~~DPMs for 1968~~

8

FOR INTERNAL USE IN THE DEPARTMENT OF DEFENSE ONLY

Tentative
Record of Decision

January 9, 1969

DRAFT PRESIDENTIAL MEMORANDUM

on

STRATEGIC OFFENSIVE AND DEFENSIVE FORCES

FOR INTERNAL USE IN THE DEPARTMENT OF DEFENSE ONLY

#324

Tentative
Record of Decision

January 9, 1969

DRAFT

MEMORANDUM FOR THE PRESIDENT

SUBJECT: Strategic Offensive and Defensive Forces (U)

We have reviewed our strategic offensive and defensive forces for FY 70-74 and reached the following major conclusions:

1. Against likely Soviet threats, our planned strategic offensive forces provide a fully adequate deterrent.

2. Our recommended program also provides timely and efficient options to meet the maximum plausible "Greater-Than-Expected" Soviet threat to our deterrent through FY 77.

3. Achieving a significant Damage Limiting capability against the Soviet Union does not appear to be feasible with current technology.

4. Current evidence suggests the Soviets may have reached a similar conclusion about the feasibility of taking away our deterrent.

5. We will continue to maintain strategic "nuclear superiority" over the Soviets in terms of nuclear warheads. It is doubtful, however, that this superiority can be converted into meaningful political power, particularly now that the Soviet Union also has a large and well-protected strategic force.

6. Adequately safeguarded arms control agreements appear feasible. They could help us meet our basic strategic objectives and increase the stability of our deterrent.

7. We cannot depend on our nuclear forces alone to insure our security; we must also maintain very strong conventional forces.

Based on our view of U.S. security needs, and without considering the implications of possible arms control agreements that might result from discussions with the Soviets, we recommend:

1. Continuing to develop and buy Minuteman III with Multiple Independently-targetable Re-entry Vehicles (MIRVs), maintaining a land-based ICBM force of 1,000 Minuteman, and slowly decreasing the number of Titan IIs.

2. Continuing development of Poseidon and maintaining our plans, within Congressionally-reduced FY 69 funding, for converting 31 Polaris submarines to the Poseidon configuration.

3. Buying fewer FB-111s, but maintaining the effectiveness of our strategic bomber force with new weapons and penetration aids as protection against possible improved Soviet bomber defenses.

4. Continuing the previously approved Continental Air Defense Plan to: (a) introduce the Airborne Warning and Control System (AWACS), (b) give the F-106 interceptor the best fire control and missile system available, (c) add Over-the-Horizon (OTH) radars for complete peacetime surveillance, and (d) phase down the remaining interceptors and most of the ground-based radar and control systems.

5. Continuing to deploy the Sentinel Anti-Ballistic Missile (ABM) system with options for a light defense of Minuteman and for protecting our strategic bomber bases from Sea-Launched Ballistic Missile (SLBM) attacks.

Specific recommendations are discussed in Section IX. Force tables are attached. A financial summary follows.

TOTAL OBLIGATIONAL AUTHORITY (TOA) a/
(In $ Millions)

	FY 69	FY 70	FY 71	FY 72	FY 73	FY 74 b/	Total FY 70-74
Strategic Offense							
Previously Approved	$8,158	$8,598	$6,607	$5,817	$4,867	$4,533	$30,422
SecDef Recommended		8,389	6,738	6,032	4,950	4,693	30,802
JCS Proposed		9,408	9,940	11,878	11,719	12,099	55,044
Strategic Defense							
Previously Approved	3,141	4,528	4,684	3,713	3,770	2,861	19,556
SecDef Recommended		3,815	4,771	3,881	3,943	3,612	20,022
JCS Proposed		5,272	7,901	8,337	8,937	8,354	38,801
Totals							
Previously Approved	11,299	13,126	11,291	9,530	8,637	7,394	49,978
SecDef Recommended		12,204	11,509	9,913	8,893	8,305	50,824
JCS Proposed		14,680	17,841	20,215	20,656	20,453	93,845

a/ Includes all primary program costs and allocated support costs, but excludes Programs 3, 6, and 9.
b/ The Previously Approved FY 74 figures are projections included to make the FY 70-74 totals comparable.

