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REPORT OF SECRETARY OF DEFENSE

HAROLD BROWN

TO THE CONGRESS

ON THE

FY 1981 BUDGET, FY 1982 AUTHORIZATION REQUEST
AND FY 1981-1985 DEFENSE PROGRAMS

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CHAPTER 5

THE NUCLEAR CAPABILITIES

(U) It is now well understood, I believe, that the development of nuclear weapons and intercontinental delivery vehicles has transformed once and for all the security situation of the United States and its friends. From the day when these new technologies made their appearance on the world stage--with the possibility they offered of swift knockout blows against an enemy's military forces and war production base--our safety has come to depend heavily on the deterrent power and credibility of our strategic nuclear forces.

I. U.S. STRATEGIC POLICIES

(U) The most fundamental objective of our strategic policy is nuclear deterrence. Despite some initial illusions, most of us have recognized for many years that strategic nuclear capabilities alone could credibly deter only a narrow range of contingencies. While strategic nuclear weapons are not an all-purpose deterrent, they still provide the foundation on which our security is based. Only a strategic nuclear attack could threaten the extinction of the United States. For that reason, our strategic forces must be fully adequate at all times to deter--and deter persuasively--any such attack. But our nuclear forces must be able to deter nuclear attacks not only on our own country, but also on our forces overseas, as well as on our friends and allies. Nuclear forces also contribute to some degree, through justifiable concern about escalation, to deterrence of non-nuclear attacks.

A. Deterrence: The Countervailing Strategy

(S) For deterrence to operate successfully, our potential adversaries must be convinced that we possess sufficient military force so that if they were to start a course of action which could lead to war, they would be frustrated in their effort to achieve their objective or suffer so much damage that they would gain nothing by their action. Put differently, we must have forces and plans for the use of our strategic nuclear forces such that in considering aggression against our interests, our adversary would recognize that no plausible outcome would represent a success--on any rational definition of success. The prospect of such [redacted] will then deter an adversary's attack on the United States or our vital interests. The preparation of forces and plans to create such a prospect has come to be referred to as a "countervailing strategy."

(S) To achieve this objective we need, first of all, a survivable and enduring retaliatory capability to devastate the industry and cities of the Soviet Union. We must have such a capability even if the Soviets were to attack first, without warning, in a manner optimized to reduce that capability as much as possible. [redacted] known as assured destruction, is the bedrock of nuclear deterrence, and we will retain such a capacity in the future. It is not, however, sufficient in itself as a strategic doctrine. Under many circumstances large-scale countervalue attacks may not be appropriate--nor will their prospect always be sufficiently credible--to deter the full range of actions we seek to prevent.

(S) Recognizing this limitation on assured destruction as an all-purpose standard for deterrence, for many years the Defense Department has assessed the range of nuclear attacks an enemy might launch against the United States and its allies. We have examined the types of targets we should cover in retaliation, and shaped our strategic posture to maintain high confidence in our deterrent against the spectrum of possible attacks. We have recently concluded a basic re-examination of our strategic policy. [redacted] reaffirm our basic principles, but also point out new ways to implement them.

(S) We have concluded that if deterrence is to be fully effective, the United States must be able to respond at a level appropriate to the type and scale of a Soviet attack. Our goal is to make a Soviet victory as improbable (seen through Soviet eyes) as we can make it, over the broadest plausible range of scenarios. We must therefore have plans for attacks which pose a more credible threat than an all-out attack on Soviet industry and cities. These plans should include options to attack the targets that comprise the Soviet military force structure and political power structure, and to hold back a significant reserve. In other words, we must be able to deter Soviet attacks of less than all-out scale by making it clear to them that, after such an attack, we would not be forced to the stark choice of either making no effective military response or totally destroying the Soviet Union. We could instead attack, in a selective and measured way, a range of military, industrial, and political control targets, while retaining an assured destruction capacity in reserve.

(U) Such a capability, and this degree of flexibility, we have believed for some years, would enable us to:

- -- prevent an enemy from achieving any meaningful advantage;
- -- inflict higher costs on him than the value he might expect to gain from partial or full-scale attacks on the United States and its allies; and
- -- leave open the possibility of ending an exchange before the worst escalation and damage had occurred, even if avoiding escalation to mutual destruction is not likely.

(S) This is what I referred to last year as a countervailing strategy. In certain respects, the name is newer than the strategy. The need for flexibility and calibrating U.S. retaliation to the provocation is not, of course, a new discovery, whatever interpretation may have been placed on general statements of prior doctrines. It has never been U.S. policy to limit ourselves to massive counter-city options in retaliation, nor have our plans been so circumscribed. For nearly 20 years, we have explicitly included a range of employment options--against military as well as non-military targets--in our strategic nuclear employment planning. Indeed, U.S. nuclear forces have always been designed against military targets as well as those comprising war supporting industry and recovery resources. In particular, we have always considered it important, in the event of war, to be able to attack the forces that could do damage to the United States and its allies.

(U)

(S) There is no contradiction between this attention to the militarily effective targeting of the large and flexible forces we increasingly possess--to how we could fight a war, if need be--and our primary and overriding policy of deterrence. Deterrence, by definition, depends on shaping an adversary's prediction of the likely outcome of a war. Our surest deterrent is our capability to deny gain from aggression (by any measure of gain), and we will improve it. That ability is manifest in our forces and expressed in our statements. It must be recognized by any potential adversary who exhibits a self-interested regard for measuring the certain consequences of his actions before acting.

(U) (S) In adopting and implementing this policy we have no more illusions than our predecessors that a nuclear war could be closely and surgically controlled. There are, of course, great uncertainties about what would happen if nuclear weapons were ever again used. These uncertainties, combined with the catastrophic results sure to follow from a maximum escalation of the exchange, are an essential element of deterrence.

(U) (S) My own view remains that a full-scale thermonuclear exchange would constitute an unprecedented disaster for the Soviet Union and for the United States. And I am not at all persuaded that what started as a demonstration, or even a tightly controlled use of the strategic forces for larger purposes, could be kept from escalating to a full-scale thermonuclear exchange. But all of us have to recognize, equally, that there are large uncertainties on this score, and that it should be in everyone's interest to minimize the probability of the most destructive escalation and halt the exchange before it reached catastrophic proportions. Furthermore, we cannot count on others seeing the prospects of a nuclear exchange in the same light we do.

(U) (S) Therefore, U.S nuclear forces, in a state of rough quantitative parity with the Soviet Union must, just as before parity, do more than dramatize the risk of uncontrolled escalation. Our forces must be in a position to deny any meaningful objective to the Soviets and impose awesome costs in the process.

(S) As I pointed out last year, no potential enemy should labor under the illusion that he could expect to disable portions of our nuclear forces without in turn losing assets essential to his own military and political security, even if the exchange were to stop short of an all-out destruction of cities and industry. In our planning, we take full account of the fact that the things highly valued by the Soviet leadership appear to include not only the lives and prosperity of the peoples of the Soviet Union, but the military, industrial and political sources of power of the regime itself. Nor should any possible foe believe that our hands would be tied in the event that he threatened or attacked our allies with nuclear weapons. He too would place critical targets at risk, both in his own homeland and in the territory of his allies--targets, I might add, the destruction of which would undermine his political and military ability to gain control over such vital regions as Western Europe and Japan. The notion that, somehow, our only [redacted] to enemy attacks on allied targets would be to strike at enemy cities is incorrect. We have had, and will continue to improve, the options necessary to protect our interests

and, when challenged, to deny an enemy any plausible goal, no matter how he might attempt to reach it. That is the essence of our countervailing strategy to assure deterrence.

B. Other Objectives

(U) Important as deterrence is, it is only one of our strategic objectives. We must also strive to maintain stability in the nuclear balance, both over the long term and in crisis situations. Because nuclear weapons also have political significance, we must maintain actual and perceived essential equivalence with Soviet strategic nuclear forces. We also want the structure of our nuclear forces to be such as to facilitate the negotiation of equitable and verifiable arms control agreements. Finally in the event deterrence fails, our forces must be capable (as described at length above) of preventing Soviet victory and securing the most favorable possible outcome for U.S. interests.

1. Essential Equivalence

(U) In addition to their purely military capabilities, strategic nuclear forces, like other military forces, have a broader role in the world.

(U) On the U.S. side at least, it has been recognized for more than 20 years by close students of the situation that our alleged nuclear superiority could not be converted into a war-winning strategy at an acceptable cost or at an acceptable level of confidence, given feasible Soviet actions. In other words, while we must respond to the differences that follow from a world of strategic parity--and must certainly avoid parity turning into inferiority--it is simply a myth that from the standpoint of responsible policymakers, the United States has suffered a major loss of leverage because of the Soviet nuclear buildup. It is equally untrue that the supposed loss of U.S. nuclear superiority makes us any less willing to act than in those days when the Soviets threatened our allies in Europe over Suez, made life exceedingly difficult over Berlin, or deployed missiles to Cuba. If a golden age of American nuclear superiority ever existed, sober decision-makers starting with President Eisenhower never thought so at the time.

(U) That said, it is conceivable, nonetheless, that some parts of the Soviet leadership see these matters in quite a different light. Certainly without SALT, and to some degree with it, there will be dynamism in the Soviet strategic programs. The Soviets are expanding the hard-target kill capability of their ICBM force; they are MIRVing their SLBM force and increasing its range; they are continuing to upgrade their air defenses and pushing ABM research and development; their civil defense program continues to grow.

(U) In any event, many countries make comparative judgments about our strength and that of the Soviets. The behavior of all those nations will be influenced by their judgments about the state of the nuclear balance. It is in this regard that essential equivalence is particularly relevant.

(U) Essential equivalence reflects the fact that nuclear forces have a political impact influenced by static measures (such as numbers of

warheads, throw-weight, equivalent megatonnage) as well as by dynamic evaluations of relative military capability. It requires that our overall forces be at least on a par with those of the Soviet Union, and also that they be recognized to be essentially equivalent. We need forces of such a size and character that every nation perceives that the United States cannot be coerced or intimidated by Soviet forces. Otherwise the Soviets could gain in the world, and we lose, not from war, but from changes in perceptions about the balance of nuclear power. In particular we must insure that Soviet leads or advantages in particular areas are offset by U.S. leads or advantages in others. And although the United States need not match Soviet capabilities in all respects, we must also insure that the Soviet Union does not have a monopoly of any major military capability.

(U) As long as our relationship with the Soviet Union is more competitive than cooperative--and this is clearly the case for the relevant future--maintaining essential equivalence of strategic nuclear forces is necessary to prevent the Soviets from gaining political advantage from a real or perceived strategic imbalance.

2. Stability

(U) Long-term stability in the strategic balance--another objective of U.S. strategic policy--is maintained by ensuring that the balance is not capable of being overturned by a sudden Soviet technological breakthrough, either by innovation or by the clandestine development of a "breakout" potential. To accomplish this goal we must continue a vigorous program of military research and development, as well as a number of hedge programs. We must also maintain an intelligence effort which will enable us to detect Soviet technological breakthroughs or preparations for a breakout. These efforts insure that the United States is not placed at a disadvantage should the Soviets ever attempt to upset the balance.

(U) Crisis stability means insuring that even in a prolonged and intense confrontation the Soviet Union would have no incentive to initiate an exchange, and also that we would feel ourselves under no pressure to do so. We achieve crisis stability by minimizing vulnerabilities in our own forces, by improving our ability to detect a Soviet attack (or preparations for an attack), and by enhancing our ability to respond appropriately to such a situation.

3. Arms Control

(U) The United States also seeks to secure its strategic objectives through equitable and verifiable arms control agreements whenever such accords are possible. Accordingly, we will pursue negotiation and be willing to reduce or limit U.S. capabilities where Soviet programs are appropriately limited. In addition, in order to enhance the possibility of concluding meaningful limits in the future, we will maintain a capability to meet our strategic objectives in the event of failure to reach agreement. In designing our posture, we will continue to avoid giving it characteristics that might be interpreted as an intention to seek a full first-strike disarming capability.

4. The TRIAD

(U) Just as we have long had targeting options, so we have insisted for many years on maintaining a TRIAD of strategic retaliatory forces, as have the Soviets, although they differ sharply from us on the strengths they give to the legs. The U.S. TRIAD has several purposes. Perhaps the most important one is to give us high confidence that a sufficient portion of our countervailing force could ride out an enemy attack and retaliate with deliberation and control against the designated portions of the target system. Our assumption, well supported in the face of impending developments, has been that while an enemy might be able to develop the capability to knock out or otherwise neutralize one leg of the TRIAD at any given time, he would find the task of simultaneously neutralizing all three legs well beyond his ingenuity and means. We, for our part, would have the time--without a renewed fear of bomber or missile gaps--to redress any shortcomings in the exposed leg. That assumption, and maintenance of the TRIAD, are still valid today.

