threat to the United States and its allies. However, the strategic missiles of the PRC are now capable of reaching U.S. allies and bases in the Western Pacific.

It is extremely difficult to believe that the Soviets would ever seriously consider using these forces, and it is even more difficult to believe that they would contemplate any nuclear employment except in the gravest of crises. Nonetheless, it is a characteristic of the ballistic missiles in the strategic forces that they can strike with very little warning, and (as time goes by) with increasing accuracy, against a wide range of targets. As a consequence, we have been obliged to make the contingency of a Soviet surprise attack on our strategic forces the fundamental test of the adequacy of those forces and the main basis for our strategic nuclear planning.

With the expansion of the Soviet strategic offensive forces and the advances in Soviet command-control-communications (C^3), we have had to take several other possibilities into account as well. The Soviets, among other options, could avoid attacking our main population centers. They could withhold some of their offensive capabilities for follow-on strikes. They could attack a wide range of military and economic targets in addition to our strategic forces. They could even use their forces quite selectively against a small number of targets. In short, the Soviets are acquiring capabilities that will give their nuclear

forces some of the flexibility that we have associated previously with only the more traditional military capabilities. All of these characteristics of flexibility are increasingly present in our forces as well.

None of this potential flexibility changes my view that a full-scale thermonuclear exchange would be an unprecedented disaster for the Soviet Union as well as for the United States. Nor is it at all clear that an initial use of nuclear weapons -- however selectively they might be targeted -- could be kept from escalating to a full-scale thermonuclear exchange, especially if command-control centers were brought under attack. The odds are high, whether the weapons were used against tactical or strategic targets, that control would be lost on both sides and the exchange would become unconstrained. Should such an escalation occur, it is certain that the resulting fatalities would run into the scores of millions.

E. Credible Deterrence

What counts in deterrence, however, is not only what we may believe, but also what Soviet leaders may believe. Unfortunately, we are quite uncertain about those beliefs.

An event that we may consider virtually certain, they may rank as very low in probability. What we may assume to be quite sufficient as a deterrent, they may regard as quite inadequate for themselves. What we may hope is credible as an employment policy, they may interpret as a bluff.

These kinds of uncertainties leave us with only one sound basis on which to design the U.S. strategic deterrent forces. They have to be made militarily effective, to ensure that the Soviets could never calculate the costs of a nuclear exchange as worth the risk. That is to say, we have to plan our strategic forces on the basis of two assumptions: first, that deterrence might fail; and second, that our forces must be given the capability to frustrate any ambition that an enemy might attempt to realize with his strategic nuclear forces.

In other words, we cannot afford to make a complete distinction between deterrent forces and what are so awkwardly called war-fighting forces. Nor should we continue to plan the force structure on one basis and our employment policies on another -- as we could when Soviet strategic forces were more modest. Only if we have the capability to respond realistically and effectively to an attack at a variety of levels can we achieve essential equivalence and have the confidence necessary to a credible deterrent. Credibility cannot be maintained, especially in a crisis, with a combination of inflexible forces (however destructive) and a purely retaliatory counter-urban/industrial strategy that frightens us as much as the opponent.

F. The Conditions of Deterrence

The conditions of credible deterrence follow from the need to make our strategic nuclear forces effective no matter how deterrence might fail or how an enemy might attack.

1. Survivability and Control

As has been recognized for many years, a deterrent will not be credible if it can be knocked out by an enemy first-strike. Nor should a strategic deterrent invite an escalatory response to a limited attack. A vulnerable force could provide just such an incentive. Accordingly, whatever our employment policy for the strategic forces, we must ensure that, overall, our strategic forces can survive a full-scale surprise attack in sufficient numbers and characteristics to penetrate enemy defenses and destroy their designated targets.

Our forces must also be -- and they are -- under sufficiently tight control so that they cannot be triggered by accidents, false alarms, or unauthorized acts. We want to be capable at all times of responses that are deliberate, controlled, and in precise compliance with the directives of the President. It is not our policy to limit his choices to a single option, and they are not so limited.

2. Assured Destruction

One of the responses that must surely be available to the President is what has been called assured destruction. It is essential that we retain the capability at all times to inflict an unacceptable level of damage on the Soviet Union, including destruction of a minimum of 200 major Soviet cities. However, such destruction must not be automatic, our only choice, or independent of an enemy's attack. Indeed, it is at least conceivable that the mission of assured destruction would not have to be executed at all in the event that deterrence failed. But no potential enemy should be permitted to think that he could, at some point, attack U.S. or allied population and industry, or subject it to collateral damage, without prompt retaliation in kind.

3. Flexibility

Assured destruction cannot be the only response available to the President. We are quite uncertain as to how an adversary with increasingly sophisticated strategic nuclear forces might consider employing them in the event of a deep and desperate crisis. But we know that a number of possibilities would be open to him. As a consequence, we must have the flexibility to respond at a level appropriate to the type and scale of his attack.

As part of that flexibility, we must be able to launch controlled counterattacks against a wide range of targets -- including theater nuclear and conventional forces, lines of communication, war-supporting industry, and targets of increasing hardness: from aircraft runways and nuclear storage sites to command bunkers and ICBM silos. It should be added that a great many of these facilities -- including airfields and ICBM silos -- could remain priority targets for a second-strike.

Though the probability of escalation to a full-scale thermonuclear exchange would be high in these circumstances, we must avoid making that probability a certainty. At the same time, we must ensure that no adversary would see himself better off after a limited exchange than before it. We cannot permit an enemy to believe that he could create any kind of military or psychological asymmetry that he could then exploit to his advantage.

G. Essential Equivalence

These, I believe, are the conditions necessary to credible and high-confidence deterrence of nuclear attacks on the United States and its allies. Nuclear capabilities, however, are not solely instruments of deterrence; they are also part of the backdrop against which the nations that are the main actors assess one another and conduct international politics. Furthermore, the strategic forces can play a role in diplomacy -- either as a threat or, more subtly, as an inducement (to change camps, for example, so as to receive better "protection"). We owe it to our allies as well as to ourselves to assure that both explicit and implicit pressures can be confidently resisted.

In principle, if the conditions of deterrence are present, questions about relative power and influence should not arise as a consequence of comparing strategic forces. In practice, we cannot be certain that others will assess the U.S. deterrent by the same standards we use. We can undoubtedly help their assessments by avoiding exaggerated statements about U.S. weaknesses and Soviet strengths. The truth is that we are not midgets and they are not giants. But I do not see how, to be on the safe side, we can do otherwise than insist on and maintain essential equivalence with the Soviet Union in strategic offensive capabilities.

By essential equivalence, I mean a condition such that any advantages in force characteristics enjoyed by the Soviets are offset by other U.S. advantages. Although we must avoid a resort to one-for-one matching of individual indices of capability, our strategic nuclear posture must not be, and must not seem to be, inferior in performance to the capabilities of the Soviet Union.

Essential equivalence, as defined here, serves four major purposes. It helps to ensure that political perceptions are in accord with the military realities, and it minimizes the probability that opposing strategic forces will be used to seek any diplomatic advantage over us. It reduces the chance that one side or the other will become vulnerable to charges of a bomber or missile gap and contributes thereby to strategic stability. It enhances stability in a crisis by reducing the incentives for either side to strike first or preempt. And it sets a major objective for current and future SALT negotiations. The Soviets have insisted strongly on being treated as equals. We for our part must insist not only that the equality be real but also that all future arms control agreements codify that equality in the form of essential equivalence. We cannot afford to settle for anything less.

H. Capabilities

We currently maintain large and complex strategic nuclear capabilities in order to satisfy the conditions of deterrence. There are a number of reasons why we must continue to do so.

1. Second-Strike Forces

First and foremost, we need sufficient offensive forces to maintain an adequate alert rate and perform the strategic missions after an enemy first-strike. Where possible, as has been the case so far with our ICBMs and SLBMs, these forces should be designed so that they can take attrition, wait out an attack, and still retaliate with the necessary power. That is, we should avoid -- to the extent feasible -- having these forces depend too much on tactical warning for their survival -- especially if they are not recallable.

In the case of the bombers, which are difficult to protect on the ground -- but are recallable -- we do depend on warning of an attack for their survival. This means that a portion of the bomber force must be kept on a ground-alert. We must also maintain a network of high-confidence, independent early warning systems (with a very low rate of false alarms) that alert us to an attack in sufficient time to get the bombers off the ground. At additional cost, we could increase the number of alert bombers from the current 30 percent to 50 percent of the force, and to an even higher proportion during a brief emergency. But in the case of the bombers, as in the case of the SLBMs, the inventory of delivery systems must always be larger than the number of vehicles on day-to-day alert.

2. Attack Assessment and C^3

In order to employ our second-strike forces with deliberation and control, we need attack assessment capabilities to inform the National Command Authorities (NCA) of what is happening and has happened, and we need a survivable command, control, and communications (C^3) system to select and direct the necessary action. We do not want our response to be independent of or insensitive to the nature and weight of an attack. Accordingly, our second-strike forces must have the capability to execute either a full-scale retaliatory strike or smaller-scale counter-attacks on selected targets while the rest of the force is withheld. And we must know which of these options to choose. An attack assessment capability allows us to make a choice.

In the case of our C^3 system, flexibility means much more than the capacity to detect a nuclear attack and give the "execute" order to our forces. In addition to survivability and the ability to issue a last-ditch command to execute, our C^3 must provide secure, reliable communications and the capacity for high data rates so essential to the programming of new options as well as the implementation of preplanned options already on the books.

3. The TRIAD

To survive and respond as the President directs, we plan to continue distributing our retaliatory capability suitably among the three legs of the TRIAD. No delivery system is sure to be permanently invulnerable; with time and technology, any given platform could become susceptible to effective attack. For that reason, and because we want to complicate a potential enemy's problems, we must avoid reliance on only one type of delivery system, no matter how survivable it may appear at the moment. As with other investments, diversity must characterize our portfolio of strategic retaliatory forces.