Tentative
Record of Decision

January 9, 1969

I. OBJECTIVES FOR STRATEGIC NUCLEAR FORCES

The basic objective of our strategic policy is to deter a nuclear attack against the United States or our allies. To do this, we must maintain powerful and well-protected strategic retaliatory forces. The U.S. and Soviet interest in avoiding mutual destruction makes other nuclear wars, such as attacks on our allies, very unlikely. Nevertheless, we must retain the confidence of our allies in our power and will to protect them.

To make all nuclear wars unlikely also requires:

1. Maintaining control of our forces.

2. Deterring nuclear attack on or intimidation of allied or neutral countries.

3. Discouraging other countries from acquiring nuclear weapons.

4. Emphasizing and maintaining the firebreak between conventional and nuclear weapons.

What if deterrence fails and a nuclear war with the Soviet Union occurs? Then our objective would be to achieve the best possible outcome. If the war began with an all-out Soviet attack, including our cities, we would reply in kind. If the war started with less than an all-out attack, we would want to carry out plans for the controlled use of our nuclear power, in order to give us some chance of stopping the war -- on acceptable terms -- before an all-out nuclear exchange occurred.

In considering these objectives, we must recognize that our strategic nuclear forces, while vital, can only deter a limited range of contingencies. We need other kinds of military force to cope with the threats that cannot be met with nuclear weapons.

II. STRATEGIC MISSIONS

There are four different missions which could be assigned to our strategic forces; their relation to our basic objectives is discussed below.

A. Deterrence of Nuclear War

To deter a Soviet nuclear attack on the United States or its allies, our forces must have an Assured Destruction capability. By this we mean the unmistakable ability to destroy the society of any aggressor -- even after a surprise attack on the United States. We believe the Soviets also have a policy of keeping an Assured Destruction capability, although they probably do not measure it in the same way as we do.

Once we have such a capability, we can reduce even more the likelihood of an attack by developing and deploying forces that are difficult to attack. Unable to destroy most of our strategic nuclear forces, the Soviets would gain little by striking first.

B. Full First-Strike Capability

The purpose of this mission would be to destroy most of the Soviet strategic offensive forces in a first-strike and destroy their remaining weapons with defensive forces. This mission would make sense only if we were sure that the United States could escape unacceptable damage from Soviet retaliation -- that is, if we could take away the Soviet deterrent. We have found, however, that within the foreseeable future, both nations have the economic and technological capability to maintain their Assured Destruction capability.

C. Damage Limiting

This mission would be to limit the Soviet or Chinese ability to damage significantly the United States and our allies, should deterrence fail and a nuclear war start. Our strategic offensive forces would try to destroy enemy weapons withheld from a first strike. Our defensive forces would try to destroy enemy forces after they had been launched against us. Passive defenses would try to reduce damage from enemy weapons that reached their targets. We believe that it would not be feasible to limit damage by strategically significant amounts against the Soviets because they can and would react to maintain their Assured Destruction capability. Against China, however, effective Damage Limiting appears feasible, at least for the next decade.

D. Limited and Controlled Retaliation

The purpose of this mission would be to induce an enemy to limit his objectives before a war reached the level of massive nuclear attacks and widespread destruction. This appears to be the only way we could save many lives in a nuclear war. The targets for this mission would probably be military forces, but they might also be cities or industry. Initially, at least, only a few of these targets would be destroyed; they would be attacked in a deliberate and controlled way.

III. PLANNING U.S. STRATEGIC FORCES

We must -- and we do -- maintain a very strong deterrent, measured in terms of our Assured Destruction capability. Whatever other missions we may perform, it is vital at all times to withhold a reserve force for this purpose. Even against much greater threats to our Assured Destruction capability than we expect, we set a minimum for our strategic forces -- the ability to kill 20 to 25% of

the Soviet people (with prompt effects only) and to destroy 50% of their industry under any foreseeable circumstances. Maintaining such a capability gives us extra forces which can be used for other missions. Against likely threats in more likely circumstances, our programmed forces have a much greater Assured Destruction capability (typically more than 40% of the Soviet people killed and more than 80% of their industry destroyed).