C. Summary

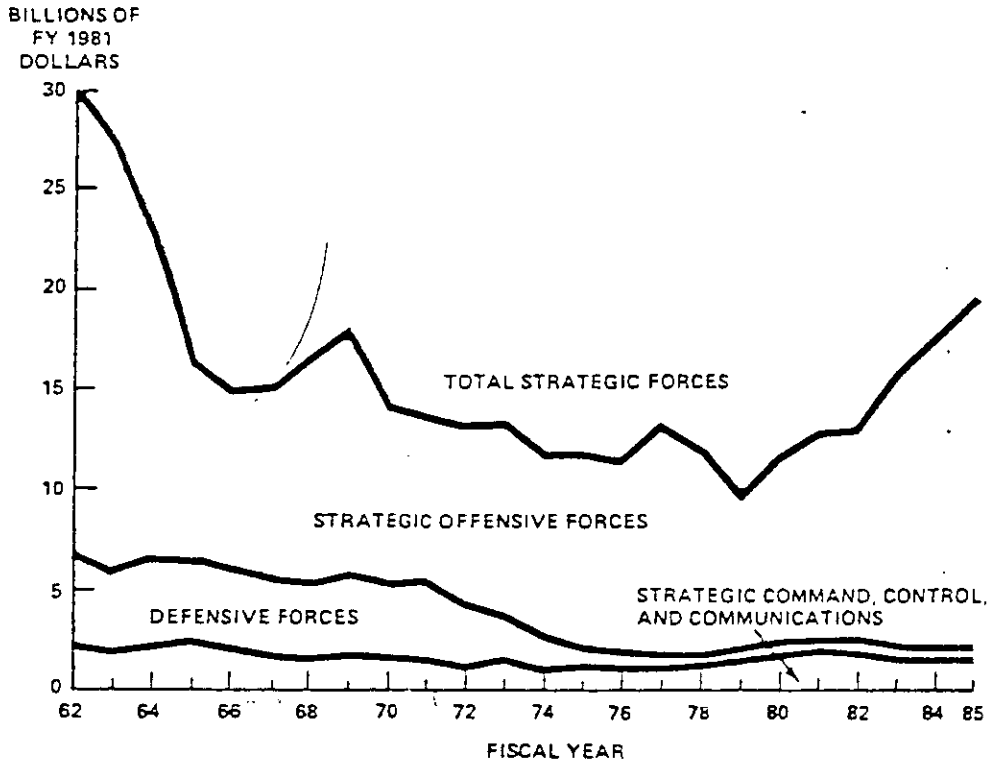
(U) ~~(S)~~ These goals set a high standard, though I believe it is one we already meet and will continue to meet. But as with other aspects of our military forces, we face critical challenges in this area. As Soviet forces have become more powerful, options appear that could seem to them to offer some hope of advantage unless we respond adequately in our forces and our plans--and are seen to do so. Moreover, the task of providing enhanced flexibility and effectiveness in response is no simple one, even from a straightforward technical point of view. And, special problems arise as we seek to ensure that we could if necessary sustain not only a brief, intense war but also a relatively prolonged exchange. All these tasks will engage our increased attention in the coming years.

II: CURRENT U.S. STRATEGIC CAPABILITIES

(U) The past and projected trend in Total Obligational Authority (TOA) allocated to the U.S. strategic nuclear forces (in the program budget) is shown in Chart 5-1.

Chart 5-1

STRATEGIC FORCES BUDGET TREND



(U) At the end of FY 1981, as in recent years, the U.S. ICBM force will continue to consist of:

-- 54 TITAN IIs;

-- 450 single-warhead MINUTEMAN IIs; and

-- 550 MINUTEMAN IIIs.

(S) Of this total, [redacted] MINUTEMAN IIIs will be refitted with the MK12A warhead, which will give each MINUTEMAN III reentry vehicle a higher kill probability against very hard targets such as silos. Eventually, a total of 300 MINUTEMAN IIIs will receive the MK12A warhead.

(S) All 10 POLARIS submarines will be retired by the end of FY 1981. The 544 U.S. submarine-launched ballistic missiles (SLBMs) [redacted] will be deployed on 33 submarines. The missile inventory will consist of:

-- 320 POSEIDON C-3s on 20 POSEIDON submarines;

-- 176 TRIDENT I C-4s on 11 POSEIDON submarines; and

-- 48 TRIDENT I C-4s on two TRIDENT submarines.

[redacted]

(U)(S) The air-breathing leg of the strategic nuclear TRIAD will have unit equipment of:

-- 316 PAA (which stands for primary aircraft authorized and substitutes for the term unit equipment) B-52 long-range bombers organized in 21 squadrons;

-- 60 PAA FB-111 medium-range bombers organized in four squadrons; and

-- 615 PAA KC-135 tanker aircraft in 33 active and 16 reserve component squadrons.

About 30 percent of the bomber/tanker force will be kept at a high level of ground alert. We will maintain the option to increase the number on alert from their peacetime level should international conditions warrant it.

(U)(S) Inventory force loadings, those independently targetable weapons in our ICBMs, SLBMs, and long-range bombers, will amount to approximately 9,200 warheads and bombs by the end of FY 1981.

(S) Our continental air defenses will be based on:

-- 108 active-duty manned interceptors in six squadrons;

-- 165 Air National Guard manned interceptors in 10 squadrons; and

-- Seven Airborne Warning and Control System (AWACS) aircraft.

These aircraft, together with one squadron of 18 manned interceptors in Alaska and two Canadian squadrons of 36 manned interceptors, provide the 327 combat-capable aircraft dedicated to North American air defense. Depending on the nature of an emergency, CONUS-based fighters and additional CONUS-based AWACS aircraft could augment the dedicated air defenses. All dedicated surface-to-air missiles (SAMs) have been phased out of the basic CONUS defense system. While we will continue to base some Army SAM units at CONUS training installations, their primary mission is to support the Field Army.

(U)(S) In 1976, our one anti-ballistic missile (ABM) installation, located in North Dakota and deployed to defend a MINUTEMAN wing, was deactivated and dismantled. However, we continue to keep its Perimeter Acquisition Radar Attack Characterization System (PARCS) operational as a missile warning and attack characterization sensor.

(S) The first and most important signals in our system to provide surveillance and early warning of missile attacks will continue to come from the [redacted] satellite [redacted] The Ballistic Missile Early Warning System (BMEWS) and the PAVE PAWS SLBM Radar Warning System will provide both radar confirmation of DSP reports and additional attack characterization data. Warning of attacks by air-breathing systems will come from the Distant Early Warning (DEW) Line along the 70th parallel, the PINETREE Line in mid-Canada, and CONUS-based radars. Over-the-Horizon (OTH) radar will remain in prototype development status.

(U) Our civil defense program, which we consider as part of our strategic capability, continues to be of modest proportions. Responsibility for the program has now been transferred to the Federal Emergency Management Agency (FEMA). However, I continue to have a responsibility for overseeing the program so as to ensure that civil defense complements our other strategic policies. The current program does not reflect any change in the U.S. policy of continuing to rely primarily on our strategic nuclear retaliatory forces for deterrence. Its primary focus remains the planning of how to relocate our people (particularly those in the high-risk areas around our strategic forces) to low-risk areas during a crisis of days or weeks so as to reduce their vulnerability to major nuclear attack. The program also focuses on improved emergency communications and the survey of shelter spaces that would provide fallout protection for people near their places of work or residence. About $120 million will be programmed for these activities in FY 1981, but not in the defense budget.

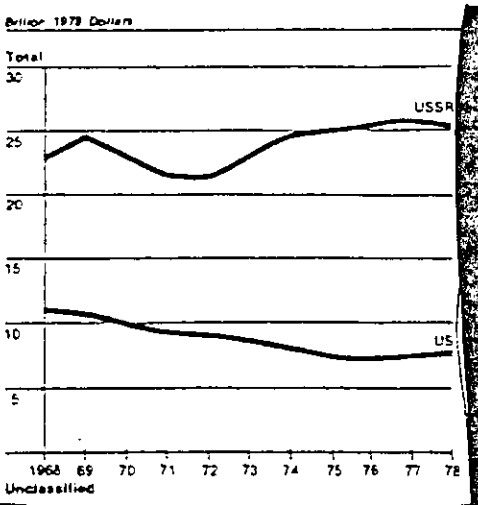
III. SOVIET STRATEGIC CAPABILITIES

(U) The Soviets, regrettably, do not make it entirely clear to what extent they share the limitations we have set on the goals of our strategic programs. On the one hand, they accept the Anti-Ballistic Missile Treaty and negotiated SALT II--with all the restrictions imposed by these agreements--which assist our maintenance of a balanced, second-strike offensive capability that has a high probability of reaching its targets. On the other hand, the improvements they have made in their ICBMs, their continued emphasis on anti-bomber, anti-missile, and strategic anti-submarine defenses, together with their ongoing civil defense program, can be seen as a concerted effort to take away the effectiveness of our second-strike forces.

(S) The estimated constant-dollar cost to the United States of reproducing Soviet strategic activities, along with comparable U.S. outlays, are shown in Table 5-1. The Soviets are believed to have been devoting over 3.3 times the resources to strategic forces in 1978 that the United States did. However, when the costs of peripheral attack forces (some of which could reach the U.S. on some missions) and strategic defense forces are removed from the comparison, the Soviets outspent us on intercontinental attack forces by about a factor of 1.5.

Table 5-1

STRATEGIC FORCES
A Comparison of US Outlays With Estimated Dollar Costs of Soviet Activities

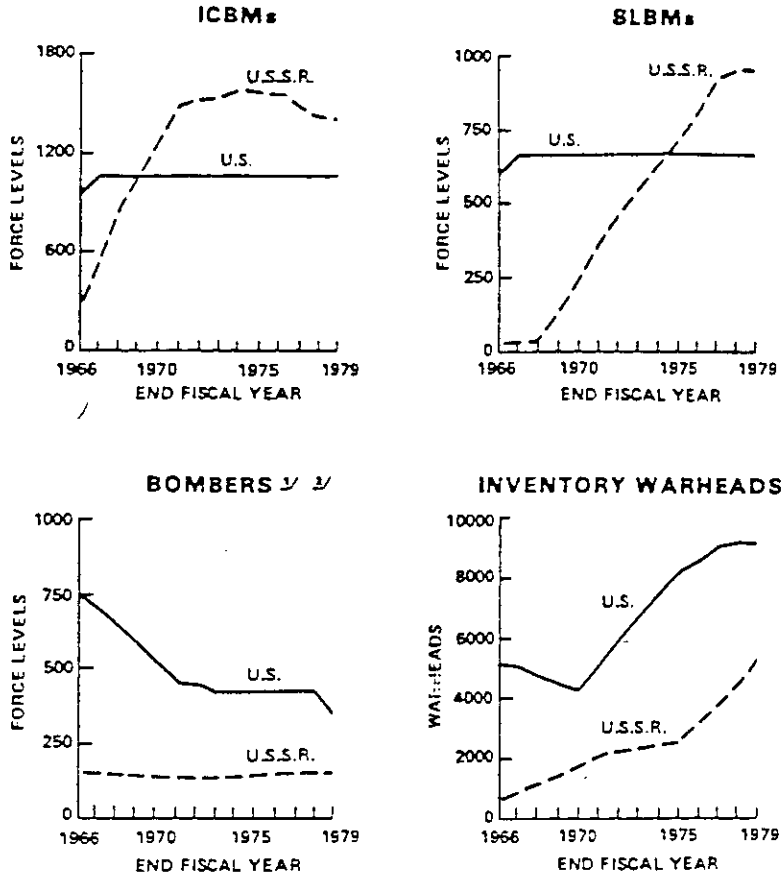


A. Offense

(S) The trend in Soviet and U.S. strategic offensive forces since 1966 is shown in Chart 5-2. As of January 1, 1980, the Soviets had deployed 2,504 strategic nuclear delivery vehicles, or about a hundred more than the total that would be permitted under the initial SALT II ceiling of 2,400, and some 10 percent more than they would be allowed under the final SALT II ceiling of 2,250. The ballistic missile component of this capability consists of 1,398 ICBM launchers (of which more than [redacted] are MIRVed) and 950 SLBM launchers (of which [redacted] are MIRVed) in 62 modern ballistic missile submarines.