The TRIAD gives us the necessary diversity. No potential enemy could expect to destroy the ICBMs, alert bombers, and on-station SLBMs in a simultaneous attack. In most circumstances, at least a large fraction of the forces in two out of the three components of the TRIAD would survive. The enemy's defenses would then have to deal with weapons approaching him from differing directions, at varying speeds, and along a variety of trajectories. There would be no way for him to escape without unacceptable damage.

We also maintain these three forces to hedge against unexpected breakthroughs in Soviet technology. It seems clear that in the current situation the best hedge against potential ASW threats lies in the air-breathing leg of the TRIAD. Improvements in SLBMs are clearly not a

fully adequate hedge against future threats to the SLBM force. Additional fixed ICBMs in silos would suffer the same increase in pre-launch vulnerability we already expect for MINUTEMAN. Mobile ICBMs, such as the M-X, can hedge against an ASW development but not against a breakthrough (or breakout) in ABM capability -- although the much bigger payload of the M-X would provide substantial capability to saturate even large ABM defenses. Air-breathers (bombers or cruise missiles) are the hedge of first choice, with (especially mobile) ICBMs an important second, against possible threats to our essential SLBM force.

Obviously we want more from our forces than the ability to survive and penetrate an enemy's defenses. If control and selective targeting are to be more than an abstraction, sufficient numbers of both missiles and bombers must be designed to deliver both high-yield and low-yield nuclear weapons with great accuracy. And these weapons must be effective against a wide range of targets, including some very hard targets. I should add, in this connection, that the United States has no current desire or plan for a disarming first-strike capability against the Soviet Union. Provided the Soviets demonstrate a similar restraint toward the United States, we shall not seek such a capability in the future.

4. Reserves

If we are to have a degree of strategic flexibility, the forces in the TRIAD must be sufficient, on a second-strike, to accomplish our strategic objectives. They must also be large enough -- and some of them must be secure enough -- so that we can hold a portion of them in reserve for an indefinite period of time. As far as we can tell, this reserve force can be quite modest in size, but it must be long on endurance.. In other words, our total requirement for strategic warheads not only depends on alert rates, survivability, penetration probabilities, and the number and types of targets to be covered; it is also a function of the need for some residual postwar capability. The resulting requirement can be maintained within or below current and contemplated SALT constraints.

5. Active Defenses

Since the advent of modern ballistic missiles in large numbers, and conclusion of the ABM Treaty in 1972, we have reduced our continental anti-bomber defenses. It is essential, however, that we continue to maintain surveillance over U.S. airspace, and that we be able to exercise control over that airspace by dedicated CONUS defense forces with augmentation (as necessary) from our tactical air force. We must avoid allowing free rides by hostile foreign aircraft over U.S. territory.

The ABM Treaty, as amended, limits us (as well as the Soviets) to one ABM site of 100 interceptors and launchers, which in effect differs little from no ballistic missile defense at all. For reasons of stability, the United States will continue to support the treaty and rely primarily on offensive capabilities to achieve its strategic objectives. However, the treaty does not preclude either side from vigorous R&D on ballistic missile defenses. Considering the magnitude and momentum of Soviet ballistic missile defense programs, we must make certain that our own effort is sufficient. Such an effort, at a minimum, should focus on hedging against any sudden ABM deployments by the Soviets, on increasing our understanding of their technology, and on ensuring that, at all times, our offensive forces can penetrate their defenses without excessive losses.

I. The Current Situation

It should be evident from this review that the conditions of strategic nuclear deterrence have become increasingly demanding with the years. What is more, we have found no easy, simple, one-time solution to these requirements. I am confident, nonetheless, that as of today, the U.S. strategic nuclear forces -- even after absorbing a full-scale surprise attack -- could deliver [redacted] warheads to targets in the USSR. I am equally sure that the Soviets could retaliate on a comparable scale against the United States. While the number of arriving Soviet warheads would be smaller, the total megatonnage delivered would be larger. The current strategic situation, in short, is one of mutual deterrence.

The conditions of essential equivalence also prevail. While each side confronts problems with specific force elements, there is a rough balance of strategic capabilities when measured against a variety of static and dynamic indicators. A strategic equilibrium is in effect.

With restraint on both sides, this situation can be maintained. We favor restraint and -- precisely to ensure stability and equivalence -- we continue to negotiate in SALT for specific, equitable, and verifiable agreements to control the strategic nuclear capabilities of the United States and the Soviet Union. We continue to believe, moreover, that stable mutual deterrence can be maintained at substantially lower strategic force levels than the two sides deploy at the present time. On the other hand, if the Soviets do not opt for restraint by SAL agreement, but choose increased forces instead, mutual deterrence can still be maintained by the appropriate U.S. force deployments.

We are making some progress in SALT on both constraints and reductions. If the eventual SALT II agreement meets our expectations, it will:

-- mean somewhat lower levels of strategic delivery systems and MIRVs than was envisaged at Vladivostok or in later talks -- and lower than we estimate we would face if there were no agreement;

-- introduce an important new sublimit on deployments: a sublimit on the total number of MIRVed ICBMs;

-- permit us to deploy an air-launched cruise missile (ALCM) force to maintain the effectiveness of the bomber leg of the TRIAD;

-- constrain to some degree the pace of technological change, but preserve U.S. flexibility to continue R&D on various types of cruise missiles and mobile ICBMs;

-- meet specific allied concerns by omitting forward-based systems (FBS) and allied systems while fully preserving cruise missile options;

-- place some limits on BACKFIRE, although important details of the limits are still being negotiated.

While the United States would have preferred a more far-reaching agreement, the one that is now beginning to take shape will constitute a significant step toward meeting our strategic objectives through arms control, and could lead to further mutual restraint, both qualitative and quantitative. The reductions in Soviet launchers, coupled with the sublimits on MIRVed ballistic missiles in general, and MIRVed ICBMs in particular, will help to preserve perceptions of essential equivalence and will contribute to military equivalence and stability. Mobile ICBM research and development can continue on a schedule that will not inhibit our present plans. Work can go forward on ground-launched and sea-launched cruise missiles.

In sum, we are drawing close to an agreement that will serve our strategic purposes. Even with such an agreement, however, we will have to continue looking to our own exertions in several key areas to ensure the conditions of deterrence. Under present conditions, SALT alone cannot preserve long-term strategic stability; it must be supplemented by prudent U.S. decisions to ensure the strategic deterrent.

Unilateral U.S. actions will continue to be necessary for three basic reasons. First, strategic nuclear systems continue to evolve quite rapidly as a result of technological developments alone. Second, the Soviets are exploiting many of these developments in their large strategic programs, just as we are. Third, the power and credibility of our strategic deterrent are sensitive to what the Soviets do.

J. Future Dangers

The Soviet contribution to the dynamics of the competition is especially worth noting. To the extent that there has been an interaction between the strategic postures of the United States and the Soviet Union, much of the impulse for it may have come in the 1950s and 1960s -- however unwittingly -- from the United States. Now, however, it is the Soviets who are driving the interaction. Their current programs have breadth, depth, and momentum.

Exactly what the Soviets are trying to accomplish with their large and growing strategic capabilities is uncertain. Perhaps it is pure deterrence. But if it is, their definition of pure deterrence appears quite different from our own. Conceivably they are as interested as we are in the concept of options and controlled nuclear campaigns. They probably have the capability, even now, to employ their offensive forces with some flexibility, and we cannot preclude their being quite selective in their targeting. Much of what they are doing both offensively and defensively coincides with the actions that would support a damage-limiting strategy. And it is within the realm of possibility that they are attempting to acquire what have been called "war winning" capabilities.

Whatever the intentions and motives of the Soviets, we face two related problems as the result of their activites. They are the increasing vulnerability of the U.S. ICBM force and the expanding scope of Soviet active and passive defenses.

1. The Threat to the ICBM Force

The potential vulnerability of our existing silo-based ICBM force (MINUTEMAN and TITAN II) is a major issue of concern to us, but it is important that the issue be approached in perspective. Because ICBM silos are fixed and known targets, we have recognized for years that once Soviet accuracy improved enough, the silos would become vulnerable. Anxiety about the threat posed by the Soviet ICBMs of the SS-9 and SS-11 generation was, for example, one of the grounds for the silo-hardening program begun in the late 1960s and just now nearing completion.

It is now clear that all three of the "fourth generation" ICBMs the Soviets are now deploying -- the SS-17, SS-18, and SS-19 -- have the potential, with feasible accuracy improvements, to attain high single-shot kill probabilities against U.S. silos. [redacted] the current generation Soviet MIRVed ICBMs could, by the early-to-mid-1980s, reduce the number of surviving MINUTEMAN to low levels [redacted] In our Comprehensive SALT Proposal, given to the Soviets in March 1977, it was not the limits on numbers of launchers, but those on modifications, replacements, and total numbers of flight tests that offered the prospect of extending the survivability of

MINUTEMAN -- and, even with that proposal, there would have been some question of the survivability of MINUTEMAN. In short, MINUTEMAN vulnerability was not a problem created by SALT, nor it is a problem we can solve with a SALT II agreement. We would have the same problem without such an agreement -- only in that case we would have other problems as well.

In recognizing that the MINUTEMAN vulnerability problem is a serious concern for us, we also realize that the Soviets would face great uncertainties in assessing whether they would have the capability we fear -- and still greater uncertainties as to its military or political utility. On all the technical judgments -- how accurate the missiles are, how reliable, how well the system would work in actual practice, whether they could explode two reentry vehicles on each silo without excessive fratricide, or only one -- we, quite properly are conservative, from our point of view. Similarly, the Soviets must make cautious assumptions from their perspective. In particular, they must recognize the formidable task of actually executing (as planned) a highly complex massive attack in a single cosmic throw of the dice.