In addition to buying an Assured Destruction capability, we try to keep the vulnerability of our forces low. We do this to keep the damage the Soviets would suffer in an all-out U.S. retaliation nearly equal to what they would suffer from an all-out U.S. first strike. Thus, even if the Soviets ignored the absolute magnitude of the damage they would suffer in a nuclear war and considered only how much damage they might be able to prevent by striking first, starting such a war would give them little advantage. This further improves our deterrent. We must also be sure that our strategic command/control systems and procedures are adequate to maintain our Assured Destruction capability. For our bombers, we need effective warning systems to ensure their survival. We also need to: (1) identify who attacked us, (2) guarantee a surviving Presidential release authority, and (3) insure surviving communications adequate to execute a preplanned retaliatory strike. Command/control survival, not speed of response, is critical in order to preclude any Soviet advantage in striking first.

Once we have satisfied the primary requirements for Assured Destruction, we then examine the feasibility and cost of other strategic missions. Since a full first-strike capability and a major Damage Limiting capability are infeasible at present, we should not invest large amounts of money to try to pursue them. For this reason, we continue to base the gross size of our strategic nuclear forces on Assured Destruction. However, because we use conservative assumptions to determine the size of our Assured Destruction forces -- such as using the high end of the predicted range of Soviet forces and buying extra forces to hedge against uncertainties -- we find that we will continue to have more than enough forces to destroy Soviet society.

We make plans to use these extra forces in other missions, especially for selective use in a limited nuclear war. The capability for selective use of strategic weapons gives us response options which may be more attractive than all-out attacks on cities or no response at all. Thus, our planning includes providing our strategic offensive forces with the additional system characteristics -- accuracy, endurance, and good command and control -- needed to perform missions in addition to Assured Destruction.

We do not intend to allow our policy of basing the size of our forces on the Assured Destruction mission to result in the Soviets overtaking us or even matching our strategic nuclear power. However, the relationship of

"nuclear superiority" as such to our military and political objectives is debatable. In a conventional war, a numerical advantage in men, firepower, and mobility can force the retreat or destruction of enemy forces and open the way to the occupation of territory. Superior conventional forces bring about the end of a conventional war, and they can yield political power in peacetime. However, once each side has enough nuclear forces to be sure it can substantially eliminate the other's urban society in a second strike, the utility of extra nuclear forces is conjectural.

Strategic nuclear forces do not have the capacity to seize territory, even when they are superior in numbers. They can only destroy it. As a consequence, we know of no feasible way of ending a strategic nuclear war short of the total destruction and exhaustion of both sides, except through mutual control and restraint. Thus, while "nuclear superiority" appears attractive, we do not know how to take advantage of it to achieve our national security objectives. In other words, since the Soviet Union has and can maintain an Assured Destruction capability against the United States, it is not clear how our superior nuclear forces or even more forces might be converted into real political power. It can be argued, however, that if the Soviet Union were to achieve "nuclear superiority," even though we maintained an Assured Destruction capability, Soviet policy might become bolder.

There are still other aspects of the strategic balance that we must consider to prevent any loss of confidence that we can meet our strategic objectives. These other criteria, such as gross comparisons of force payload, numbers of weapons and megatons, or relative U.S./Soviet deaths in a nuclear war, have intuitive appeal. They have not, however, proved very useful in designing our force posture. We continue to consider these criteria, however, because they influence the level of confidence in our strategic nuclear capability and because extreme imbalances would be undesirable. Most imbalances are precluded by our force policies; if extremes did develop in the future, we would reappraise our real capabilities and make whatever adjustments were necessary. We must accept the fact, however, that it is possible for Soviet forces to exceed ours by some criterion (for example, ICBM payload or total megatons) and for our forces nevertheless to be fully adequate.

IV. SOVIET STRATEGIC NUCLEAR CAPABILITIES

A. Soviet Forces

Our ability to accomplish the nuclear missions discussed earlier depends in part on Soviet forces. The table on the next page summarizes the Soviet forces estimated for mid-1968, mid-1970, and mid-1972. The programmed U.S. forces for the same dates are shown for comparison.