Chart 5-2

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



1/ FB-111 and BACKFIRE are excluded

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

(S) Under the provisions of SALT I, the Soviets have deactivated 209 of their older SS-7 and SS-8 ICBM launchers, and have removed the missile launchers from four YANKEE-class SSBNs; these may eventually be converted to nuclear attack submarines (SSNs). [redacted]

(S) The Soviet long-range bomber force now consists of 156 BISON and BEAR aircraft. In addition, the Soviet Long-Range Aviation (LRA) contains about 30 BISON tankers and [redacted] BEAR reconnaissance aircraft. The LRA also includes about [redacted] BACKFIRE strike aircraft, and [redacted] BADGER and [redacted] BLINDER aircraft of all types. Another [redacted] BACKFIREs are in Soviet Naval Aviation.

(S) The BACKFIRE bomber has been in production for ten years. In its various versions, a total [redacted] aircraft have been [redacted] deployed. Its rate of production [redacted] limited to 30 aircraft a year under the commitments made by the Soviets at the Vienna Summit in June, 1979. We continue to believe that the BACKFIRE's primary functions are to perform peripheral attack and naval missions. However, it undoubtedly has some intercontinental capability in the sense that it can (for example) surely reach the United States from Soviet home bases on a one-way, high-altitude, subsonic, unrefueled flight with recovery in the Caribbean area. With Arctic staging, refueling, and certain high altitude cruise flight profiles, it can probably execute a two-way mission to much of the United States.

(U) ~~(S)~~ We estimate that total Soviet force loadings (independently targetable weapons that can be carried by the deployed strategic missiles and bombers) have risen from around 450 in 1965 to more than 6,000 at the present time. The total has increased by about 1,000 since last year, which reflects the continued deployment of MIRVed ICBMs and SLBMs.

B. Active Defenses

(S) Numerically, Soviet active defenses have not changed appreciably during the past year. The Moscow ABM defense system still consists of only 64 GALOSH missile launchers, although the ABM Treaty of 1972 permits expansion of the system to 100 launchers. [redacted]

(S) Anti-bomber defenses depend on about 2,600 manned interceptors and [redacted] SAM launchers [redacted] The SAM launchers actually can accommodate around [redacted] missiles since some of the launchers have multiple rails. There currently are eight classes of manned interceptors deployed, which suggests that the Soviets may have a standardization problem of their own. A limited airborne early warning and control capability is based on nine modified TU-126 MOSS aircraft. These probably have some lookdown capability, but it does not appear to extend to low-altitude targets. It is clear that the Soviets are about to begin deploying a significant look-down shoot-down capability in some versions of the MIG-25.

(S) As I noted last year, the Soviets have an operational but limited anti-satellite ~~(ASAT)~~ capability. [redacted]

(U) The U.S. and Soviet strategic postures as of January 1, 1979, and January 1, 1980, are shown in Table 5-2.

Table 5-2

U.S. AND SOVIET STRATEGIC FORCE LEVELS

	1 JANUARY 1979		1 JANUARY 1980	
	U.S.	USSR	U.S.	USSR
OFFENSIVE OPERATIONAL ICBM LAUNCHERS 1/ 2/	1,054	1,398	1,054	1,398
OPERATIONAL SLBM LAUNCHERS 1/ 3/	656	950	656	950
LONG-RANGE BOMBERS (TAI) 4/ OPERATIONAL 5/ OTHERS 6/	348 221	[redacted]	348 225	156
FORCE LOADINGS 7/ WEAPONS	9,200	[redacted]	9,200	[redacted]
DEFENSIVE 8/ AIR DEFENSE SURVEILLANCE RADARS INTERCEPTORS (TAI) SAM LAUNCHERS ABM DEFENSE LAUNCHERS	99 327 0 0	7,000 [redacted] 64	88 327 0 0	7,000 [redacted] 64

[redacted]

1/ INCLUDES ON-LINE MISSILE LAUNCHERS AS WELL AS THOSE IN CONSTRUCTION, IN OVERHAUL, REPAIR, CONVERSION, AND MODERNIZATION.
2/ DOES NOT INCLUDE TEST AND TRAINING LAUNCHERS OR 18 LAUNCHERS OF FRACTIONAL ORBITAL MISSILES AT TYURA TAM TEST RANGE.
3/ INCLUDES LAUNCHERS ON ALL NUCLEAR-POWERED SUBMARINES AND, FOR THE SOVIETS, OPERATIONAL LAUNCHERS FOR MODERN SLBMs ON G-CLASS DIESEL SUBMARINES. 13 G-II SSBs WITH A TOTAL OF 39 TUBES THAT ARE NOT ACCOUNTABLE UNDER SALT ARE EXCLUDED.
4/ 1980 FIGURES EXCLUDE, FOR THE U.S.: 66 FB-111s; FOR THE USSR [redacted]
5/ INCLUDES DEPLOYED, STRIKE-CONFIGURED AIRCRAFT ONLY.
6/ INCLUDES, FOR U.S., B-52s USED FOR MISCELLANEOUS PURPOSES AND THOSE IN RESERVE, MOTHBALLS OR STORAGE, AND 4 B-1 PROTOTYPES; FOR THE USSR: BEARS AND BISONS USED FOR TEST, TRAINING, AND R&D.
7/ TOTAL FORCE LOADINGS REFLECT THOSE INDEPENDENTLY-TARGETABLE WEAPONS ASSOCIATED WITH THE TOTAL OPERATIONAL ICBMs, SLBMs AND LONG-RANGE BOMBERS.
8/ EXCLUDES RADARS AND LAUNCHERS AT TEST SITES OR OUTSIDE NORTH AMERICA
9/ THESE LAUNCHERS ACCOMMODATE ABOUT 12,300 SAM INTERCEPTORS. SOME OF THE LAUNCHERS HAVE MULTIPLE RAILS.

[redacted]

C. Passive Defenses

(U) (S) Civil defense in the Soviet Union is an ongoing nationwide program under military control. It is not a crash effort, but its pace increased beginning in the late 1960s. It is directed by a highly structured organization led by a General who is also a Deputy Minister of Defense. The operating personnel in the program--those who would supervise civil defense actions in a crisis--are organized into military civil defense units, communications elements, and civilian formations. We estimate the number of full-time civil defense personnel to be about 120,000. Counting all civilian units and formations supposedly available, the total number of people in the program would be upwards of 16 million. The combined costs of three major elements of the

program, salaries for full-time civil defense personnel, operation of military units for civil defense, and construction of blast shelters probably represented something less than one percent of Soviet defense spending in 1978. The United States, by contrast, has been spending only about a tenth of one percent of its smaller defense budget on civil defense.

(U) Hardened command posts have been constructed near Moscow and other cities. For the some 100,000 people we define as the Soviet leadership, there are hardened underground shelters near places of work, and at relocation sites outside the cities. The relatively few leadership shelters we have identified would be vulnerable to direct attack.

(S) The Soviets could probably shelter about 6-to-12 percent of the total work force at key industrial installations. Exactly how many would depend on shelter occupancy factors, which would have to be as low as one square meter or 0.5 square meters per person in order to accommodate either of these numbers. Nationwide, the Soviets have probably constructed at least 20,000 blast-resistant shelters, more than half of which are intended for key industrial workers. With an occupancy factor of 0.5 square meters, they can protect approximately 13 million people, or roughly 10 percent of the total residents in cities of 25,000 people or more. Some additional protection would be available to the Soviet population in the form of subway tunnels and stations. However, the vast majority of the urban population would have to be evacuated from cities in order to receive some degree of protection. On the average, two or three days would be required to evacuate the major portion of these people, but it could take as much as a week to clear larger cities such as Moscow and Leningrad of all but essential personnel. The required times could be lengthened by shortages of transportation, other bottlenecks, or adverse weather. Evacuees would be quartered in rural areas and required to construct expedient shelters. There is no evidence that evacuation exercises have been conducted involving the movement of large numbers of people. However, we do have evidence of small-scale evacuations and numerous exercises with civil defense staffs.

(S) The Soviet program for the geographic dispersal of industry, as indicated in Table 5-3, is not being implemented to any significant degree. New plants have often been built next to major existing plants. Existing plants and complexes have been expanded. No effort has been made to increase the distance between buildings or to locate additions in such a way as to minimize fire and other hazards in the event of a nuclear attack. Previously open spaces at fuel storage sites have been filled with new storage tanks and processing units. In sum, the value of overall productive capacity has been increased proportionately more in existing sites than in new areas.

Table 5-3

Estimated Cumulative Percentage Distribution of Soviet Population and Industrial Production

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

(U) Little evidence exists to suggest a comprehensive program for hardening Soviet economic installations. Published civil defense guidelines acknowledge the high cost of such measures, and the Soviets appear to have given greater emphasis to the rapid shutdown of equipment and other measures that could facilitate longer term recovery after an attack.

(S) The Soviets will probably continue to emphasize the construction of urban blast sheltering. If the current pace of construction is continued, the number of people that can be sheltered will increase [redacted] in 1988. The actual percentage of the population that can be sheltered in cities of 25,000 people or more will increase from the current 10 percent [redacted] but the absolute number of people that would have to be evacuated will also increase because of growth in the urban population. During the same time, the continuing concentration of economic investment in previously existing plant sites, together with an absence of construction-hardening techniques, suggests that a future attack on urban-industrial targets would be about as destructive as now. Soviet leaders may continue to believe that civil defense contributes to war-survival and war-fighting capabilities, but their uncertainties about its actual effectiveness will continue.

D. Force Improvements

(U) The Soviets are continuing to modernize their strategic forces and related capabilities at a steady pace. While their offensive systems are understandably the center of attention, it must be stressed that they are allocating substantial resources to the improvement of their active and passive defenses as well.

1. Offense

(S) The deployment of the SS-17, SS-18, and SS-19 ICBMs has continued at a rate of approximately 125 total launchers a year. There are now more than 200 SS-18s in converted SS-9 silos. The vast majority of these are

of the eight and 10-MIRV variety. About 150 SS-17s and more than 200 SS-19s are now deployed in converted SS-11 silos. All of the converted silos may be capable of withstanding static overpressures [redacted]

(S) The Soviets are believed to have a substantial number of excess missiles, [redacted] Most of these missiles are older ICBMs that have been replaced by newer models and cannot be launched operationally because they are not compatible with existing launchers. There is no evidence that production of missiles for which there are existing launchers (SS-17, SS-18, and SS-19) is significantly greater than the number of those launchers. Although the SS-17 and SS-18 are designed for cold launch and could therefore in principle take reloads in a relatively short time, there is no evidence that the Soviets have any plan or capability to use excess missiles as reserves, or refires. We are quite confident they have not tested or trained in those ways.

[redacted]

Table 5-4

SECRET (FORMERLY RESTRICTED DATA)

MISSILE	SS-16	SS-17		SS-18				SS-19		
MISSILES DEPLOYED	*	ABOUT 150		MORE THAN 200				MORE THAN 200		
		MOD		MOD				MOD		
		1	2	1	2	3	[redacted]	1	[redacted]	2
WARHEADS	1	4	1	1	8/10	1	[redacted]	6	[redacted]	1
[redacted]										
MAX. RANGE (KM) **	6,200	10,000	11,000	12,000	11,000	16,000	[redacted]	9,600	[redacted]	10,100
LAUNCH MODE	HOT	COLD	COLD	COLD	COLD	COLD	[redacted]	HOT	[redacted]	HOT
FUEL	SOLID-	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	[redacted]	LIQUID	[redacted]	LIQUID
[redacted]										

* NONE DEPLOYED

** EXCLUSIVE OF RANGE IMPARTED BY POST-BOOST VEHICLE

(FORMERLY RESTRICTED DATA) SECRET

(S) The SS-16 is a solid-fuel, three-stage ICBM with a post-boost vehicle (PBV), but flight-tested with only a single warhead. It has been flight-tested only once since 1975, and then unsuccessfully. It was designed for deployment in a mobile mode. Its production, deployment, and testing are expressly banned by SALT II. [redacted] the SS-16 has not been deployed [redacted] The main current significance of the SS-16 is that the SS-20--a mobile intermediate-range ballistic missile (IRBM)--is a derivative of it.

(S) The Soviets still have their follow-on series of ICBMs and SLBMs in development. There are at least [redacted] ICBMs in this series, some of them probably modifications of ICBMs already deployed. [redacted]

(S) In the past, the Soviets kept [redacted] percent of their ICBMs on what we would consider a quick-reaction alert. Today, with the deployment of more modern vehicles, we estimate that most if not all are on a high alert. Soviet long-range and medium bombers do not maintain a peacetime quick-reaction alert.