Even if such an attack worked exactly as predicted, the Soviets would face great risks and uncertainties. First, they would necessarily have to consider whether the U.S. missiles would still be in their silos when the attack arrived, or whether, given our capability to have unambiguous confirmation of a massive attack, we would launch from under the attack. Second, and more important, an attack intended to destroy U.S. silos could kill at least several million Americans and would leave untouched at least the alert bombers and at-sea SSBNs with thousands of warheads. The Soviets might -- and should -- fear that, in response, we would retaliate with a massive attack on Soviet cities and industry. The alleged "irrationality" of such a response from a detached perspective would be no consolation in retrospect and would not necessarily be in advance an absolute guarantee that we would not so respond. In any event, any Soviet planner considering U.S. options would know that, besides massive retaliation, the surviving U.S. forces would also be capable of a broad variety of controlled responses aimed at military and civilian targets and proportioned to the scale and significance of the provocation. Indeed, with ALCMs deployed on the surviving alert strategic bombers, we would still have a very substantial capability to destroy remaining Soviet silos, though with some hours of delay.

In short, the vulnerability of MINUTEMAN is a problem, but even if we did nothing about it, it would not be synonymous with the vulnerability of the United States, or even of the strategic deterrent. It would not mean that we could not satisfy our strategic objectives. It would not by itself even mean that the United States would lack a survivable hard target capability or that we would necessarily be in a worse post-exchange position in terms of numbers of weapons, payload, or destructiveness.

All this is by no means to say we can or should ignore the problem. There would be political costs were the Soviets to appear to us, to our friends, or to themselves to have such an unbalanced or unmatched capability against a key element of the U.S. force. It would clearly be desirable to keep all three TRIAD elements survivable if we can do so at costs commensurate with the benefit, and without negating our overriding interest in strategic stability. We are actively studying a variety of responses to the challenge. One of these is the continued examination of mobile ICBMs, discussed in detail below. And, while we are doubtful that any future SALT agreement -- except possibly one involving very deep cuts in MIRVed ICBMs and severe limits on technological innovation and on testing -- can cure the problem, agreements may be a way to reduce its significance both by reducing the relative importance of the land-based forces and by moderating the strategic competition generally.

2. Active and Passive Defenses

Similarly, major active and passive defenses -- coupled with the ability to eliminate the bulk of the MINUTEMAN/TITAN force -- might seriously degrade our retaliatory response in some circumstances. If the Soviets believed that they could protect most of their population, and simultaneously cause major damage to the United States, they might calculate, on this basis, that they could gain a meaningful military advantage. However, they would have to violate or abrogate the ABM Treaty in order to gain this supposed edge.

Neither MINUTEMAN vulnerability nor Soviet civil defense on the scale we see can seriously degrade our basic retaliatory response. But we must be concerned about perceptions of Soviet superiority based on these two factors. We do not need to and we should not allow such expectations to develop in the Soviet Union, in other parts of the world, or in the United States itself. The programs in this defense budget seek to ensure that we are able as necessary to nullify any such perceived advantages, no matter how remote or unrealistic they might prove to be. The Soviets should understand that they cannot explore these avenues to nuclear superiority -- however illusory -- without paying a heavy price for their actions.

K. Issues

The most immediate issue raised by these problems is how we can best retain the control and flexibility currently inherent in the MINUTEMAN force. The issue is complicated in part by uncertainty about the speed with which the Soviet threat to MINUTEMAN -- primarily a function of the SS-18 and SS-19 ICBMs at the present time -- might become serious.

1. ICBM Vulnerability

Continued development of the MX missile will give us the option for a major hedge against projected ICBM vulnerability in the late 1980s. Before then, our main insurance will come from the SLBM and heavy bomber forces.

The insurance will not be perfect. TRIDENT -- with all its advantages -- is by no means a complete substitute for MINUTEMAN. In any event, we should avoid becoming excessively dependent on any one type of strategic launch platform. The need to continue exploring the prospects for strategic stability in SALT could also result in some temporary constraints on our deployment of cruise missiles. However, those restraints will be only temporary and will in fact expire before we are ready to deploy the constrained systems.

In the meantime, we must push ahead with the air-launched cruise missile (ALCM) and maintain our ability to penetrate Soviet defenses with manned aircraft. Later-model B-52s will give us the necessary platforms for both the ALCM and defense penetration in the near-term future. To hedge against longer-run needs, we now plan to continue RDT&E on the B-1 and also plan to explore a number of possible options for other penetrating bombers.

2. Soviet Damage-Limiting

I am not persuaded that the right way to deal with a major Soviet damage-limiting program would be by imitating it. Our efforts would almost certainly be self-defeating, as would theirs. We can make certain that we have enough warheads -- including those held in reserve -- targeted in such a way that the Soviets could have no expectation of escaping unacceptable damage. In my judgment, not only is that a fully manageable task; it would not necessarily require more warheads beyond those we already program.

To say this is not to rule out an expansion of the very modest civil defense program we already have. Fallout shelters and planning for the relocation of urban population in a crisis can make sense as a supplement to our policy of flexible response -- both in demonstrating our determination to have choices between catastrophe and paralysis, and in helping to minimize damage should deterrence fail. But we have the time to review and debate the possibilities. Crash programs are not what we need -- in civil defense or elsewhere.

L. Conclusions

To those who are convinced that the Soviets are aiming at meaningful strategic superiority, the programs and options I have provided here may seem inadequate. To others, some of these policies and programs may appear to be the result of excessive concern about very unlikely events, and contrary to the precepts of common sense.

In an arena where the stakes are so high and the uncertainties so great, common sense is not always an infallible guide. It may be reasonable in daily personal life to equate the implausible with the impossible; nuclear calculations involving the survival of the nation require us to distinguish between the two.

It is tempting to insist that with the acquisition of a modest but survivable nuclear capability, we can achieve security and stability, and no longer have to respond to the initiatives of others. It is equally tempting to assert that if only we are restrained, others will surely reciprocate. But knowledge is the enemy of certitude. Excessive arms acquisition through caution and hedging in the face of uncertainty can be counter-productive; excessive restraint can have its dangers as well. Even in an era of detente, strategic stability rests on more than goodwill; it also requires strength. The Carter administration plans to demonstrate both.

II. POLICY FOR THE GENERAL PURPOSE FORCES

The capabilities we program primarily for the defense of overseas theaters, and as our contribution to collective security, comprise not only the General Purpose Forces, but also the bulk of the National Guard and Reserve Forces and the Airlift and Sealift Forces. They contain nuclear as well as conventional capabilities. Their FY 1979 direct costs, in TOA, are estimated at $55.4 billion in the program budget.

The program total represents 44 percent of the total defense budget, or nearly six times as much as we spend on the strategic nuclear forces. With these resources, we plan to support capabilities that include ground forces of 28 active and reserve divisions, land-based tactical air forces of more than 36 active and reserve fighter/attack wings, three Marine air wings, 12 carrier air groups, naval forces (not including SSBNs) of 458 major combatants and auxiliaries, and strategic airlift forces of 17 squadrons.

A. The Theater Nuclear Forces

Our Theater Nuclear Forces are an integral part of the General Purpose Forces. As such, they cannot be described as a full-fledged and

CHAPTER I

NUCLEAR FORCES

STRATEGIC NUCLEAR FORCES

I. STRATEGIC OFFENSIVE FORCES AND PROGRAMS

A. Program Basis

Factors used in planning our strategic forces are discussed in Section III. I am confident that our current strategic forces and those we propose are consistent with the continued maintenance of essential equivalence under current Strategic Arms Limitation Talks (SALT) agreements. With time, and the completion of new agreements, the composition and size of these forces will undoubtedly change. We hope that the size of the forces on both sides can be significantly reduced, and their characteristics made less threatening. However, we will continue to insure that any strategic arms limitation agreement is equitable and consistent with the concept of equivalence of nuclear forces.

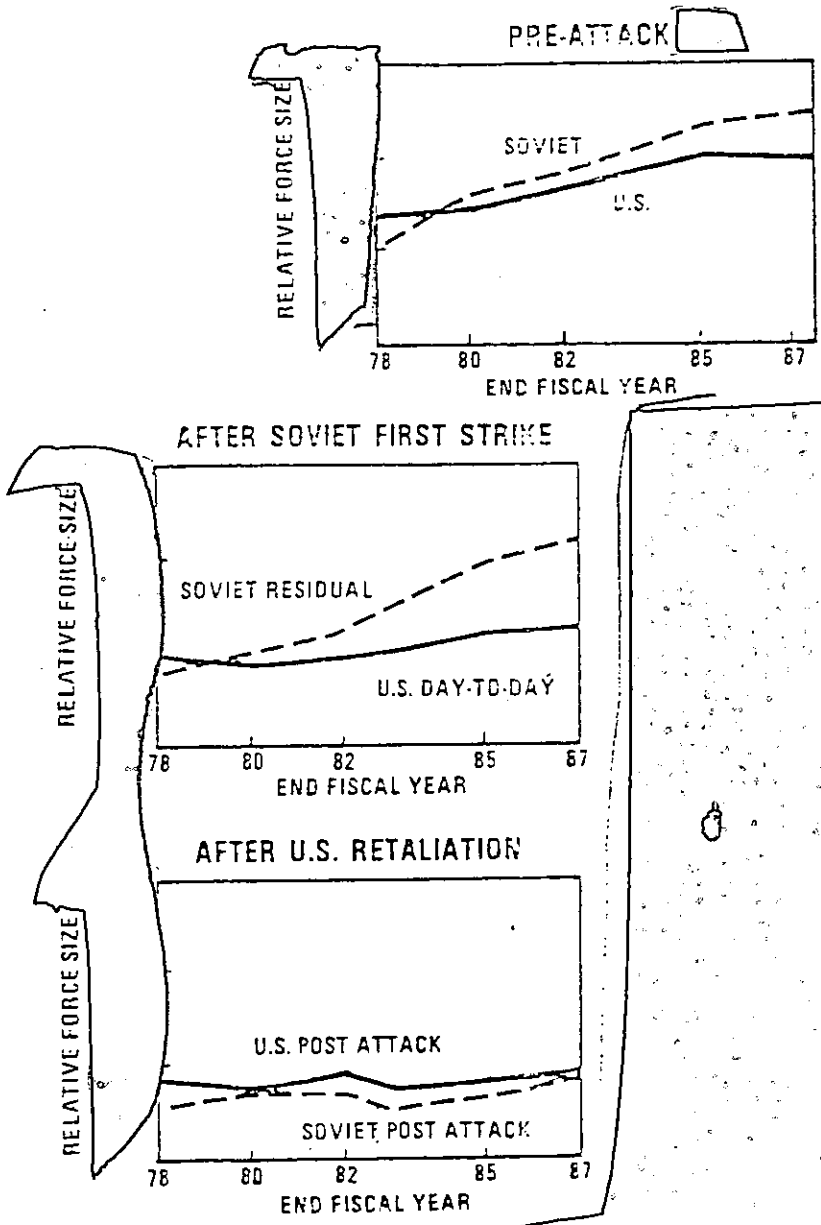
There is no generally accepted single way to compare our strategic capability with Soviet capability. However, our primary measure of strategic capability is our ability to retaliate after a Soviet first-strike. Analyses show that, over a range of hypothetical major wartime events, our current forces could ride out a massive Soviet first-strike and retaliate with devastating effect. Charts [redacted] show comparative U.S. and Soviet force capabilities under various scenarios. The comparison considers projections of the Soviet offensive and defensive threat under a SALT II agreement (U.S. forces include cruise missiles on B-52s but exclude wide bodied cruise missile carriers, B-1, and MX) but does not consider changes in the size or characteristics of the Soviet target base. The charts show, for example, that for the scenario in which the Soviets strike first, with U.S. forces on day-to-day alert, we are planning for an increased retaliatory capability. As the early 1980's evolve, the U.S. residual forces increase for the other scenarios as well, with the deployment of the cruise missile. We plan this capability increase:

-- to offset growing Soviet strategic armaments in order to ensure that there is no doubt as to our capability in the minds of Soviet leaders, in the minds of our allies, or even in our own minds should we be faced with a moment of deep crisis; and

-- to hedge against the uncertainty of future political and technological events.

CHART 1A-1a

U.S. AND SOVIET STRATEGIC FORCES COMPARISON (DAY-TO-DAY ALERT)



The matter of perceptions, to which increased second strike capability contributes, has been addressed in Section III. To hedge against the unexpected, we maintain three separate strategic forces, ICBMs, SLBMs and air-breathing systems, in part to ensure that breakthroughs in offensive or defensive technology do not unacceptably degrade our retaliatory capability.

The recent cruise missile decision and its emphasis on air-launched weapons recognized a growing relative reliance on the Submarine Launched Ballistic Missile (SLBM) leg of the TRIAD and the need to hedge against potential Anti-Submarine Warfare (ASW) threats or a breakthrough in Anti-Ballistic Missile (ABM) capability. A basic motivation of the TRIDENT program, with its longer range missile and quieter submarine, is also to hedge against unexpected ASW developments, while providing a cost/effective replacement for our aging SLBM force. Similarly, development of a new Intercontinental Ballistic Missile (ICBM), the MX, that may be deployed in a mobile mode is motivated by a desire to maintain the option of having a survivable ICBM leg of the TRIAD to hedge against both the expected threat -- e.g., the growing threat to MINUTEMAN silos -- and the unexpected.

In addition to being able to inflict unacceptable damage on the Soviet Union in retaliation, our surviving strategic offensive forces must have the ability to:

-- implement a range of selective options to allow the National Command Authorities (NCA) the choice of other than a full scale retaliatory strike if needed; and

-- hold a secure force in reserve to ensure that the enemy will not be able to coerce the United States after a U.S. retaliatory strike.

Force characteristics consistent with these objectives are being pursued in each element of the TRIAD. The MK-12A warhead, combined with greater accuracy, will improve the flexibility and effectiveness of a portion of the MINUTEMAN III force. MX and TRIDENT II would provide higher survivability as well as high effectiveness and flexibility against the full range of threat targets.

We are investigating the feasibility of improved SLBM accuracy and pursuing improved SLBM command, control and communications (C^3) which would provide SLBMs greater effectiveness and flexibility in the execution of various response options and as part of a secure reserve.

Finally, the accuracy and yield of the cruise missile married with the bomber will provide the National Command Authorities (NCA) with a system, on a recallable launcher, that can be employed against virtually the entire target spectrum with high effectiveness and low collateral damage.

B. Program Description and Status

1. ICBMs

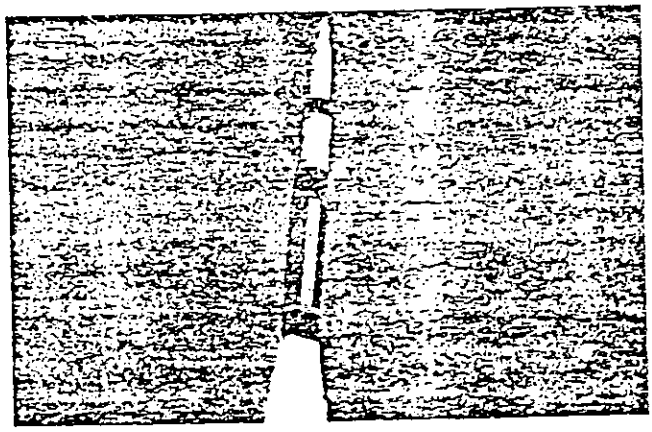
The unique role played by the ICBM force in the current TRIAD of strategic forces is well recognized. The ICBM combines yield, accuracy and timely response which alone permit it to be deployed effectively against the entire range of targets. It enjoys the additional advantages of secure and timely command and control communications, and operating costs which are markedly less than those of bombers or SLBMs. Today, the ICBM force contributes significantly to the effectiveness of our deterrent forces.

The projected vulnerability of both the United States and Soviet silo based ICBM forces is also well recognized. It exists with or without SALT limitations though it may be possible to delay that vulnerability through SALT proposals, it is doubtful that this situation can be reversed by a negotiated accord. Increasing silo vulnerability does not mean the end of the TRIAD concept, however, even if we do nothing more than upgrade the silos to enhance survivability. The silo-based ICBM force will continue to remain a potent force against which the Soviets would have to allocate considerable effort to destroy with even medium confidence. Moreover, there would be considerable uncertainties associated with any Soviet attempt to execute a coordinated and successful attack against all U.S. MINUTEMAN silos. Fratricide, missile reliability, and possible operational degradation of Soviet ICBM accuracy are all complicating factors. Nor can an attacker ignore the possibility that we might launch our ICBMs under attack -- an approach which requires the greatest caution, but through which vulnerability problems are avoided. The seemingly paradoxical situation that results from these technological and strategic considerations is that, in the early 1980s, we will not have much confidence that more than [redacted] percent of our silo based missiles can survive a Soviet preemptive attack. But the Soviets could not be at all confident of destroying [redacted] percent of our missiles.

If beyond the mid-1980s we desire to retain the same retaliatory effectiveness provided by today's ICBM force, we will need a more survivable ICBM basing mode, or a considerably more capable silo based missile to maximize the retaliatory effectiveness of the small percentage of missiles expected to survive an all-out Soviet attack on the Minuteman Force in the mid to late 1980s. Mobility can provide the desired survivability. But there are potential problems associated with mobility, including verification uncertainties, land availability, and environmental concerns; mobility is also more expensive than silo basing. On the other hand, the technologies which bring increased missile retaliatory effectiveness are a cause of concern to some, who argue that a large throwweight ICBM would be destabilizing - that it would so threaten Soviet ICBMs that Soviet leadership in a crisis might be tempted to strike first, calculating worse consequences if it did

not. To the extent that such a characteristic is a concern, it should be noted that the Soviets will have that capability against our silo based missiles in the early to mid 1980s (though our silo based missiles are a smaller fraction of our strategic force). Concerns about instability are thus not eliminated by failure of the U.S. to improve the hard target kill capability of its ICBM force.

But fixed silo basing of MX could increase these concerns unless missile design characteristics precluded its effective use against Soviet silo targets, whereas a large investment in survivable mobile basing would more clearly signal that the U.S. is not interested in first use. With silo basing, the retaliatory effectiveness of ICBMs would depend in part on capitalizing on the previously mentioned uncertainties surrounding a Soviet first strike, and on Soviet knowledge that we might launch on sufficiently well confirmed evidence that Soviet missiles were impacting or about to impact on the United States.



MINUTEMAN MISSILE

a. MINUTEMAN

This year's request, as last year's, does not contain funds for MINUTEMAN III missile production. The MINUTEMAN line is being progressively closed down as existing contractor commitments, including those which resulted from the denial of the FY 1977 MINUTEMAN rescission, are satisfied. Approximately 40 missiles to be produced with FY 1977 funds are being added to an already adequate inventory of MINUTEMAN III missile test and replacement assets. While we have no plans to deploy these additional MINUTEMAN III missiles, that option could be exercised on short notice and for little additional expense by making minor modifications to MINUTEMAN II silos and replacing MINUTEMAN II missiles with MINUTEMAN III. [redacted]

[redacted]

We have deleted plans to modernize the MINUTEMAN II missile with MINUTEMAN III guidance, a new reentry vehicle and other improvements. In view of projected silo vulnerability in the mid-1980s when the improved MINUTEMAN II would first be available, the cost of this program, some $2.5 billion dollars, did not appear justified. This is not to say that we are willing to abandon the MINUTEMAN II. We will continue to take such action as necessary to ensure that the system remains a viable force through the program period.

The upgrade of MINUTEMAN III silos was completed during FY 1977, and the improvement of MINUTEMAN II silos is proceeding on schedule. We have added $2.1 million to this year's request for an improved site security system. A prototype radar signal processor will be developed to determine the feasibility of reducing the high number of false alarm security zone violations now occurring at MINUTEMAN launch facilities.

We have decided to initiate improvements in the Airborne Launch Control System (ALCS - Phase 3) announced last year, but at a lower funding level then projected. We are at the same time thoroughly reviewing this program to identify a less costly way to provide MINUTEMAN II and III missile status information, and MINUTEMAN III retargeting capability, to the ALCS aircraft. Five million dollars is being requested for this effort.

b. MINUTEMAN Improvements

The MINUTEMAN III Guidance Improvement Program continues on schedule. Five of seven flight tests have been conducted and the remaining tests, as well as implementation of final software improvements in the entire MINUTEMAN III force, will be completed by late FY 1978. To some extent, the effects of the guidance improvement program have already been realized by the gradual refinement of NS-20 guidance software.