U.S. AND SOVIET STRATEGIC OFFENSIVE FORCES

	Mid-1968		Mid-1970		Mid-1972	
	U.S.	Soviet	U.S.	Soviet	U.S.	Soviet
ICBM Launchers a/b/						
Soft	0		0		0	
Hard	1,054		1,054		1,054	
Mobile	0		0		0	
Subtotal	1,054		1,054		1,054	
SLBM Launchers c/	656		656		656	
Total Launchers	1,710		1,710		1,710	
Intercontinental Bombers d/	646		545		521	
Total Force Loadings a/						

a/ Excludes U.S. and Soviet ICBM launchers used for training and development (for the United States and about for the Soviet Union). Train and development launchers are included in the total force loadings.

c/ In addition to the SLBMs on nuclear-powered submarines, the Soviets have SLBMs on diesel-powered submarines whose primary targets (according to intelligence estimates) are strategic land targets in Eurasia. These SLBM launchers number in mid-1968, in mid-1970, and in mid-1972. The Soviets also have submarine-launched cruise missiles whose primary targets are believed to be naval and merchant vessels. These missile launchers number in mid-1968, in mid-1970, and in mid-1972.

d/ We include only heavy bombers which could fly two-way intercontinental missions. The Soviets also have a force of medium bombers and tankers capable of striking Eurasian targets: mid-1968 -- . mid-1970 -- mid-1972 --

The Soviets also maintain a large strategic nuclear force against Western Europe Historically, this has been their top military priority. They now have MRBMs/IRBMs (of which are oriented towards NATO Europe), to medium bombers and tankers, and diesel ballistic missile submarines with this primary mission. We and the Soviets both seem to think of U.S. and West European cities as a single target system.

One of the reasons that we have withdrawn our strategic retaliatory forces from Europe to CONUS or to sea has been to put them beyond the range of Soviet theater nuclear forces. Thus, we have removed the Soviet IR/MRBM threat to our Assured Destruction capability, although we would have to deal with their IR/MRBM threat to Western Europe if we decided to pursue a major Damage Limiting program or a first-strike capability for ourselves and our allies.

B. Comparing U.S. and Soviet Capabilities

There are many criteria for measuring the capability of our forces: for example, yield, payload, or numbers of delivery systems. However, these measures tell us what we have, not what we can do. We prefer to concentrate on measures of effectiveness. To determine how well our strategic offensive forces will achieve their objectives, we must know their ability to destroy various kinds of targets. We then relate this ability to our basic objectives and to the Soviet threat in order to measure the adequacy of our forces. In measuring the ability of our nuclear forces to destroy targets, we cannot simply count total megatons or delivery systems. Factors such as accuracy, reliability, survivability, ability to penetrate defenses, and command/control are often much more important than warhead yield in determining effectiveness.

As shown in the next table, the blast effects of nuclear weapons do not increase in direct proportion to increases in yield. A 10-MT weapon places 30 pounds per square inch (psi) overpressure -- enough to destroy large concrete and brick structures -- on an area of about 18 square miles. Five 1-MT weapons, if separately aimed to avoid overlap, would do more blast damage than one 10-MT weapon. Moreover, low-yield nuclear weapons are more flexible against large, irregularly shaped, area targets. The 20 square miles destroyed by five 1-MT weapons could be shaped like the actual target, while the 18 square miles covered by one 10-MT weapon would be circular, regardless of the target's actual size and shape. Small area targets are much more common than large targets. Against these, the difference in effectiveness is even greater. Only a single circular target with an area of four square miles could be destroyed by one 10-MT weapon, while five such separate targets could be destroyed by five 1-MT weapons.

RELATION BETWEEN WEAPON YIELD AND BLAST EFFECT

Yield (MT)	Distance (Feet) From Ground Zero Covered by 30 psi Overpressure (Ground Burst Weapon)	Area Covered by 30 psi Overpressure (Square Miles)
1	5,860	4
2	7,380	6
5	10,020	11
10	12,625	18

The damage done to a soft area target is relatively insensitive to the accuracy of the weapon used. This is not true when attacking small hardened targets. For example, the kill probability of a single warhead against a hardened missile silo depends on both the yield and the accuracy of the warhead. The next table shows various combinations of yield and accuracy needed to obtain a 90% kill probability against a missile silo

which requires psi blast overpressure to destroy it. As the table shows, by the weapon accuracy, we can reduce the needed weapon yield by a factor of

YIELD AND ACCURACY REQUIRED FOR KILL PROBABILITY AGAINST A PSI TARGET

Yield (MT)	Accuracy (CEP in Feet)
10	
4	
1	

As missile accuracy improves, we should reduce the yield and weight of individual warheads in order to increase the number of separately-targetable warheads carried by our missiles. This improves our ability to penetrate area defenses, increases the number of targets we can destroy with one surviving missile, and increases the efficiency with which we can distribute our weapons over large and small area targets. We have made big improvements in missile accuracy and in development of low-yield, light-weight warheads. We have been able to exploit MIRV technology to increase the number of separately-targeted warheads carried by a single missile from one to as many as . Thus, MIRVs allow us to deliver efficiently the small, accurate warheads we have developed.