(S) Modernization of the Soviet SLBM force continues. Construction of the YANKEE-class submarine stopped five years ago at 34 boats (544 tubes) armed with the 3,000-kilometer liquid-fuel SS-N-6 missile. [redacted] of the boats have had their missile tubes removed and eventually may be converted to SSNs. One other YANKEE has been backfitted with the 3,000 to 4,000-kilometer SS-NX-17, a solid-fueled missile with a post-boost vehicle and greater accuracy than the SS-N-6 [redacted]

(S) [redacted] They now have a total of 32 operational DELTA-class submarines [redacted] the 12-tube DELTA Is with the SS-N-8, a single-warhead, liquid-fuel missile with a range of about [redacted] kilometers. There [redacted] DELTA IIs with 16 tubes; they are also armed with the SS-N-8. The [redacted] DELTA IIIs in service (each with 16 tubes) carry the SS-N-18, a liquid-fuel missile with a range of 6,500-to-7,700 kilometers and a post-boost vehicle capable of dispensing three MIRVs in one version and seven in another. In addition, a new large SSBN continues under construction. It may be a larger version of the DELTA, or what the Soviets refer to as TYPHOON [redacted]

(U) ~~(S)~~ Both the SS-N-8 and the SS-N-18 permit the Soviets to cover targets in the continental United States from patrol areas in the Barents Sea and Sea of Okhotsk. This, coupled with the advent of MIRVs in the Soviet force structure, increases the number of SLBM warheads they are able to keep on station. [redacted]

[redacted]

(S) For some time, we have been expecting but have not yet detected the roll-out of one or more types of new, long-range Soviet bombers. We assume that if any of these aircraft appears, and goes into series production [redacted] it will replace the old BISONs and BEARs as the mainstay of the Soviet intercontinental bomber force. About two-thirds of the BEAR aircraft are configured to carry one AS-3 air-to-surface missile (ASM). The BACKFIRE can carry two AS-4 ASMs [redacted] they may be working on a long-range cruise missile of their own design.

2. Defense

(S) The Soviets continue to engage in an active and costly ABM research and development effort, as both sides are permitted to do under the ABM Treaty of 1972. Their main concentration appears to be on improving the performance of their large phased-array detection and tracking radars, and on developing a rapidly deployable ABM system which includes a [redacted] interceptor [redacted] Although the Soviets may be investigating the application of high-energy lasers and even charged particle beams to ABM defenses, severe technical obstacles remain in the way of converting this technology into a weapon system that would have any practical capability against ballistic missiles. We still have no evidence, moreover, that the Soviets have devised a way, even conceptually, to eliminate these obstacles.

(S) The SA-X-10 surface-to-air missile (SAM) is expected to be deployed soon and will be able to engage aircraft-sized targets [redacted] at any altitude [redacted] it will almost certainly have some capability against a cruise missile within a small engagement envelope. [redacted]

(S) The Soviets have not yet managed a solution to the problem of intercepting bombers and cruise missiles penetrating their defenses. However, a number of systems near initial operating capability (IOC), if deployed, will improve their capability. A modified FOXBAT is under development with a look-down capability [redacted]

(S) The Soviets continue their efforts to develop an anti-submarine warfare capability both against alliance SSBNs and in protection of their own SSBNs. However, the performance of their ASW forces is improving only gradually, and remains substantially below that of comparable U.S. forces. The VICTOR-class nuclear-powered attack submarine (SSN) remains the most capable Soviet ASW platform. At present, however, neither it nor other currently deployed Soviet ASW platforms constitute a significant threat to our SSBNs [redacted]

E. Soviet Doctrine

(U) I have outlined earlier the objectives of U.S. strategic nuclear forces--deterrence, stability, and essential equivalence--and in particular the countervailing strategy which guides our efforts to maintain deterrence. Articulation of the principles of our countervailing strategy focuses us on an obvious but too often ignored point: to deter effectively we must affect the perceptions of Soviet leaders whose values, objectives, and incentives differ sharply from our own. Our understanding of Soviet concepts of the role and possible results of nuclear war is uncertain. This is partly because our evidence is ambiguous and our analysis clouded by that ambiguity, and partly no doubt because even in the totalitarian Soviet state different leaders address these inherently uncertain issues from different perspectives.

(U) Soviet leaders acknowledge that nuclear war would be destructive beyond even the Russian historical experience of the horrors of war. But at the same time some things Soviet spokesmen say--and, of even more concern to us, some things they do in their military preparation--suggest they take more seriously than we have done, at least in our public discourse, the possibility that a nuclear war might actually be fought. In their discussion of that prospect, there are suggestions also that if a nuclear war occurred, the time-honored military objectives of national survival and dominant military position at the end of the fighting would govern and so must shape military preparations beforehand.

(U) Beyond the murky teachings of these doctrinal presentations, the Soviet leaders make evident through their programs their concerns about the failure of deterrence as well as its maintenance, and their rejection of such concepts as minimum deterrence and assured destruction as all-purpose strategic theories. Those concerns are understandable; some of us share them ourselves. What must trouble us, however, is the heavy emphasis in Soviet military doctrine on the acquisition of war-winning capabilities, and the coincidence (in one sense or another of that word) between their programs and the requirements of a deliberate war-winning strategy.

(U) I recognize that the current generation of Soviet political leaders has been cautious about actions which could lead to nuclear war, and that published Soviet military doctrine may not fully reflect its views. Nevertheless, these leaders should know by now, as we learned some years ago, that a war-winning strategy--even with high levels of expenditures--has no serious prospect of success either in limiting damage in an all-out nuclear

exchange or in providing meaningful military superiority. The enduring validity of this conclusion depends, of course, on our taking the necessary countermeasures ourselves. If Soviet efforts persist, and we do not counter them, the Soviets may succumb to the illusion that a nuclear war could actually be won at acceptable, if large, cost. Accordingly, it is essential to continue to adapt and update our countervailing capabilities so that the Soviets will clearly understand that we will never allow them to use their nuclear forces to achieve any aggressive goal at an acceptable cost. This is a feasible U.S. goal, whatever one's view of the doctrinal issues; however, it does require that we carry out the force improvement measures I am presenting here.

(U) To recognize that strong war-winning views are held in some Soviet circles--and that Soviet advocates of such concepts as minimum deterrence or assured destruction are rare or absent--is not necessarily to cast any accusation of special malevolence, for these are traditional military perspectives by no means unreflected even in current Western discussion of these matters. Still less is it to say that the Soviets are not subject to deterrence. The task, to paraphrase a thinker familiar to the Soviet leadership, is not to debate deterrence with the Soviets, but to maintain it in our competition with them. There is, to be sure, little evidence of any Soviet view corresponding to that sometimes expressed in the West that assured destruction as a strategy would be a positive good, making further military analysis unnecessary or even wrong. But there is at the same time every reason to believe that the Soviet leadership has in fact been deterred and can continue to be, not by theory, but by recognition of the certain costs of aggression to things most valued by that leadership.

IV. OTHER NUCLEAR CAPABILITIES

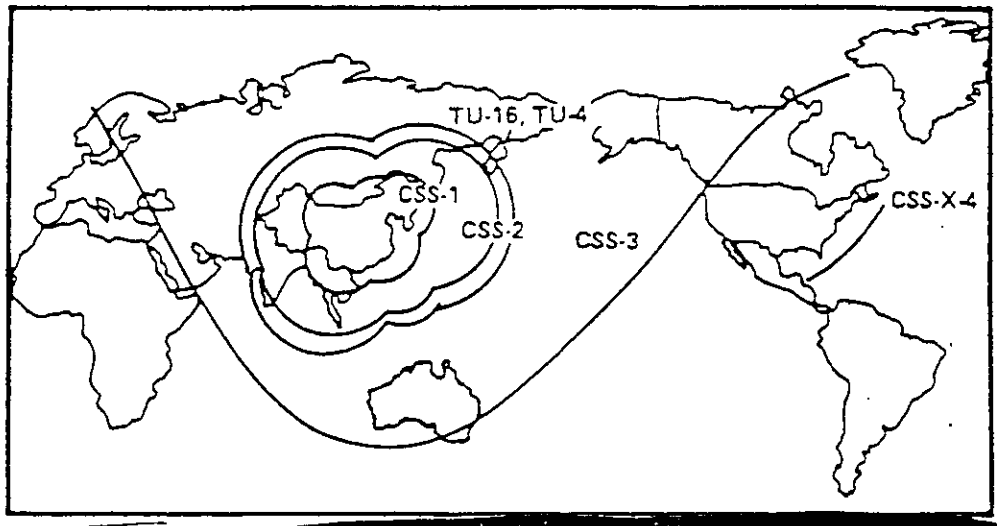
(U) In addition to the United States and the Soviet Union, three countries have deployed strategic nuclear capabilities. Great Britain continues to maintain four RESOLUTION-class SSBNs, armed with 64 POLARIS A-3 missiles, and 56 VULCAN bombers. The close U.S. cooperation with this capability reflects our judgment that the British force, which is committed to NATO, contributes to our mutual defense interests. The British are considering a replacement for their SSBNs and SLBMs, and have scheduled the VULCANs for retirement in the near future.

(U) France has four REDOUBTABLE-class SSBNs which will have 64 M-2 or M-20 missiles, and plans to deploy two more SSBNs and modernize her SLBMs with the M-4 system, which has some limited MIRV capability. She also deploys 18 IRBMs and 34 MIRAGE IVA aircraft supported by 11 KC-135F tankers.

(S) The People's Republic of China currently deploys three types of liquid-fuel ballistic missiles: [redacted] MRBMs (the CSS-1) with a range of [redacted] kilometers; [redacted] IRBMS (the CSS-2) with a range of [redacted] kilometers; and [redacted] multi-stage ICBMs (the CSS-3) with a maximum range of 7,000 kilometers. The Chinese, in addition, have [redacted] TU-16 (BADGER) and [redacted] TU-4 (BULL) medium-range bombers with an operational radius of about 3,000 kilometers. The areas covered by these delivery vehicles are shown in Chart 5-3.

Chart 5-3

RANGE OF PEOPLE'S REPUBLIC OF CHINA STRATEGIC SYSTEMS



[redacted]

(S) The PRC still has under development a full-scale, liquid-fuel ICBM (the CSS-X-4) with a range estimated at [redacted] kilometers. The missile has been tested only inside China and at reduced ranges, but it has been used successfully as a satellite launcher. There is no progress to report on the SLBM program of the PRC, although work probably continues on a nuclear-powered submarine and a solid-fuel missile to go with it.

[redacted]

V. ADEQUACY OF THE U.S. STRATEGIC CAPABILITIES

(U) It is, of course, the Soviet nuclear force (not that of our British and French allies, or of China) that must be of primary concern to us. What, in particular, is the significance of recent Soviet strategic nuclear developments, and what do these developments signify for the design of our nuclear strategy and force structure?

(S) At present, there are excellent grounds for confidence in the U.S. strategic deterrent. Our alert bombers, SLBMs on patrol, and a number of our ICBMs could be expected to survive even a well-executed Soviet surprise attack. More than [redacted] warheads could be launched in a comprehensive retaliation, and most of the bombers and missiles should be able to penetrate to their targets. If the U.S. force were generated to a high alert before being attacked, more than [redacted] warheads could be launched. We would also have the option to withhold a number of these warheads and use a part of the force with deliberation and control against subsets of targets. However, we would not have high confidence, on a second strike, of destroying the majority of the Soviet ICBM silos and other very hard targets with our quick-reacting missile forces, although our bomber weapons (bombs now and ALCMs later) would have a good albeit delayed capability against hard targets.

(U) The Soviets, at the present time, would have a somewhat comparable capability. Even supposing a U.S. first strike, they too would have a substantial number of surviving weapons. However, they could not cover as many targets, since their inventory of surviving alert warheads would be smaller. As with the United States, if the Soviets generated their offense prior to being attacked, the number of their surviving weapons would increase.

(U) Because of this Soviet capability, which matches ours for all practical purposes, we have a situation of essential equivalence. It can also be said with some confidence that a state of mutual strategic deterrence is currently in effect. It follows that nuclear stability would probably prevail in a crisis as well.

(S) Longer-term stability is not equally assured. The most immediate source of future instability is the growing Soviet threat to our fixed, hard ICBMs. Although the Soviets have only just begun to deploy a version of the SS-18 ICBM with 10 MIRVs, within a year or two we can expect them to obtain the necessary combination of ICBM numbers, reliability, accuracy, and warhead yield to put most of our MINUTEMAN and TITAN silos at risk from an attack with a relatively small proportion [redacted] of their ICBM force. For planning purposes, therefore, we must assume that the ICBM leg of our TRIAD could be destroyed within half an hour as one result of a Soviet surprise attack.