We are requesting $22 million in FY 1979 to complete development of the MK-12A reentry vehicle and $68.7 million to continue procurement activities. MK-12A, with [redacted] yield of the MK-12, will be deployed on a portion of the MINUTEMAN III force [redacted] starting in FY 1980.

Finally, we plan to initiate R&D on the ICBM C^3 integration program for both MINUTEMAN and TITAN.

c. Advanced ICBM Technology and MX

The near-term objective of the Advanced ICBM technology program is to provide the technology base for full scale development of MX. In the

long term, if MX full scale development is intiated, this program will be continued at a modest level of effort to ensure a base of technology which can be accelerated quickly to counter Soviet offensive or defensive breakthroughs. Missile related efforts conducted through FY 1978 under this program include preprototype Advanced Inertial Reference Sphere (AIRS) development which promises significant improvements in ICBM accuracy, propulsion, computer, and canister development. Basing technology development has included definition of vehicles required for mobility and will include construction of about 7.4 kilometers of trench near Yuma, Arizona to demonstrate feasibility of construction techniques and to validate cost and other technical estimates.

The FY 1979 program will continue both missile and basing development activities. System definition tasks initiated during FY 1978 will mature during FY 1979 to the point of prototypes for each missile subsystem. The basing validation tasks will be completed early in FY 1979 and system definition will then continue on the selected deployment option(s).

I had hoped that the MX basing concept would be sufficiently well determined by now so that we could proceed in the FY 1979 budget with full scale development. But it is not, in terms of costs, survivability, and geographic location of a mobile version. I believe we will probably be able to reach the point of settling the basing concept or concepts in a way or ways acceptable from cost, strategic employment, and other standpoints later this year. If we decide to proceed, by early FY 1979 with full scale engineering development, we will request any needed additional funds from Congress in a revised program.

d. Advanced Ballistic Reentry Systems (ABRES)

I propose to continue the ABRES effort at about the same level of effort as last year. The objective of this program remains the development of reentry and penetration technology. During FY 1979, in addition to reentry subsystem technology development (e.g., nosetips and heat shields), the program will include prototype ballistic reentry vehicle technology demonstration for application to MX and TRIDENT II, and demonstrations of technology for a maneuvering evader which could maintain current ballistic missile accuracy while evading advanced missile defense. A total of $105 million is requested in FY 1979.

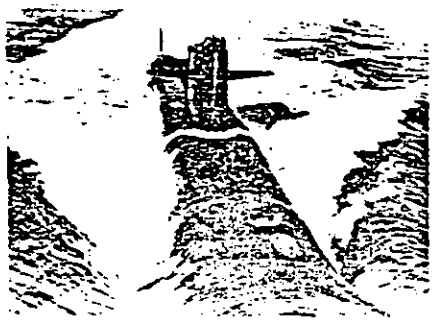
2. Submarine Launched Ballistic Missiles (SLBMs)

The critical role of the SLBM force, as the most survivable element in the current TRIAD of strategic forces, both now and in the foreseeable future, is well established. The addition of the longer ranged

TRIDENT I missile to the force, in the TRIDENT submarine and by backfit into selected POSEIDON submarines, will enhance survivability by increasing the available in-range operating area. The ability of the SLBM force to patrol in the vast ocean areas presents a multitude of threat azimuths to potential enemies, and the ability to retarget rapidly missiles when directed, adds additional flexibility and potential capability to this sea-based force.

The nature of the SLBM force contributes to crisis stability. The existence of a survivable, at-sea ballistic missile force decreases Soviet incentives to procure additional counterforce weapons and to plan attacks on United States soil since such attacks would not eliminate our ability to retaliate. This survivability permits a secure reserve force which can threaten the recovery capability of any power, thereby preventing nuclear blackmail.

A TRIDENT II missile would provide the potential for a capability against the entire Soviet target spectrum, in a highly survivable system, through missile accuracy and throw-weight improvements utilizing the full volume of the TRIDENT submarine missile tube.



POSEIDON SUBMARINE

TRIDENT SUBMARINE

a. POSEIDON

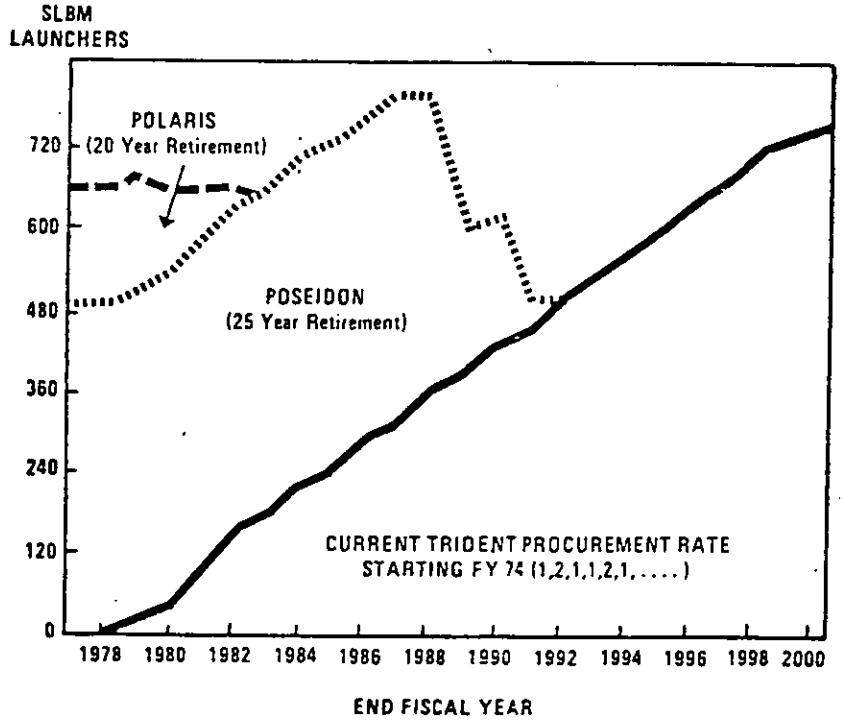
The POSEIDON conversion program will be completed with the deployment of the 31st boat, USS DANIEL WEBSTER in FY 1978, thereby providing a fully MIRVED SLBM capability in the Atlantic Theater of Operations.

The POSEIDON Modification Program (POMP), which was initiated to correct deficiencies uncovered in flight testing of POSEIDON missiles, is proceeding into the final phase of missile reliability improvement. All pipeline missiles have been upgraded and operational missiles will be replaced as they are routinely returned to missile assembly facilities. It is anticipated that post-POMP missiles will be fitted on all deployed POSEIDON submarines later this year.

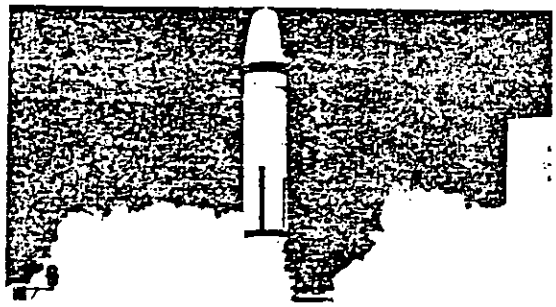
TRIDENT submarines provide technologically current, survivable, cost/effective replacements for an aging POSEIDON force. The relatively large size of the TRIDENT has been decided after extensive consideration of all aspects of survivability and capability required in a sea-based strategic deterrent system designed for operations through the 1990s. Sufficient volume is available within the hull for a power plant which will provide maximum speed, to the extent that may be useful for evasion of enemy ASW platforms, as well as quiet speeds for secure patrol operations and threat avoidance. Sufficient growth room has been provided in the missile launch tube for follow-on missiles, such as TRIDENT II, with the capability for improved accuracy and increased throw weight/range. Sufficient ship volume is also available for extensive sound quieting measures for additional survivability enhancement and for incorporation of future ship system improvements which will increase survivability and effectiveness. The current 31-ship POSEIDON force entered service during the five year period from 1963 to 1967. Unless we retain our POSEIDON force beyond their presently planned maximum extended service life of 25 years, a significant reduction in SLBMs will occur in the late 1980s and early 1990s since the POLARIS/POSEIDON force was built at a much faster rate than that planned for TRIDENT. As shown in Chart IA-2, at our current TRIDENT building rate of three ships every two years, a low level of 504 SLBMs will be reached in 1992 as compared to our current level of 656. However the smaller TRIDENT force will be at least as capable as the larger POLARIS/POSEIDON force is today.

Chart IA-2

SLBM LAUNCHERS



The 1976 Treaty of Friendship and Cooperation with Spain requires the relocation of our Rota-based SSBNs by July 1979. These submarines and their tenders will probably be supported at Kings Bay, Georgia. Training and personnel support will continue at Charleston, South Carolina. The backfitting of the TRIDENT I missile into these submarines will allow coverage of potential targets, upon departure from Kings Bay, and without lengthy transit, thereby reducing our dependence on overseas basing.



TRIDENT I MISSILE

b. TRIDENT

The TRIDENT building program continues at the planned rate of three submarines every two years, based upon the need to replace our aging POLARIS/POSEIDON submarines and the fact that TRIDENT continues to be the most cost effective sea-based deterrent system we can identify. The FY 1979 budget funds one submarine and authorization is requested in FY 1980 for two additional ships.

The TRIDENT ship contractor, the Electric Boat Division of General Dynamics, has experienced difficulties in meeting the scheduled delivery of the first TRIDENT submarine. The contractor announced in July 1977 that the lead ship delivery would slip six months from the contract delivery date and in August the Navy estimated the slip at 12 months. Subsequent submarines are estimated to slip by lesser amounts with contract delivery dates, and related deployment schedules, recovered by the sixth boat.

The TRIDENT shipbuilding program has required a major expansion of facilities at the Electric Boat Division operations in Groton, Connecticut and the opening of a satellite facility at Quonset Point, Rhode Island. In addition, it was necessary substantially to increase manpower levels at the two locations. The program delays center on the failure to achieve initial productivity goals for these new facilities. Once the programmed productivity levels are achieved, the yard should be able to produce TRIDENT submarines at the proposed rate.