If a single index is needed for comparing U.S. and Soviet forces, the number of separately-targetable warheads is the least unsatisfactory because, with good MIRV technology, the number of targets destroyed increases almost in direct proportion to increases in the number of warheads. Between mid-1968 and mid-1972, the number of U.S. separately-targetable warheads will increase from to as our MIRV systems become operational. During this same period, the number of Soviet separately-targetable warheads is expected to increase from to

These comparisons of U.S. and Soviet forces are interesting, but they do not measure our ability to deter war or destroy targets. The most useful comparison is the measurement of our ability to meet our basic objectives.

V. U.S STRATEGIC CAPABILITIES AGAINST EXPECTED THREATS

A. Ability to Meet Objectives Against the Expected Soviet Threat

1. Deterrence

We will continue to have the forces and the command/control for an Assured Destruction capability against the threat obtained by

combining the high ends of the ranges estimated for the Soviet weapon systems. This combination is in itself a higher-than-expected threat. From now to 1977 -- even against the highest Soviet threat projected by the National Intelligence Estimate (NIE) -- we should be able in a second-strike to detonate more than nuclear weapons over the Soviet Union. This could kill over of the Soviet people and destroy of the Soviet industry with prompt effects alone.

In general, whether we are talking about bombers, land-based missiles, or sea-based missiles, our strategic forces would be highly survivable against a Soviet surprise attack. This is true not only because our forces are highly alert and well-protected, but also because we are deploying improved warning systems. Our new warning systems -- OTH radars and early warning satellites -- will completely nullify any advantage of surprise that the Soviets may have thought they could gain with FOBS. The one weakness that we foresee in our warning network is against the long-range Soviet SLBM threat to our bomber bases expected in the mid-1970s. To overcome this potential weakness we are investigating improved warning systems, wider bomber dispersal, and defense of our bomber bases with Sentinel.

2. Selective Response

Although it is doubtful that a limited nuclear war would stay limited for very long, we have the weapons and reconnaissance systems needed for selective responses in such a war. Here we enjoy a marked technical advantage over the Soviets. However, the lack of complete plans and data processing centers for selective responses continues to be a major weakness in our strategic forces.

To overcome this weakness, we are investigating improvements in two areas: (1) providing pre-planned options for the National Command Authority (NCA) for additional selected responses against military and industrial targets (for example, strategic strikes for support of NATO); and (2) providing the procedures, data processing equipment, and computer programs for planning new, selective responses on a timely basis during a crisis.

A nuclear war that remained limited to attacks on strategic forces would kill far fewer people than a war in which cities were attacked. However, even an attack limited to our strategic forces would probably kill more than Americans. Furthermore, we would not be able to deprive the Soviets of enough residual forces to prevent the destruction of our cities, although our surviving offensive forces (measured in deliverable warheads) would probably exceed theirs by a large amount. It is quite uncertain, in these circumstances, how a nuclear war could be stopped.

3. Damage Limiting

As shown in the following table, we do not possess any significant Damage Limiting capability against a Soviet attack designed to destroy our major cities. Only by mutual restraint could we avoid killing large numbers of people.

DEATHS IN AN ALL-OUT STRATEGIC NUCLEAR EXCHANGE IN 1972
(U.S. Programmed Forces; Expected Soviet Forces)

	Soviets Strike First, U.S. Retaliates		U.S. Strikes First, Soviets Retaliate	
	U.S.	Soviets	U.S.	Soviets
Number of People Killed (Millions)	110		120	

The Soviets suffer fewer deaths when we strike first because, in that case, we concentrate our forces on military targets.