(U) To say this is not to imply that the probability of a Soviet surprise attack will increase as this hypothetical vulnerability grows greater. Prudent Soviet leaders would not be certain of obtaining the necessary performance from or coordination in their forces to make such an attack effective. Nor could they be sure that we would not launch our ICBMs on warning or under attack (as we would by no means wish to rely on having to do so). However, less prudent or more desperate Soviet leaders might not be constrained by these considerations.

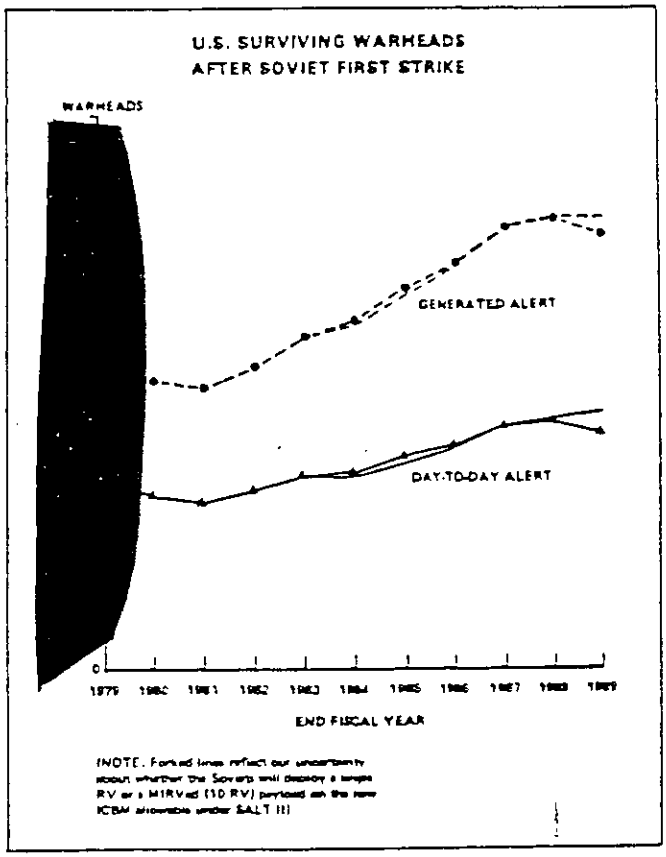
(S) Still, even if the Soviets were able, in a surprise attack in the 1980s, to eliminate most of our ICBMs, all our non-alert bombers, and all our ballistic missile submarines in port, we would be able to launch more than [redacted] warheads at targets in the Soviet Union in retaliation. And we would still have the option of withholding a number of these warheads while directing still others to a variety of non-urban targets, including military targets of great value to the Soviet leadership.

(U) These results, in general terms, are shown in Chart 5-4. In other words, the hypothetical ability of the Soviets to destroy over 90 percent of our ICBM force cannot be equated with any of the following: a disarming first strike; a Soviet advantage that could be made meaningful in an all-out nuclear exchange; a significant contribution to a damage-limiting objective; or an increased probability of a Soviet surprise attack. It would amount to none of these. What it would amount to is that the United States, in these hypothetical circumstances, could lose an important leg of the TRIAD and a significant but not crippling number of valuable warheads. We would suffer a loss in our ability to attack time-urgent hard targets and a reduction in the flexibility with which we could manage our surviving forces. However, as Chart 5-4 indicates, despite growing MINUTEMAN vulnerability, the total number of surviving U.S. warheads would actually increase after 1981, because of TRIDENT and ALCM deployments, followed by MX.

(S) In the decade ahead, we will have strategic retaliatory forces sufficient to deter Soviet attack, not only by the risk of escalation to massive destruction of cities and industry, but also by the certainty of our ability to destroy, on a more selective basis, a range of military and industrial targets and the seats of political control [redacted] surely deny the Soviet Union any advantage from embarking on a course of action that could lead to nuclear exchanges.

(U) I must add this important caveat, however: my assessment is based on the assumption that Soviet forces remain within the limits set by SALT II. Should the treaty fail of ratification, and should Soviet force levels then increase (as I believe and, in any event, must assume they would), we would have to make a larger commitment of resources to the strategic nuclear element of our defense--a commitment which, though then necessary, would not improve our security beyond that available--at far lower cost--given ratification of SALT II.

Chart 5-4



(U) If our situation promises to be so favorable with SALT, why is such an issue being made over MINUTEMAN vulnerability, and why do we need to go to the expense of the mobile MX ICBM, particularly an MX with a significant hard-target kill capability of its own? Why should we not settle for the new status quo and plan to launch our ICBMs on warning, or replace MINUTEMAN--if we must replace it at all--with what some would call a less threatening (meaning less versatile and effective) system than MX?

(U) These questions have several answers. The first is that it is one thing (and by no means an easy one) to have an operational capability to launch nuclear weapons, with warning or under attack. It is quite another matter to be obliged to launch them simply in order to avoid losing them to the attacker. The latter posture, with its vulnerability to accidents and false alarms, and still more with its premium on hasty action rather than deliberation and control, is unacceptable to the United States. In a given situation, the President may decide to order a launch, with or without warning. The duty of the Department of Defense is to plan and procure systems so that the force can ride out an attack if that is what the situation calls for, and what the President directs. It is not our duty to force his hand.

(U) The second answer is that we can live temporarily with the vulnerability of one TRIAD leg, so long as the other two are in good working order. But we would be ill-advised to accept that vulnerability as a permanent condition in light of what could happen to the survivability of the other two legs. Indeed, right now, considering the momentum behind current Soviet strategic programs, it is not unreasonable to assume that in such a case:

-- the Soviets would be tempted to see whether they could effectively neutralize the effectiveness of the bomber and SLBM legs;

-- our acquiescence in MINUTEMAN vulnerability would encourage them to increase the resources dedicated to that enterprise; and

-- they would be able to transfer resources from their ICBM program for this purpose.

In other words, if we stand still, and do not repair the vulnerability of the ICBMs, we may find that the bombers and then the SLBMs have become vulnerable as well.

(U) ~~(S)~~ The third answer follows from the second. We would have preferred to see both sides retain their fixed hard ICBMs in a survivable state. And in our SALT proposals of early 1977 we specified offensive limitations and reductions that might have been able to minimize ICBM vulnerability for some years to come. The Soviets saw fit to reject those proposals. Now both sides--not just the United States--must be made to face the consequences of that rejection. Essential equivalence requires no less.

VI. STRATEGIC PROGRAMS

(U) ~~(S)~~ The United States, for its part, will proceed with the mobile MX so as to restore the survivability and increase the deterrent value of the ICBM leg of the TRIAD. As we proceed, we plan to give the MX missile a high single-shot kill probability against hard targets: including silos, submarine pens, nuclear storage sites, and command bunkers. We see no reason to make these targets safe from U.S. ICBMs when comparable targets in the United States would be at risk from Soviet ICBMs.

(U) ~~(S)~~ Although MX could place a large percentage of the Soviet strategic force in jeopardy, Soviet ICBMs are a large percentage of a very large total force, as shown in Chart 5-5 for 1980. The Soviets would not be disarmed any more than we would by the loss of their ICBMs. At a minimum, hundreds of their SLBM launchers would survive, and these launchers will soon be capable of carrying thousands of warheads. If the Soviets should feel they need more, they can (like us) spend the large additional resources required to restore the survivability of their ICBMs. Such a situation would be more conducive to stability than to allow them onesidedly to make our ICBMs vulnerable, and having succeeded on that score, transfer resources to other and even less benign programs. Moreover, by having an efficient, time-urgent, hard-target kill capability--such as will be provided by MX--we should reduce Soviet incentives to expand their silo-based forces in the absence of SALT.

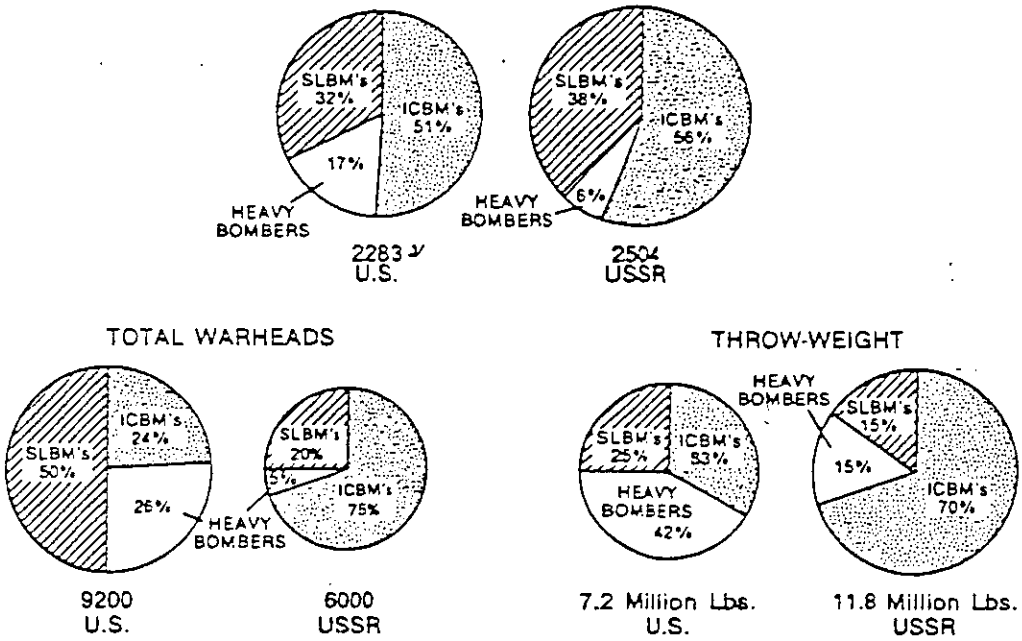
(U) Just as we consider conservatively designed, second-strike, countervailing forces to be essential to the security of the United States and its allies, so we accept the same need on the part of the Soviet Union. Because our own goals are essentially defensive in nature, we can accept a relationship of mutual deterrence. We do not seek to take away from the Soviets their basic second-strike capabilities. But we will not permit them to take away ours. We insist on that kind of essential equivalence, and are dedicated to achieving it through the mutual constraints of arms control or, if necessary, by unilateral means; hence the MX program.

Chart 5-5

1980

COMPOSITION OF U.S. AND SOVIET FORCES

MISSILE LAUNCHERS & HEAVY BOMBERS



1/ The number 2283 includes approximately 220 B-52s in deep storage, but these bombers are not considered in the chart percentages

(S) In addition to developing MX, which is planned to have an initial operating capability in 1986, we are continuing deployment of the Mark-12A reentry vehicle on 300 MINUTEMAN III ICBMs. This program [redacted] and will improve the capability of these missiles against hard targets. Indeed, it is worth pointing out that because of accuracy and yield improvements made in the MINUTEMAN III missiles by the mid-1980s, [redacted]

[redacted]
even without MX. The unique feature of MX is that it provides this capability in a survivable basing mode and thereby serves our objective of stability.

(S) We must continue to modernize the other two legs of the strategic TRIAD as well. The TRIDENT I (C-4) SLBM will be backfitted into 12 POSEIDON submarines by the end of FY 1982; the first two refitted SSBNs already are operational. The first TRIDENT submarine will become operational in FY 1981. Through FY 1980, eight TRIDENT submarines have been authorized. A building rate of one SSBN a year is programmed through FY 1983, shifting to three SSBNs every two years in FY 1984. [redacted] We are proceeding with research and development on TRIDENT II missiles to provide higher accuracy than TRIDENT I. We are also retaining the option to give them more payload than TRIDENT I.

(U) ~~(S)~~ To heighten the effectiveness of the air-breathing leg of the TRIAD, we are improving the penetration capabilities of the B-52 bomber and moving ahead rapidly on the development and deployment of air-launched cruise missiles (ALCMs). The competitive flyoff between the two versions of the ALCM is on the way to completion, and we expect our first full ALCM-equipped squadron of B-52Gs to be operational by December, 1982. Around 80 percent of the B-52Gs should be equipped with 12 ALCMs each by the end of FY 1985. We are planning, in addition, to keep the option of having a new Cruise Missile Carrier (CMC) aircraft ready for service by FY 1987, or earlier if the need should arise.

(U) A number of other items in the FY 1981 budget will improve the reliability and survivability of our strategic command, control, and attack warning systems. Those qualities, along with the endurance of the system, are critical to the maintenance of stability and essential equivalence in performance during the years ahead.