The TRIDENT I (C-4) missile is in production. The flight test program has been extremely successful and the missile should meet the planned first deployment in a backfitted POSEIDON submarine in October 1979.

TRIDENT I missiles will be backfitted into twelve POSEIDON submarines to support a deployed level of up to ten submarines. The introduction of the TRIDENT I missile with its 7400 kilometer (km) full payload range will provide a large increase in operating area for POSEIDON submarines.

The Mark 500 EVADER reentry vehicle concept has been successfully demonstrated in flight tests of TRIDENT I missiles. The option to place this reentry vehicle in engineering development will be maintained should we need to counter new Soviet initiatives in ABM development. No such effort is now planned.

c. TRIDENT II Missile

We are requesting funding for the continuation of the TRIDENT II concept formulation effort. A TRIDENT II missile would effectively utilize the full volume of the TRIDENT SSBN missile tube; a range of potential missile configurations is under study. Since the TRIDENT II could provide a capability in terms of payload, range, and accuracy against the full range of Soviet targets from a highly survivable platform, it is a valuable option to maintain while deciding the long term overall structure of strategic forces. We may well wish to exercise that option at the appropriate time.

d. Improved Accuracy Program

We are continuing the Improved Accuracy Program which is designed to determine the extent of SLBM accuracy improvement attainable and to validate the performance of our current systems. As accuracy improvements become technically feasible, development can proceed for their use in current and future SLBM systems, as might be required by national policy and objectives.

3. Bombers

a. Air-Breathing Options

In our studies last year of modernizing the air breathing force, we have examined the widest range of alternative systems. Most of these alternatives, for one reason or another, fell by the wayside in the

course of our review. First, the alternative of developing a new penetrating bomber that would be less expensive than the B-1 proved infeasible. Second, for a force of modernized FB-111s (the FB-111Hs) our analysis showed no significant advantage in cost effectiveness over a force of B-1s for a 1977 deployment decision. Third we eliminated the rebuilt B-52 (the B-52X). In terms of relative cost and effectiveness, the B-1 and the B-52X would be about equal until the mid-1980s. However, the total number of B-52 airframes is fixed, while the B-1 would have the advantage of a greater potential for increases in total capability. A fourth possibility was the standoff cruise missile carrier based on existing commercial aircraft or military transport designs, and carrying several dozen cruise missiles.

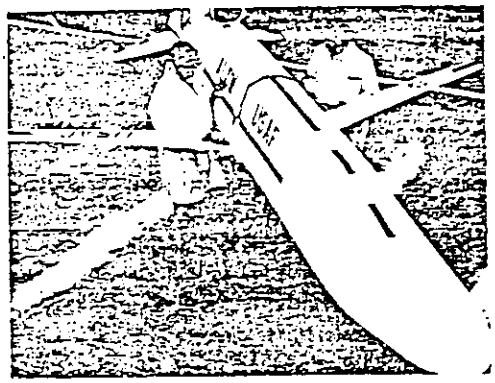
The cruise missile carrier turned out to be considerably more attractive if deployed along with a large number of smaller aircraft carrying cruise missiles, a number of penetrating bombers, or some combination of these. Moreover, it would provide the possibility of increasing our capability well above current levels. Therefore, while I do not believe that we would want to rely on the cruise missile carrier alone for the air-breathing part of our retaliatory capability, it is strategically important to keep this potential near at hand as a hedge against unforeseen circumstances. That led us in our consideration to the last two alternatives: The B-1 versus the B-52 with cruise missiles.

A central issue in the comparison between the B-1 and the B-52 with cruise missiles is the nature and effectiveness of the Soviet air defenses in the late 1980s and the 1990s. Inevitably, there are differences of opinion about the absolute and relative effectiveness of prospective Soviet air defenses in five, let alone twenty years. But, given assumptions as to scenario, the task to be done, costing ground rules, and other factors, coupled with assumptions regarding Soviet defenses that, if anything, favor the B-1 over the cruise missile, a B-1 force that would have had a capability equal to B-52s with cruise missiles would have been about 40 percent more expensive.

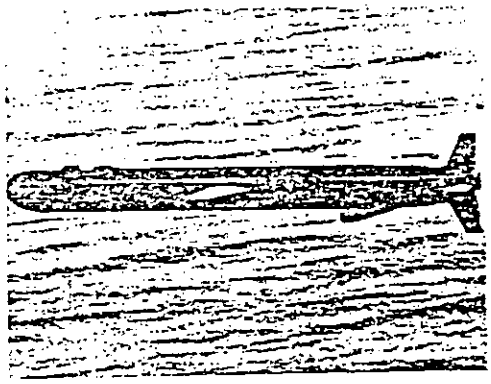
That estimate, I might note, is based on the assumption that the B-1's Electronic Countermeasure (ECM) equipment would have been at least moderately effective -- an inherently uncertain and, indeed, virtually unknowable factor. Of course the uncertainty as to future Soviet systems also influences our estimates of the cruise missile's ability to defeat enemy defenses by virtue of its small radar cross-section. But I have more confidence in the effect that the low detectability of the cruise missile will have on Soviet radars than in the effect that the B-1's radar countermeasures would have had. Testing to be completed over this year should provide the initial data with which to continue our assessments of projected force effectiveness.

Thus, the B-52/cruise missile combination is the better choice on the grounds of expected cost and effectiveness. Moreover, the B-52/cruise missile combination will curb our current trend toward excessive reliance on SLBMs, raising the number of penetrating weapons delivered by the air-breathing part of our TRIAD to perhaps one out of three. Our analysis shows, that the B-52/cruise missile force will increase our surviving relative force capability in the 1980s in the day-to-day alert case [redacted] and that cruise missile carriers provide an option for even further increases. With cruise missile carriers and our forces on generated alert, our surviving forces would substantially exceed Soviet residual forces after a Soviet first strike.

I am certain that the cruise missile will improve the world's perceptions of the potency of our forces, not only by maintaining strategic force parity with the Soviet Union, but also by retaining a clear technological superiority. And finally, we are doing all this with a weapon that because of its long flight time, does not threaten a first-strike capability.



ALCM



TOMAHAWK

b. The B-1 Decision

My recommendation to the President, and his decision not to proceed with production of the B-1, were based on the conclusion that aircraft carrying modern cruise missiles will better assure the effectiveness of the bomber component of U.S. strategic forces in the late 1980s. Each B-52 can launch many missiles, with great accuracy, at different targets in the Soviet Union, from a distance of many hundreds of kilometers. Each carrier produces many small targets for Soviet air defenses to contend with. If additional warhead-carrying capacity is needed, that can come from new cruise missile carriers in addition to the B-52.

As previously noted, for equally effective forces, the B-52/cruise missile program results in significant savings in comparison with a modernization program based on the B-1. The cruise missile force buildup will occur at roughly the same rate and over the same period as had been planned for the B-1 deployment. Because the mixed force appeared to be the most attractive approach, the FB-111s and some

modernized B-52s will be continued in the penetrating bomber role. Because of the uncertainties which will exist relative to the level of threat capabilities, we plan to continue our review of future penetrating bomber options.

c. B-52 Modernization

To implement the cruise missile decision, our B-52 development efforts are concentrated on the necessary avionics updates for the fleet and the modifications required for cruise missile carriage. A portion of the funds allocated to cruise missile research and development in the FY 1979 budget will be devoted to development of B-52 launchers and pylons. In addition, $131 million is included for B-52 avionics and electronic warfare systems development.

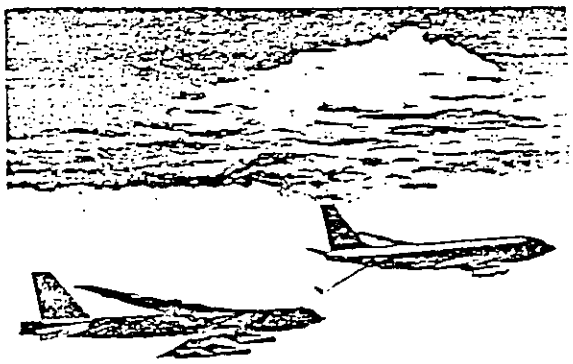
The B-52 avionics efforts will concentrate on increasing aircraft effectiveness and reducing support costs. Offensive avionics can be improved to enhance aircraft performance and reliability -- for example, we plan fleet wide conversion of some vacuum tube technology items in the navigation system to a more reliable, more accurate, and more easily maintained, system of modern design with nuclear-effects protection and improved accuracy. We are examining the proper ECM configuration for the B-52s assigned a standoff role compared to those assigned a penetrating role. Reliability and maintainability programs for defensive avionics are now being initiated along with advanced ECM developments (e.g., electro-optical and infrared countermeasures) against the fighter and surface-to-air missile (SAM) threats. Most of these avionics programs have been in development for a long while but some of the defensive R&D programs will be new starts designed to permit the long-term retention of some B-52s in a penetrating role. The programmed offensive and defensive avionics modifications will also enhance the utility of the B-52s in their alternative conventional role.

The developments and the modifications needed for cruise missile carriage are straightforward. I will discuss the two missile programs separately, but I see no difficulty integrating the selected missile with the B-52. The warheads will be ready and the terrain mapping support will be available.

d. Tankers

Although the KC-135 force can support all the current requirements, recent studies indicate that there are scenarios in which a simultaneous demand on tanker assets in response to a crisis situation could tax the force beyond present and projected capabilities. We are pursuing these studies in an attempt to isolate future needs in this area.

The transfer of 128 Unit Equipment (U.E.) active force KC-135s to the air reserve components is continuing on the schedule reported last year. By the end of FY 1978 [redacted] completing this program. The active force and the reserve components will continue to maintain the total 615 U.E. KC-135 fleet in support of strategic and general purpose forces.