(U) All of these programs will require a steady increase in strategic funding over the next five years, especially as we approach deployment of the MX ICBM. However, the increased effort will be well worth its cost. The aging of our strategic retaliatory forces will be reversed. The survivability of the ICBM leg of the TRIAD will be restored and its performance improved. The second-strike effectiveness of the submarine and air-breathing legs of the TRIAD will be strengthened. Our ability to cover a comprehensive target system containing hundreds of urban-industrial areas and thousands of political, economic, and military points will be even more beyond doubt than it is now.

(U) With the execution of this program, I can see no reason why the Soviets would have any incentive, even in the most desperate circumstances, to launch a nuclear attack on the United States or its forces. They could not disarm us. They could not significantly limit damage to themselves. And they would have no advantage in any strategic bombing exchange that followed an attack. There is no reason why a nuclear attack on our allies or even the threat of it should look any more attractive, provided that overall stability can be enhanced and our theater nuclear forces modernized to contribute effectively to deterrence, as part of a continuum of capability.

CHAPTER 1

STRATEGIC FORCES

I. STRATEGIC OFFENSIVE FORCES

A. Program Basis

(U) The total Department of Defense request for Strategic Offensive Forces in FY 1981 is approximately $10.2 billion. This is about 6 percent of the DoD budget. Allocating overall support costs among functional areas gives an estimate of about 12 percent.

1. U.S. Strategic Force Objectives

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

2. The Strategic Balance

(U) Although Soviet ICBMs will increasingly threaten the survivability of our land-based missiles in the 1980s, the Soviets must be concerned with the future survivability of their own ICBMs. However, now and for the future, neither the United States nor the Soviet Union could launch a first strike that would prevent the other side from retaliating with devastating force.

(U) We cannot measure deterrence directly. We commonly look at a variety of static force measures, such as number of warheads and equivalent megatonnage, in comparing the strategic forces of the United States and the Soviet Union. We also perform assessments of the capabilities of U.S. forces to achieve particular levels of damage against various numbers and classes of targets. Although not conclusive, such measures and assessments have a bearing on deterrence through their influence on perceptions of relative strengths.

(U) We must be confident that our strategic force posture is resilient enough to enable us to respond to a variety of potential crisis or conflict situations that would impose varying demands and stress different force attributes. These situations should include conflict scenarios that appear to be of concern to the Soviets. A meaningful but by no means complete way to assess the deterrent capability of our strategic posture is to examine how our forces might perform in response to a hypothetical Soviet attack on them and on command, control, and communications (C^3) facilities associated with the operational control and employment of these forces. We have performed the assessment of such an attack for two cases: a surprise attack with our forces on day-to-day alert, and an attack following sufficient strategic warning so

that both Soviet and U.S. forces have been generated to a high-alert status. This assessment does not test our forces' endurance, a desirable attribute for deterrence in that it reduces Soviet expectations of prevailing in a protracted nuclear conflict, nor does it reflect the uncertainties resulting from the attacks on our C^3 systems.

(U) We assume that the initial Soviet attack uses ICBM warheads against U.S. silos, forward-deployed SLBM warheads against time-urgent C^3 and bomber base targets, and ICBMs and SLBMs against SSBN ports and other supporting installations. The U.S. retaliatory counterforce attack uses surviving ICBM and SLBM warheads against Soviet bomber bases, SSBN ports, and hardened C^3 targets, and uses surviving ICBM and bomber warheads against Soviet ICBM silos, without knowing which silos are empty.

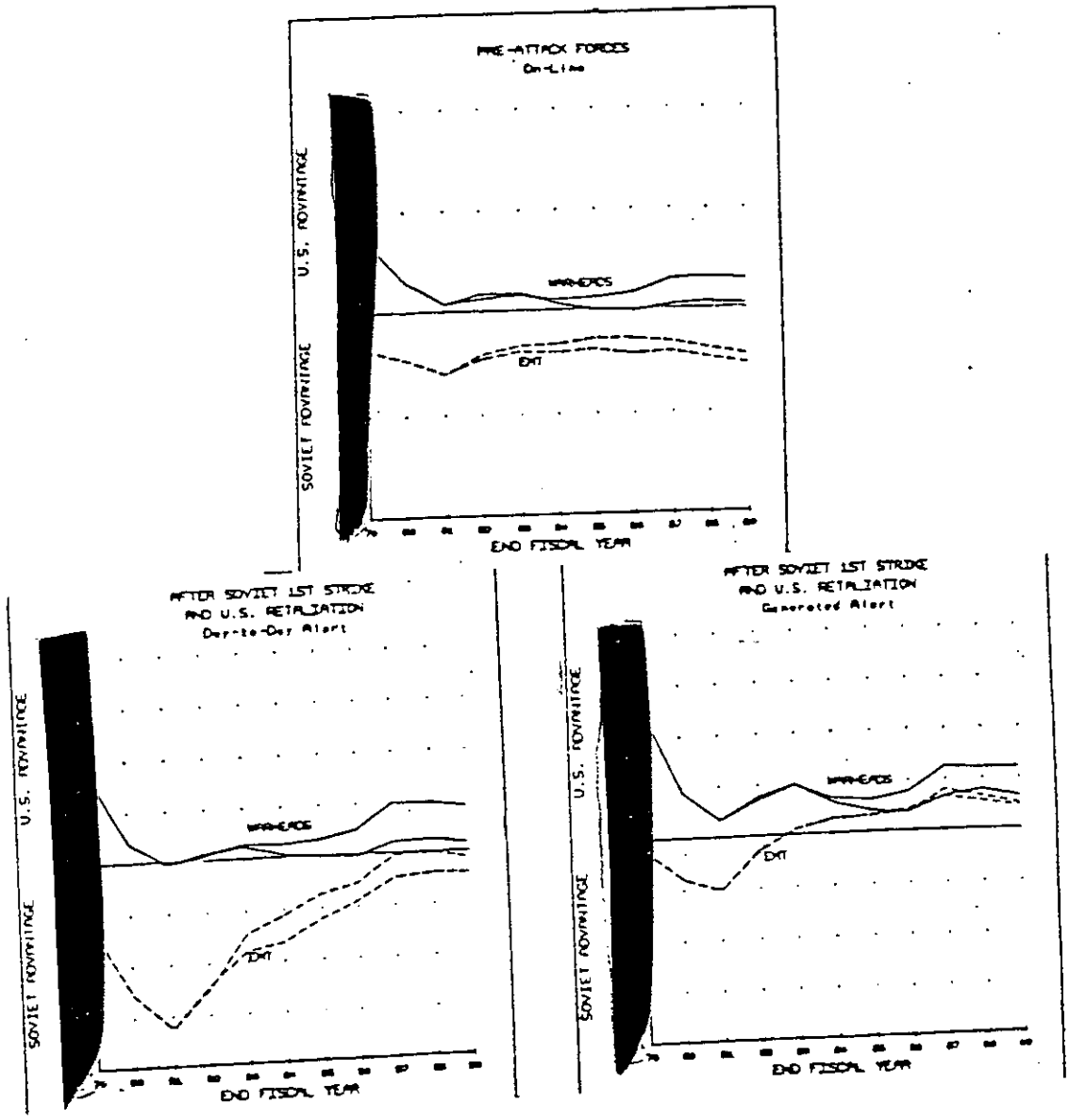
(U) Chart 1-1 compares the expected ratio of remaining warheads and EMT (equivalent megatonnage) for U.S. and Soviet forces over the period 1979-1989 under these attack assumptions. Chart 1-2 portrays the expected residual U.S. retaliatory capability following the U.S. counterforce attack, against Soviet industrial and military targets. Both charts reflect the numbers and calculated capabilities of planned U.S. and projected Soviet strategic forces under SALT constraints, using detailed performance characteristics (e.g., yield, accuracy, reliability).

(U) In the early 1980s, the results of this counterforce exchange shown in Chart 1-1 suggest that the U.S. will maintain a lead in warheads, albeit marginal in the day-to-day case, but that the remaining Soviet warheads will be substantially more powerful. However, even in this period, the Soviets would not significantly improve their relative position by a nuclear attack, given our ability to retaliate against their strategic capability. As U.S. strategic modernization programs are deployed, the U.S. warhead advantage grows and the Soviet equivalent megatonnage (EMT) advantage diminishes or disappears. This occurs despite significant Soviet modernization. Chart 1-2 shows a steady improvement in U.S. retaliatory capability in the 1980s after the counterforce exchange.

Chart 1-1

(S) U.S. and Soviet Strategic Forces Comparison Under SALT II

(Note: Forked lines reflect our uncertainty about whether the Soviets will deploy a single RV or a MIRVed (10 RV) payload on the new ICBM allowable under SALT II.)

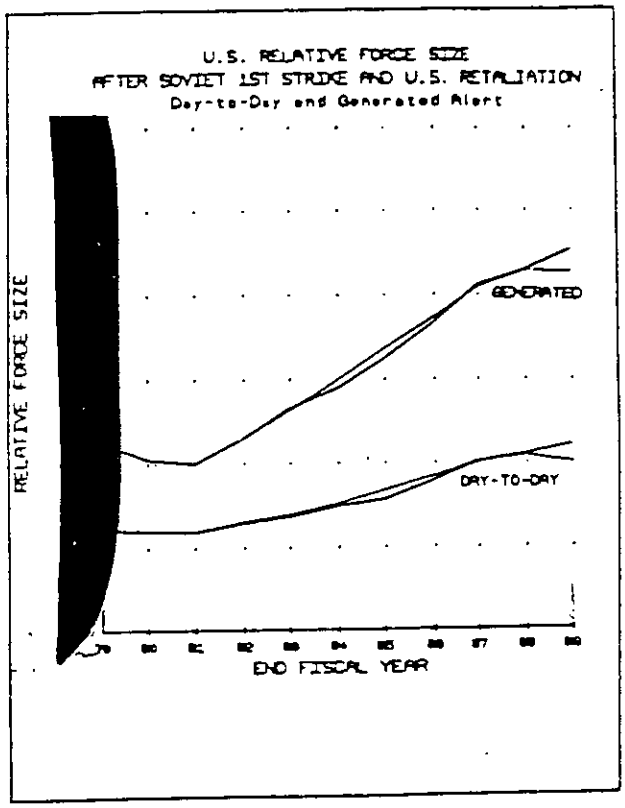


Note: This chart depicts programmed U.S. forces and projected Soviet forces assuming SALT II limits. Pre-attack level represents on-line warheads and EMT [redacted] The post-exchange levels show the residual warheads and EMT after an initial Soviet counterforce strike and a retaliatory U.S. counterforce strike.

Chart 1-2

(S) U.S. Retaliatory Capability

(Note: Forked lines reflect our uncertainty about whether the Soviets will deploy a single RV or a MIRVed (10 RV) payload on the new ICBM allowable under SALT II.)



Note: This chart represents a measure of the residual retaliatory capabilities of programmed U.S. forces after undergoing an attack by projected Soviet forces and responding with a counterforce attack. The measure, while comprehensive, does not reflect the basis on which we plan to use the forces, including allowances for theater purposes. [redacted]

3. Key Needs for Strategic Forces

(U) I believe that the best way to meet our strategic goals--deterrence, essential equivalence, and stability--is to maintain strategic forces with the diversity, redundancy and flexibility of the current TRIAD. With three largely independent, survivable systems, our capability has been well hedged in the past. Emerging problems such as silo vulnerability, block obsolescence, and advances in Soviet strategic defense require action to prevent our current effective strategic forces from becoming unduly dependent on one or two components. Thus, our strategic offensive force programs address the following interrelated challenges: (1) reducing the vulnerability of our land-based ICBMs; (2) maintaining the high survivability and effectiveness of the SLBM force as POLARIS/POSEIDON submarines reach the end of their planned service lives; and (3) continued high reliability, survivability and penetration probability of the air breathing leg of our strategic TRIAD. These programs represent the most vigorous strategic force modernization program in more than a decade.

B. Program Description

(U) The five-year program places emphasis on meeting these challenges.

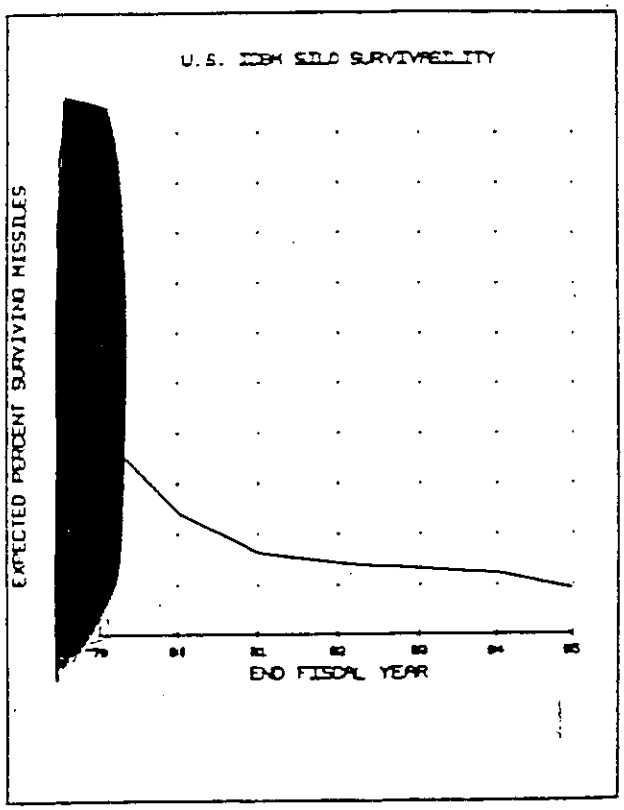
1. Reducing the Vulnerability of Land-Based ICBMs

(U) Reducing the vulnerability of the land-based ICBM force is the highest priority strategic initiative in the five-year program. Intensive study during the past year has enabled us to begin full scale development of the MX missile and to select a survivable basing mode.

(U) All available evidence suggests that targeting U.S. ICBM silos continues to be a high priority for the Soviet ICBM force. The numbers of high quality warheads on new versions of the SS-18 and SS-19 seriously threaten our MINUTEMAN force in the early 1980s, as is illustrated in Chart 1-3. While the outcome of an attempt to destroy our silos would be more uncertain than this curve suggests, the clearly unfavorable trend warrants corrective action.

(S) Chart 1-3

Survivability of ICBM Silos



(U) The decision to proceed with full-scale development of the MX reflects the Administration's view that there are persuasive military and perceptual reasons for increasing the deterrent value of the ICBM component of our strategic forces. These reasons are discussed in Section I. The decision to proceed reflects, in particular, a consensus that a strategic TRIAD of forces is the best way to hedge against unexpected breakthroughs in Soviet ASW or air defense capability in the late 1980s or beyond, and that such features of ICBMs as accuracy and good command and control, contribute a flexibility to the force that should be made survivable against Soviet preemptive attack.

(U) The MX missile configuration chosen for full-scale development has the largest throw-weight allowable under the proposed SALT II agreement and will carry the maximum allowable number of warheads. Equipped with an Advanced Inertial Reference Sphere (AIRS) guidance system, the MX will be capable of attacking the full spectrum of Soviet targets. Table 1-1 compares MX

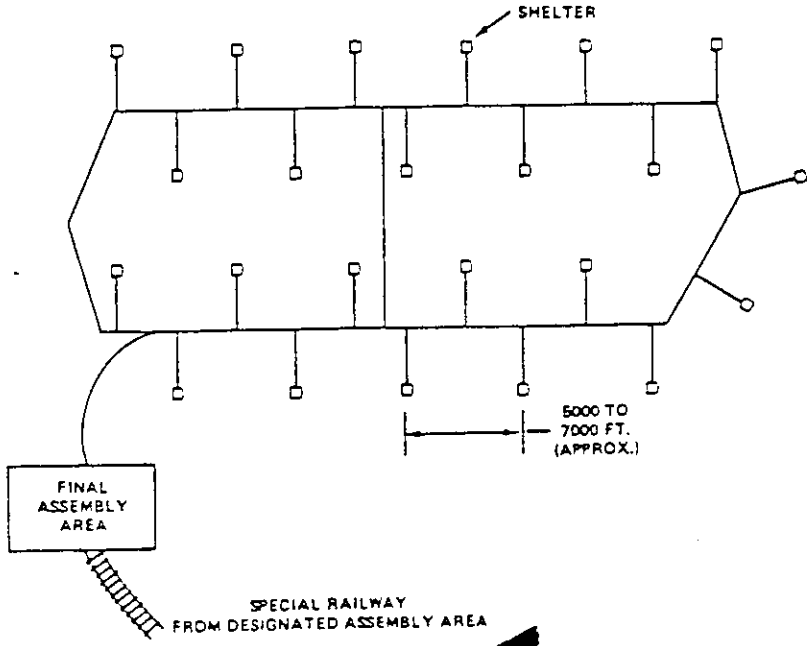
characteristics with Soviet systems projected to be available in the same time period. The table shows that the MX will be equivalent in hard target destruction capability to an SS-18 follow-on, should the Soviets deploy one during the 1980s.

[redacted]

(U) The basing method selected for the MX missile evolved directly from previous designs of both the underground trench and surface horizontal shelters. The method includes missiles transported by large vehicles (Transporter Erector Launchers or TELs) designed to operate on a loop road with shelters on spurs as depicted in Chart 1-4.

Chart 1-4

LOOP ROAD FOR 1 MISSILE WITH 23 SHELTERS



(U) Table 1-2 summarizes the major considerations taken into account in the choice of the MX basing mode.

Table 1-2

Consideration	Resolution
Preservation of Location Uncertainty	Periodic, covered movement of TELs; continuous TEL motion in crisis or dash on tactical warning.
Strategic Arms Limitations (SAL) Verification	Geographical confinement; system design and operational flow allows monitoring at various stages; periodic shelter opening.
Environmental Impact	Point security withdraws minimum of public land; roads open to public; possible use of renewable energy sources to power the shelters.
Resilience to Threat	System can be expanded to meet survivability requirements.

(S) The current MX plan is to deploy 200 missiles in 4,600 shelters by the end of 1989. An initial operational capability for 10 missiles is planned for July 1986. The final mix of missiles and shelters need not be decided at least until the initial production decision is made, and will then reflect the conditions existing at the time such as the threat, SAL agreements, and prospects for future agreements.

		FY 1979 Actual Funding	FY 1980 Planned Funding	FY 1981 Prop'd Funding	FY 1982 Prop'd for Authorization
(U) MX Engineering Development	Development: $ Millions	150.0	670.0	1,551.0	2,179.6
(U) MINUTEMAN improvements (MK-12A warhead to increase yield, silo and communication improvements).	Development: $ Millions	50.3	35.3	48.3	40.0
	Procurement: $ Millions	66.1	87.1	87.0	33.6

2. Strengthening the SLBM Force

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

(U) (S) The 41 POLARIS/POSEIDON SSBNs in the active force were constructed in the late 1950s and early 1960s. The 10 oldest SSBNs, armed with 16 POLARIS multiple reentry vehicle (MRV) missiles per submarine, will be retired from the strategic force by FY 1981 (five SSBNs in FY 1980, five in 1981). The remaining 31 POSEIDON SSBNs were converted to carry 16 POSEIDON missiles with Multiple Independently Targetable Reentry Vehicles (MIRVs). Twelve POSEIDON submarines are planned for further modification to carry the TRIDENT I missile. This missile will significantly enhance our strategic force effectiveness by improving yield, accuracy, and range relative to the POSEIDON missile. The greater range considerably enhances survivability of the SSBN force, allowing these 12 TRIDENT backfitted submarines to operate in much larger ocean areas while on-station, thus hedging against the possibility of a Soviet ASW breakthrough. The first submarine finished conversion in December 1978, and the SSBN was deployed with the TRIDENT I missile in October 1979; program completion is planned for FY 1982. No POSEIDON submarine retirements are programmed through FY 1985.

(U) The ultimate size and missile configuration of the SLBM leg of the TRIAD has yet to be determined. These decisions will be based on many and changing variables, including: (a) assessments of the size and capability of Soviet strategic and ASW forces; (b) determination of the cost-effective life span of the POSEIDON force; (c) the attractiveness of alternative strategic programs when compared to TRIDENT; and, (d) progress in strategic arms limitations negotiations.

(U) (S) There have been eight TRIDENT submarines authorized through FY 1980. Long-lead funding has been authorized for a total of 11 submarines. The lead submarine, USS OHIO, is scheduled for sea trials in July 1980, with a planned Initial Operational Capability (IOC) of August 1981. The TRIDENT has more (24) and larger missile tubes than the POSEIDON boat, is quieter, making acoustic detection more difficult, and will have an increased at-sea, on patrol time. A basic building rate of one SSBN per year is programmed through 1984, with a subsequent building rate of three ships every two years. Funds are programmed to support concept and design studies leading to a follow-on, less expensive SSBN. This SSBN could either be a reengineered TRIDENT design or a new design of a 24-tube SSBN with tubes of the same size as the TRIDENT SSBN.

(U) A modest research and development effort will continue to explore the feasibility of improving SLBM accuracy and payload, either for the existing TRIDENT I missile, or the development of a new missile (TRIDENT II). Research and development funds are provided for TRIDENT II in FY 1981.

		FY 1979 Actual Funding	FY 1980 Planned Funding	FY 1981 Prop'd Funding	FY 1982 Prop'd for Authorization
(U) Acquisition of TRIDENT submarine	Procurement: $ Millions	487.1	1,379.4	1,129.4	1,388.3
(U) Acquisition of TRIDENT I missile	Procurement: $ Millions	890.0	764.0	855.0	813.3
POSEIDON Submarine conversion for TRIDENT I missile	Procurement: $ Millions	36.2	10.6	13.5	8.9
(U) Research and Development of TRIDENT II (SLBM Improvement)	Development: $ Millions	5.0	25.6	36.4	-
(U) Research and Development of SSBN-X	Development: $ Millions	3.0	10.0	12.6	80.9

3. Maintaining the Air-Breathing Leg

(S) Our strategic bombers continue to be an effective component of the TRIAD. We maintain their second-strike capability by keeping a significant percentage of the bombers at high readiness levels on day-to-day alert, planning to penetrate Soviet defenses at low altitudes, avoiding known and suspected ground-controlled intercept (GCI) radars and surface-to-air missile (SAM) sites, using electronic countermeasures (ECM) to confuse [redacted] radars, and attacking heavily defended targets from outside their defenses by using short-range attack missiles (SRAM). The Soviets, however, are projected to modernize and increase their defenses with a new Airborne Warning and Control Aircraft, (SUAWACS), as well as with new interceptors with a look down/shootdown capability, and an improved, mobile, low-altitude surface-to-air-missile (SAM). The probability of our bombers reaching their targets when these systems are fully deployed will decrease significantly unless we take action now to counter these Soviet programs.

(U) The modernization and modification programs described below should maintain the capability of our air-breathing leg of the TRIAD, at least through the 1980s and into the 1990s--with further actions, through the 1990s.

a. Cruise Missile Program

(U) (S) The air-launched cruise missile (ALCM) program constitutes the major modernization effort for the strategic bomber force. The ALCM is a small, long-range, highly accurate, winged vehicle which can be launched by bombers penetrating Soviet defenses or from entirely outside Soviet defenses. These weapons will ultimately be loaded both under the wings and in the bomb bays of our B-52G bombers, almost doubling the number of weapons these aircraft carry.

(U) The competitive flyoff between the Boeing AGM-86 and the General Dynamics AGM-109 was scheduled to be completed in January 1980. It included ten live missile launches from a B-52G by each of the competing contractors, providing data for a source selection and a production decision early in 1980. Nineteen additional flights (eight more than originally planned) are currently programmed for the selected missile. The competitive flyoff, extensive ground testing, and the follow-on flight testing will provide high confidence in the mission reliability of the cruise missile we select.

(U) (S) During January of 1978, I initiated a survivability assessment of the cruise missile because of the important role the ALCM is projected to assume in the air-breathing leg of the TRIAD. Phase I of that assessment, using the TOMAHAWK as a representative missile, was completed in September 1978. It consisted of seven flights designed to test the vulnerability of the cruise missile to a spectrum of current and future hostile air defense systems. Additionally, a follow-on live firing test and evaluation program has been initiated to address further the issue of cruise missile vulnerability to current and potential air-to-air missiles and surface-to-air missiles. So far, nothing in the assessment program has changed my view that our successive generations of cruise missiles will be able to perform their mission effectively against evolving Soviet defenses.