KC-135 REFUELING A B-52

e. Cruise Missile Carrier Aircraft

In my preceding remarks, I discussed a new, large aircraft as a possible Cruise Missile Carrier. This concept offers the potential for considerable expansion in our strategic retaliatory capabilities, if we should encounter such a need. Detailed studies of the several commercial and military aircraft candidates will compare their performance, capacity, and cost against their survivability and development risk. As a part of the development efforts, we are considering a demonstration launch from one of these carriers as proof of concept. I strongly support the development and study efforts, based on existing aircraft designs, as one excellent hedge against a growth in future targeting requirements or other needs for more strategic capability.

f. B-1/R&D

As mentioned earlier, I view the B-1 primarily as a hedge against unexpected events. Because we see no dramatic change in the near-term threat, the chances of actually starting B-1 production again are small. I believe that it is clearly too expensive to keep production going merely to reduce prospective lead time and start-up costs.

The FY 1979 budget requests $105.5 million for continued B-1 research and development, which when added to the $98.5 million of available FY 1978 excess assets will result in a $204 million FY 1979 program. An additional $10 million is requested for other bomber studies.

g. Cruise Missiles

As discussed earlier, the air launched cruise missile program now has our highest national priority. Since we must be certain of its success, I believe we must, as a matter of prudence, maintain both the Air Force air-to-ground cruise missile AGM-86B (ALCM-B) and the air-launched version of the Navy TOMAHAWK cruise missile in full scale development until a competitive flyoff determines which missile can best be employed in the air launched mission. Both programs have been placed under the management of a Joint Cruise Missile Project Office to ensure uniform program management and facilitate the necessary interface testing that must occur between the cruise missile and the B-52 aircraft.

For the competitive flyoff, each contractor is scheduled to produce 14 test missiles leading to ten flight tests in 1979. Our earlier flight tests and those conducted in the competitive flyoff will ensure complete demonstration and evaluation of all risk areas so that we can make an air launched cruise missile selection in November 1979.

Contingent on the approval of the FY 1978 budget amendment, the accelerated development of both the air-launched TOMAHAWK and the AGM-86B cruise missiles as well as the associated B-52 modifications will provide a limited Initial Operational Capability (IOC) in March of 1980. Because of the delay in large-scale missile production that will be caused by the competitive flyoff, a full IOC will not occur until June of 1981. The FY 1979 budget requests funds for continued research and development and $178.3 million for procurement funding.

The sea launched version of the TOMAHAWK cruise missile is proceeding with full scale development, based on the recommendations of the DSARC held last year. The FY 1979 budget requests $152.1 million for missile research and development.

Production effort in connection with the Air Force Ground Launched Cruise Missile, another version of the TOMAHAWK, has been accelerated to start in FY 1979 also. This effort, funded at $40.1 million, is related primarily to production of the launcher and command and control systems.

II. STRATEGIC DEFENSIVE FORCES AND PROGRAMS

A. Program Basis

Strategic defensive programs do not provide large-scale active defense of the Continental United States against nuclear attack. We do, however, maintain forces and programs to provide:

-- Peacetime surveillance and control of sovereign U.S. airspace to respond to inadvertent or blatant violations of that airspace.

-- Challenge to enemy bombers or airborne reconnaissance vehicles entering U.S. airspace in times of crisis.

-- Warning of a bomber, missile or space attack to preclude surprise Soviet attack on our strategic retaliatory forces or the National Command Authorities.

-- Prevention of a "free ride" by Soviet bomber forces.

-- R&D hedges against Soviet abrogation of the ABM Treaty, or technological breakthroughs in ballistic missile defense.

-- Survivability of U.S. space-based systems to ensure that we can operate effectively in a hostile space environment, and negate the effectiveness of Soviet space-based systems.

-- Enhanced U.S. population survival in the event of nuclear war.

B. Program Description and Status

1. Air Defense

a. Interceptor Forces

By the end of FY 1978, the interceptor force dedicated to CONUS air defense will consist of 11 F-106 squadrons (six Active and five Air National Guard (ANG)), three ANG F-101 squadrons, and two ANG F-4 squadrons. The ANG F-106 squadrons are being reduced from six to five to permit redistribution of F-106 assets among the remaining F-106 squadrons. This change will be accomplished without reducing our total ANG units, by converting the affected F-106 squadron to F-4s.

These air defense interceptor forces, augmented by Tactical Air Command (TAC) F-4 units, maintain peacetime alert aircraft at 26 sites around the periphery of the 48 contiguous states to ensure the sovereignty of our air space. Together with three Canadian CF-101 squadrons and Air Defense Forces in Alaska, they support deterrence of air attack and ensure the integrity of North American air space. In times of crisis, additional Air Force, Navy and Marine general purpose force F-4s are tasked to augment our peacetime CONUS air defense units.

In addition, to enhance our crisis air defense capability further, I have directed the Air Force to train and provide the logistic support required to commit the equivalent of one TAC F-15 wing to CONUS air defense in a crisis. In that way, we will meet requirements for a

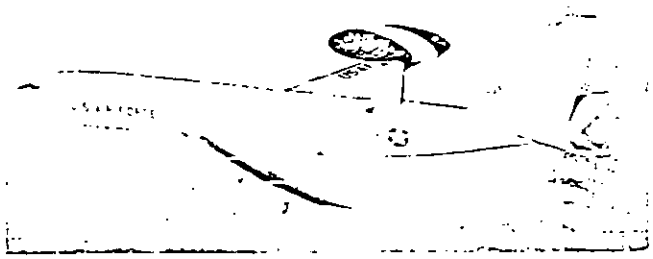
follow-on interceptor, at least on an interim basis, by using F-15s already procured or programmed for TAC, without incurring at this time the high cost of buying additional F-15s for the Aerospace Defense Command (ADCOM). Should projected enhancement in Soviet long-range bomber capabilities and the development of a Soviet cruise missile materialize, we may later wish to modernize our strategic defense force with a separate force of some follow-on interceptor (of which the F-15 would be one possibility).

We also continue to maintain an Active air defense F-4 interceptor squadron in Iceland, and an F-4 equipped, ANG tactical fighter squadron in Hawaii that performs an air defense mission. Additionally, in Alaska we maintain an Active Air Force F-4 squadron, that performs an air defense mission as well as in a tactical role. The Army also continues to maintain three active NIKE HERCULES (surface-to-air missile) batteries in Alaska, and the four general purpose force NIKE HERCULES and eight HAWK (surface-to-air missile) batteries now operational in Florida.

b. Surveillance and Command and Control Systems

We are continuing the Joint-Surveillance System (JSS) program. The CONUS airspace surveillance element of the JSS will consist of 44 surveillance radar sites. Thirty-five sites will be operated and maintained by the Federal Aviation Administration (FAA), but the radar data will be jointly used by the FAA and Air Force. The remaining nine sites in CONUS will be under military control. In Alaska there will be 14 sites: 12 Air Force, one jointly-used Air Force site, and one jointly-used FAA site. Conversion of the surveillance element of the JSS is proceeding on schedule and should be completed in 1980.

The control element of the JSS will consist of four Regional Operations Control Centers (ROCCs) in CONUS, and one in Alaska. The Canadians also plan to deploy two ROCCs as part of their modernization of the existing joint NORAD air surveillance and control system in Canada. These seven centers will provide the command and control functions required for the peacetime airspace control mission and will replace the seven costly and outdated Semi-Automatic Ground Environment (SAGE) centers in CONUS and Canada and the manual Region Control Center (RCC) in Alaska. Cost savings of more than $50 million per year are expected when these obsolete centers are phased-out. Six additional E-3A Airborne Warning and Control System (AWACS) aircraft are being procured primarily to satisfy our CONUS air defense needs. These aircraft will augment the JSS in peacetime to enhance our capability to provide surveillance and control of U.S. airspace. In a crisis, these AWACS augmented with additional aircraft from the general purpose AWACS force, would provide North America with a survivable wartime air defense command and control system. Final deployment of the ROCC element of the JSS is currently planned for FY 1981 for the CONUS centers, and FY 1982 for the center in Alaska. Canadian centers will be deployed in FY 1981.



AWACS

c. Bomber Warning

I have decided to continue the CONUS Over-the-Horizon Backscatter (OTH-B) radar R&D program at a cost of $11 million in FY 1979. Technical feasibility testing will be completed by the end of 1980, after which time we will decide if system deployment is required to satisfy our bomber warning needs along the coastal air approaches to the United States.

Since experiments have revealed that a northern-looking OTH-B radar is not feasible because of auroral effects, we are also continuing R&D on improvement of the Distant Early Warning (DEW) Line at a cost of $5 million in FY 1979. Current planning, which is proceeding in NORAD in consultation with Canadians, envisages replacing the existing DEW radars with unattended automatic radars, along with the addition of other unattended sites, to provide improved warning [redacted] against possible attack over the northern air approaches to North America.

2. Ballistic Missile Defense

a. Warning and Attack Assessment Systems

We plan to continue our policy of covering all potential strategic missile approach corridors with at least two different types of warning sensors (sensing different phenomena). Reliance will continue on the [redacted] early warning satellite systems and the Ballistic Missile Early Warning System (BMEWS) radars for warning and assessment of ICBM attacks. Use of the FPS-85 radar at Eglin and the deployment of the coastal-based phased-array radars (PAVE PAWS program) will permit phase-out of the seven obsolescent 474N SLBM warning radars now in operation, and will [redacted] provide improved warning of long-range SLBM attacks. In addition, we have completed integration of the Perimeter Acquisition Radar Attack Characterization System (PARCS, formerly called PAR) into our missile attack assessment system, and have transferred responsibility for its operation to the Air Force.

These systems, operating together, give us high confidence of unambiguous confirmation of a Soviet missile attack within a very short time after launch. Major programs are underway or planned to ensure continued effectiveness of these systems against improving Soviet strategic offensive capabilities. In addition to the deployment of improved SLBM warning radars, we are continuing to upgrade the BMEWS system to improve its reliability and attack characterization capability. [redacted]

b. Ballistic Missile Defense (BMD) Research and Development (R&D) Program

An aggressive BMD R&D program is vital to this Nation's interests: to encourage Soviet compliance with the ABM (Anti-Ballistic Missile) Treaty, protect our technological lead in BMD, and guard against their unilaterally achieving significant breakthroughs in the field. The lead enjoyed by the United States in BMD at the time we entered into the ABM Treaty has greatly diminished. With the exception of the PARCS radar used for missile warning and attack characterization, we have recently completed the deactivation of our only deployed BMD site, the SAFEGUARD facility in North Dakota. Our efforts have been completely reoriented from prototyping a system to examining more advanced concepts and technologies. The Soviets retain their Moscow ABM system in partially operational status, and continue development of advanced BMD systems. In addition, there are indications of a concerted effort on their part in technologies [redacted] having potential applications for missile defense. These are banned from deployment but not development by the ABM Treaty of 1972.

Accordingly, a carefully structured U.S. BMD R&D effort has been maintained. It consists of two complementary efforts, an Advanced Technology Program and a Systems Technology Program. The evolving BMD technological base resulting from these programs could provide, if strategic arms limitation efforts lead us in that direction, cost-effective alternatives for maintaining the survivability of our strategic retaliatory elements in the ICBM threat environment.

The Advanced Technology Program is a broad research effort on the technology of all BMD components and functions. It comprises research programs on emerging technologies currently on the fringes of the state-of-the-art. One of its principal objectives is to maintain a technological lead over the Soviet Union. In addition, the program provides the technological basis for judging Soviet developments in BMD and assisting in the evaluation of our strategic offensive forces. Program

objectives are achieved through major research efforts and key field experiments in missile discrimination, data processing, radar and optics technologies and a continuing search for revolutionary concepts and ideas.

The Systems Technology Program is a hedge against future strategic uncertainties. By drawing on the technological accomplishments from the Advanced Technology Program, this program maintains a responsive capability to develop and deploy BMD systems for a number of possible future roles. This is accomplished by directing major efforts toward the most critical aspects of BMD technology -- the integration of components and the testing of critical systems concepts. [redacted]

Kwajalein Missile Range (KMR) is operated as a national range supporting the testing of both strategic ballistic missile weapon systems and anti-ballistic missile defense systems. Advanced instrumentation in the form of radar and optical systems is available for tracking and data collection requirements. [redacted] It is necessary that we continually improve KMR's instrumentation for the benefit of both offensive and defensive systems.

3. Space Defense

The Space Defense program attempts to deal comprehensively with the threats posed by Soviet satellites and anti-satellite systems. The program is a balance between near-term procurement, advanced development, and basic R&D. Last year our commitment to this effort was increased significantly.

The reasons for a comprehensive program are twofold. On the one hand, we credit the Soviet Union with having an operational anti-satellite interceptor that could be intended for use against some of our critical satellite systems. Not only are they improving their orbital ASAT interceptor, they are also engaged in other programs, including laser activities which appear to be ASAT related. We estimate that in the absence of an agreement effectively limiting their efforts, their ASAT capability will be substantially improved by the mid-1980s. On the other hand, we see the Soviets making increased use of satellites for tactical purposes that could include the real-time targeting of U.S. ships. Their satellites represent a unique threat in the broad ocean

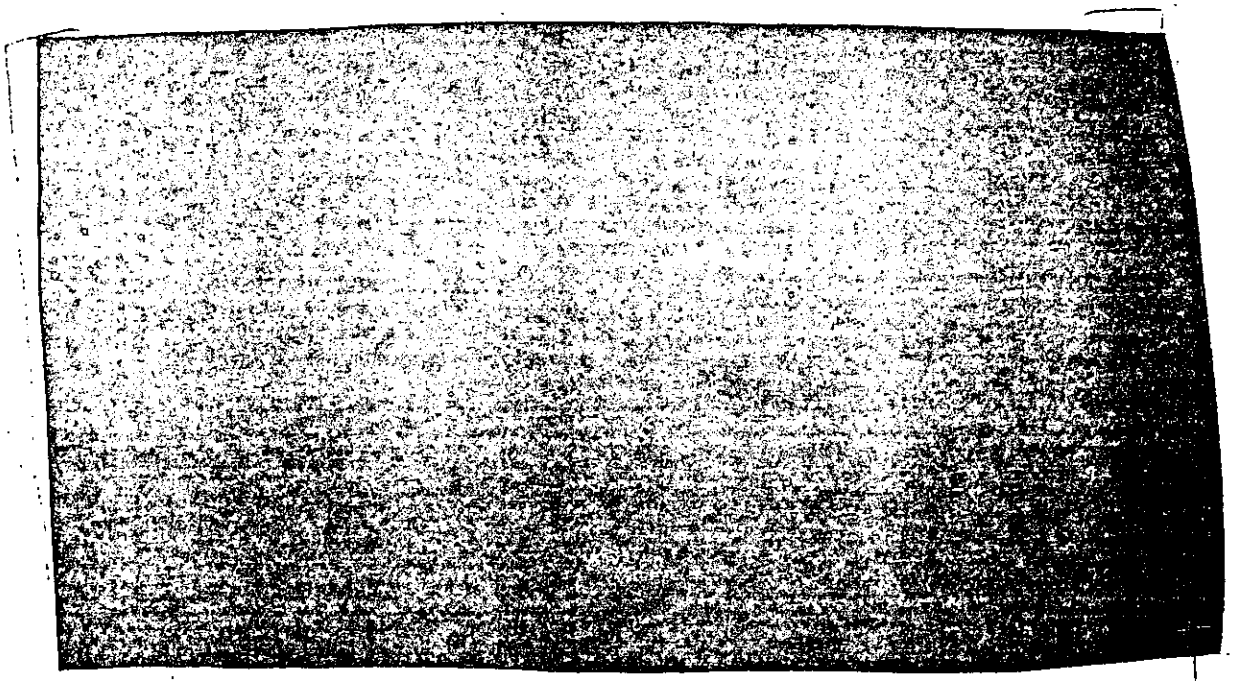
areas where the Soviets lack alternative surveillance assets. In sum, it now seems possible that activities in space could become more competitive, and that we might have to take steps to deter attacks on our satellites, to deal with attacks should they occur, and to have the capability to destroy Soviet satellites if necessary. As the President has clearly stated, it would be preferable for both sides to join in on an effective, and adequately verifiable ban on anti-satellite (ASAT) systems; we certainly have no desire to engage in a space weapons race. However, the Soviets with their present capability are leaving us with little choice. Because of our growing dependence on space systems we can hardly permit them to have a dominant position in the ASAT realm. We hope that negotiations on ASAT limitations lead to strong symmetric controls. But in the meantime we must proceed with ASAT programs (for the present, short of operational or space testing), especially since we do not know if the Soviets will accept the controls on these weapons that we would think necessary.

There are three principal elements to our FY 1979 program: (1) improved space surveillance ($36.1 million), (2) increased satellite system survivability ($19.2 million), and (3) development of anti-satellite capabilities [redacted] Together with our arms control intiatives, they represent a strongly interrelated effort to protect our security interests in space systems. In the absence of negotiated controls our program seeks a balance of operational capabilities for the early 1980s.

We are deploying attack-warning sensors on some satellites and making a major effort to bring together all the space surveillance data under a unified operational command system. In addition we are planning to improve the Space Detection and Tracking system (SPADATs) capability to detect and track satellites at high altitudes by developing and deploying the Ground-based Electro-Optical Deep Space Surveillance System (GEODSS). [redacted]

Along with survivability for each space system, we need to ensure that space launch and support capabilities that are crucial to all of these systems are also survivable. To that end, a second, more survivable, satellite control facility is under study which will increase the orbital support capabilities needed for our next generation of space systems. The space shuttle will provide an overall increase in space system survivability, since survivability measures can then be added to satellites that would otherwise make these systems too heavy to be launched by existing expendable boosters.

Of particular interest this year is our progress in research and development of an ASAT system. We have several efforts underway, [redacted]



4. Civil Defense (CD)

The strategic implications of civil defense are the subject of an ongoing interagency study directed by the National Security Council. The outcome of this study may result in recommendations for changes to the current civil defense program. In the meantime, we continue to maintain a modest civil defense program as a prudent hedge against an unlikely but disastrous event - the failure of deterrence followed by a nuclear war. The primary objective of the program is to develop a capability for surging, in about a week or two, so as to reduce significantly the vulnerability of U.S. population to a major Soviet nuclear attack. The program will provide for dual-use in peacetime emergencies as well.

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 available the week which could be required to accomplish relocation of 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 the bulk of U.S. population in localities near our strategic offensive forces installations. 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.

TABLE IA-3

Acquisition Costs of Major Strategic Forces Modernization and Improvement Programs 1/

(Dollars in Millions)

Strategic Offense	FY 1977 Actual Funding	FY 1978 Planned Funding	FY 1979 Prop'd Funding	FY 1980 Prop'd for Authorization
MINUTEMAN Improvements (Silo Upgrade, Command Data Buffer, MK-12A Warhead, NS-20 Guidance Refinements and ALCS Phase III)	466.8	113.9	122.8	107.1
Advanced ICBM Technology, including MX	69.0	134.4	158.2	513.8
Development of Advanced Ballistic Reentry Systems and Technology (ABRES)	105.9	98.9	105.0	110.0
Conversion of SSBNs to POSEIDON configuration, Modification of POSEIDON Missiles	43.5 2/	26.9	16.0	17.2
Acquisition of TRIDENT Submarines & Missiles RV (TRIDENT II not included in total)	2,165.6	2,991.6	2,476.7	3,252.5
Development of TRIDENT II Missile		5.0	16.0	205.0
SSBN Subsystem Technology Development	1.9	2.9	5.4	12.8
Improved Accuracy Program	95.0	109.9	102.3	87.9
Modifications of B-52 Strategic Bomber	68.7	129.3	292.5	437.2
Research & Development of B-1 Bomber & Other Bomber Studies	482.7	443.4	115.5	109.0
Development of the Air-Launched & Sea/Land-launched versions of the Cruise Missile	186.1	508.4	423.9	103.5

1/ The figures in this table include the cost of RDT&E, procurement of the system and initial spares, and directly related military construction.

2/ Includes $3.3 million for ship cost growth in the FY 1975 conversion program.