(U) (S) Initial operational capability (IOC) for the ALCM is planned for December 1982, when the first B-52G squadron is loaded with external cruise missiles. Full operational capability is projected to occur in 1990, when all 151 B-52G aircraft will be loaded, each with 12 external and eight internal cruise missiles.

b. Cruise Missile Carrier Aircraft

(U) (S) The cruise missile carrier aircraft (CMC) development program continues to offer a prudent option for rapid growth in our strategic capability, should that be necessary, by providing significant increases in the number of cruise missiles that could be carried by the air-breathing leg of our strategic TRIAD. The Air Force has completed its concept/system definition studies. A sub-sonic prototype aircraft will undergo flight demonstration prior to entering advanced development for possible use in the CMC mission. In the unlikely event that B-52 vulnerability to Soviet defenses requires it, production of a new CMC could begin as early as FY 1985.

c. B-52 Modification

(U) Several modification programs are planned for the B-52 force to improve aircraft reliability and maintainability and to equip the B-52G aircraft for air-launched cruise missile carriage. Specifically, the present B-52G/H bombing-navigation avionics systems, designed with technologies available in the early 1950s, are experiencing decreasing effectiveness and increasing maintenance costs. Phase I of the offensive avionics system (OAS) modifications will solve this immediate problem and reduce support costs. In addition, OAS Phase I will integrate the cruise missile weapon system with the B-52G avionics and provide a common system for the B-52H should cruise missile carriage be desired at a later time for that aircraft. Flight testing and evaluation will begin later this year using a test aircraft. The first aircraft will be modified by September 1981.

(U) A second phase of the B-52 modification program addresses the B-52G/H reliability and maintainability problems associated with the 1950's designed penetration-related systems such as the forward-looking radar, automatic flight control systems and aircraft electrical systems. This program is currently funded in FY 1981 as an R&D effort.

d. Bomber R&D

(U) Although our B-52 force, particularly when employed with cruise missiles, is projected to be effective well into the 1990s, our newest B-52, the B-52H, will be more than 25 years old by the end of FY 1988. Therefore, we are starting long-range planning for a possible follow-on manned bomber. The FY 1981 budget request will provide for conceptual studies to identify required aircraft characteristics such as payload, range, speed and other performance parameters.

(U) In the same vein, we are continuing to test and evaluate the offensive and defensive avionics suite on the fourth B-1 test aircraft delivered in the spring of 1979. The data from these flight tests will be applied to the design of future strategic penetrating aircraft, particularly in the areas of defensive avionics and engine design as well as hardening to nuclear effects. The FY 1981 work will consist primarily of a nuclear hardness test at the Air Force Weapons Laboratory.

(U) We are also continuing to explore active defenses for bombers and cruise missile carriers. One such program, in the technology stage of development, is the Advanced Strategic Air-Launched Missile (ASALM). One of the purposes of this missile would be to destroy the projected SUAWACS, thereby degrading the Soviet Union's potentially effective forward defense against both bombers and cruise missile carriers. In addition, the ASALM would provide an air-to-ground capability to be used in the primary strike mission as a possible replacement or follow-on to the currently deployed short-range attack missile (SRAM). The missile uses a rocket ramjet engine to achieve velocities on the order of Mach 4. The FY 1981 budget request will allow subsystem validation and demonstration of the air-to-air guidance for the missile.

e. Aerial Tankers

(U) The current KC-135A force supports all peacetime aerial refueling requirements for land-based aircraft. However, simultaneous execution of the Single Integrated Operational Plan (SIOP) and a major contingency action in Central Europe, the Persian Gulf or Korea, for example, could demand more refueling support than is available.

(U) KC-10A procurement can provide added capability in this area if it is needed. So also could KC-135A reengining, but at a very high cost. Source selection for possible KC-135 reengining will take place early this year. The FY 1981 budget includes some development funding for this program (see Chapter 6 - Mobility Forces for KC-10A cost information).

Table 1-4

Table of Program Element Funding

		FY 1979 Actual Funding	FY 1980 Planned Funding	FY 1981 Prop'd Funding	FY 1982 Prop'd for Authorization
Air-launched Cruise Missile Program	Development: $ Millions	338.9	90.0	108.4	32.8
Cruise Missile Carrier Aircraft	Development: $ Millions	13.2	30.0	30.3	50.7
Modification of B-52 Strategic bomber	Development: $ Millions	71.9	96.3	142.4	107.5
Advanced Strategic Air Launched Missile (ASALM)	Development: $ Millions	48.5	25.0	25.7	50.6
Research and Development of B-1 bomber and other bomber studies	Development: $ Millions	60.3	54.9	45.8	20.3
KC-135 Reengining Program	Development: $ Millions	9.0	10.0	15.0	22.0
	Procurement: $ Millions	-	5.0	44.0	1.5

II. STRATEGIC DEFENSIVE FORCES

A. Program Basis

(U) Strategic defense is an integral part of our strategy of deterrence. In particular, timely and reliable warning and assessment of an attack is essential to our offensive forces. Such warning and assessment increase the survivability of our retaliatory and C^3I resources and add credibility to our statements that the Soviets cannot count on finding our increasingly vulnerable ICBMs still in their silos during any first-strike attempt. The latter is of obvious importance in the 1980s and could have even longer-range implications. We recognize, however, that attempting to construct a complete defense against a massive Soviet nuclear attack would be prohibitively costly, destablizing and in the end, almost certain to fail. And cost aside, the Anti-Ballistic Missile (ABM) Treaty of 1972 and the 1974 Protocol restrict the deployment of ABM systems in order to prevent a futile damage-limiting competition. Our current programs for active defense reflect these constraints and the emphasis we place on offensive forces for deterrence.

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

B. Program Status and Description

(U) A major part of the strategic defense program is related to warning and attack assessment. Because of the close relationship of the warning systems to the command and control functions essential for strategic deterrence, the bomber and missile warning and attack assessment programs are discussed together with these topics in Section III.C.

1. Ballistic Missile Defense (BMD) R&D

(U) It is important for us to pursue an R&D program in Ballistic Missile Defense to maintain a balance with the Soviets in this field and to encourage their compliance with the ABM treaty. The BMD program is a continuing R&D effort to provide a hedge against the ballistic missile threat to the United States. The program consists of two balanced and complementary efforts--an Advanced Technology Program and a Systems Technology Program.

(U) The Advanced Technology Program involves broad research on the technology of all BMD components and functions. Its purposes are to search for potentially revolutionary concepts and ideas and to develop emerging technologies to a point where the Systems Technology Program can incorporate them into system design. Program objectives are achieved through laboratory and field experiments in missile discrimination, simulations, data processing, interceptor components, and research in radar and optics technologies.

(U) The Systems Technology Program, drawing on the accomplishments of the Advanced Technology Program, integrates components and tests key system concepts. The program maintains the capability to develop and deploy a full BMD system should it be required. Major thrusts in the Systems Technology Program include the development and demonstration of new sensors and guidance techniques for intercept and non-nuclear kill of an attacking RV outside the earth's atmosphere.

(S) We are also continuing R&D on a ballistic missile point defense system that could protect our land-based missiles, bomber bases, and other critical strategic force and C^3 assets. Such a system would defend specific force elements by low-altitude intercept of incoming RVs. Recent technological advances achieved through the Advanced Technology Program may make a Low Altitude Defense (LoAD) system a potentially attractive option. We are considering a prototype demonstration of a LoAD system as part of the Systems Technology Program.

2. Air Defense

(U) We have deactivated the United States Air Force Aerospace Defense Command (USAF ADCOM) as a major command. Resource management responsibility for active Air Force fighter interceptor squadrons and ground based air defense radars and control centers has been transfered to the Air Force's Tactical Air Command (TAC). Space surveillance and missile warning resources will be managed by the Strategic Air Command (SAC), and communication resources by the Air Force Communications Command (AFCC). The Commander-in-Chief of North American Air Defense Command (CINCNORAD) will retain operational control of strategic air defense, space surveillance, and attack warning assets. Realignment of these support responsibilities does not change defense force structure or the resources dedicated to NORAD's strategic defense missions. The provisions of the reorganization preserve the authority, influence and control of CINCNORAD as commander of the specified Aerospace Defense Command (ADCOM), a command distinct from the deactivated major Air Force command mentioned above.

(U) The agreement with Canada creating the combined North American Air Defense Command (NORAD) is due for renewal by May 1980. Many of NORAD's atmospheric surveillance, warning, and defense systems, representing concepts and technology from the 1950s, are becoming increasingly costly to maintain and operate. Recognizing these issues, the Canadian Minister of Defense and I chartered a joint U.S. and Canada Air Defense Study. The study has been completed and is being evaluated, along with previous analyses, by our respective governments as a basis for recommending air defense policy, plans, and programs that could meet future North American air defense needs. Several tactical warning and defense program decisions have been deferred until these evaluations and recommendations are available.

a. Interceptor Forces

(U) U.S. and Canadian active and U.S. Air National Guard (ANG) F-106, F-101 and F-4 squadrons provide 327 interceptors dedicated to North American air defense. The continental United States (CONUS) interceptor forces, along with some Tactical Air Command (TAC) F-15 and F-4 forces, maintain a

peacetime alert at 26 sites around the periphery of the 48 contiguous states. The Air Force, Navy, and Marines are tasked to provide additional interceptors in a crisis.

b. Surveillance and Command and Control Systems

(U) The CONUS-based network of airspace surveillance radar sites formerly operated and maintained by the Air Force, duplicated much of the Federal Aviation Administration (FAA) air traffic control system. In 1973, under an agreement with FAA, we began to phase out most of the Air Force surveillance radars in favor of a Joint Surveillance System (JSS).

(U) In crises and wartime we plan to augment the Joint Surveillance System with E-3A AWACS aircraft. A total of 34 AWACS are tentatively planned for operation by TAC: at present seven of these are designated for North American Air Defense in peacetime.

3. Space Defense

(S) Our policy is to abide by the agreements limiting the use of space to peaceful purposes. The Soviets [redacted] have tested an anti-satellite (ASAT) system with limited capabilities against U.S. space systems [redacted] The U.S. is developing but has not tested an ASAT capability.

(S) The President has stated our preference for verifiable limitations on anti-satellite (ASAT) systems and our opposition to a space weapons race. We have begun discussions with the Soviets on these subjects. However, in the absence of an agreement and in the face of proven Soviet capabilities, we must work to defend our satellites, if necessary. Our space defense program consists of four elements. The first element focuses on deterring an attack by improving our ability to monitor space activities. [redacted] We are working on an improved ground-based system to enhance detection and tracking of satellites [redacted] and several research and development activities have been initiated to develop spaceborne sensors for responsive surveillance [redacted]

(S) The second element of our program would make our satellites less vulnerable to attack. [redacted]

(S) As the third element of our program, we will continue the prototype development of an anti-satellite capability to destroy enemy military satellites that represent a threat to our forces [redacted]

(U) The fourth element provides the command, control and communications to effectively manage all space defense resources. In October 1979, the Air Force established an initial Space Defense Operations Center (SPADOC) capability at the North American Air Defense Command Cheyenne Mountain Complex in Colorado. The initial SPADOC, while limited in capability, will allow for growth as planned improvements and weapon systems become operational.

4. Civil Defense

(U) Executive Order 12148 (July 15, 1979) transferred responsibility for the U.S. Civil Defense program from the Secretary of Defense to the Director of the Federal Emergency Management Agency (FEMA). The order also made the Secretary of Defense and the National Security Council responsible for overseeing the development of civil defense policies and programs by the Director, FEMA, so that civil defense planning will continue to be fully compatible with overall U.S. strategic policy, and to maintain an effective link between strategic nuclear planning and nuclear attack preparedness planning.

(U) The purpose of the U.S. civil defense program is to enhance, in the event of a nuclear war, the survivability of the American people and its leadership, thereby improving the basis for eventual national recovery. The primary focus of the program is to develop a capability for moving our people to low-risk areas over a period of several days during a crisis, so as to reduce significantly their vulnerability to a major Soviet nuclear attack and to avoid major asymmetries in population fatalities. In addition to population relocation, though not as effective, the civil defense program would provide fallout protection for the population near places of work or residence.

(U) Achieving these civil defense goals should contribute to perceptions of both overall U.S.-Soviet strategic equivalence and of U.S. determination in a crisis, thereby reducing the temptation of the Soviets to attempt to coerce us. The program in no way changes the U.S. policy of relying on strategic offensive nuclear forces to maintain deterrence, nor does it require civil defense efforts equivalent to those of the Soviets.

Table of Program Costs

		FY 1979 Actual Funding	FY 1980 Planned Funding	FY 1981 Prop'd Funding	FY 1982 Prop'd for Authorization
Development of Ballistic Missile Defense Advanced Technology	Development: $ Millions	113.5	120.8	132.8	143.5
Development of Ballistic Missile Defense Systems Technology	Development: $ Millions	114.0	120.8	133.5	176.1
Procurement of the Joint Surveillance System	Procurement: $ Millions	37.0	70.5	1.9	-
Development of Space Defense Systems	Development: $ Millions	78.2	80.5	125.0	125.7