B. Ability to Meet Objectives Against China

While China may be able to threaten her neighbors and U.S. bases in Asia by 1970, she will not yet pose a threat to CONUS. If we were to attack China with nuclear weapons, it would be only in retaliation for some lesser act of aggression, probably involving Chinese nuclear weapons. Rather than calling for the destruction of China, such an act would call for selective attacks on military or other targets. Missiles would be needed only for attacking time-sensitive Chinese nuclear targets. Bombers could cover other targets.

Even when the Chinese develop a nuclear threat against CONUS, we will continue to possess an overwhelming first-strike capability against China's nuclear forces. Using Poseidon, we will have the capability to destroy practically all of their nuclear striking power without flying over the Soviet Union.

As few as detonated over Chinese cities would destroy half of China's urban population and more than half of her industry. While this is a small part of China's total population, such an attack could destroy her as a 20th century industrial power. Our recommended strategic nuclear forces could inflict this damage on China while still maintaining our Assured Destruction capability against the Soviet Union.

VI. OPTIONS TO IMPROVE OUR STRATEGIC FORCES

We maintain options to deploy new weapon systems, either in addition to or in place of our programmed forces, as a hedge against the possibility of a greater-than-expected Soviet threat. These options allow us to adjust our mix of strategic nuclear forces in the face of changes in the threat and let us incorporate new technology in our forces to maintain our capability while saving money.

A. Assured Destruction Against Greater-Than-Expected Soviet Threats

We develop plans to cope with much more severe Soviet threats than those projected by the NIE. The range of potential threats is very broad, including new technology (for example, accurate MIRVs on Soviet ICBMs and good low-altitude air defenses) and significant changes in force posture (for example, heavy ABMs). So far we have found it desirable to maintain separate and viable ICBM, SLBM, and bomber forces for our Assured Destruction capability. With these three U.S. forces, a Soviet attempt at a full first-strike or major Damage Limiting capability would be both costly and unprofitable, especially in view of the stated U.S. policy to respond. Such severe threats are therefore unlikely to appear, although some parts of them might -- not as a new direction in policy, but as new systems replace existing forces.

In order to organize our force planning on a consistent basis, we have developed what we call the "Greater-Than-Expected" (GTE) threat. This threat includes all of the offensive and defensive actions discussed above, plus others that the Soviets might undertake in an effort to take away our Assured Destruction capability. There is general agreement that the GTE threat represents the outer limit of Soviet strategic capability against which we must plan. The following table compares the 1977 balanced GTE threat, used in the following analysis, with the NIE threat.

	NIE Threat	GTE Threat
Offensive Missiles		
Independently-targetable Missile Warheads on Line Exoatmospheric Aim Points a/		
Air Defenses		
Look-Down Fighters		
Low-Altitude Surface-to-Air Missile (SAM) Launchers		
ABM Launchers		
Area		
Terminal b/		

a/ Targets for long-range ABMs.
b/ Includes launchers in the Moscow system.

Our remaining SLBMs and alert bomber force can penetrate the NIE-estimated Soviet defenses and kill at least of the Soviet people through . Putting on each Poseidon (instead of the we now plan) and increasing the bomber alert rate to would enable us to kill or more of the Soviets against the GTE offensive threat through 1977.

Similarly, at least through 1976, a very large Soviet ABM system and air defense (without more Soviet ICBMs than we expect) could still let the U.S. programmed strategic force maintain an Assured Destruction capability of over 30% killed. Our programmed force can cope with a greater-than-expected Soviet ABM system because we already programmed ABM hedges — -- when we saw that

By putting on each Poseidon missile and increasing the bomber alert rate, the U.S. programmed force can keep its Assured Destruction capability through FY 77, even if the Soviets deploy greater-than-expected, balanced missile and bomber defenses (without improving their offensive forces). We do not have to exercise these options now to meet this threat.

Only against a combined greater-than-expected Soviet ABM, air defense, and accurate ICBM force, costing the Soviets $20 to $30 billion above the high NIE, would we need major new additions to our retaliatory forces. The following table shows the effect of the combined greater-than-expected Soviet offensive and defensive threat (the GTE threat) on the Assured Destruction capability of our programmed forces. It also shows the effect of developing and deploying , increasing the bomber alert rate to and buying additional Short Range Attack Missiles (SRAMs).

EFFECT OF THE GTE THREAT ON THE U.S. ASSURED DESTRUCTION CAPABILITY
(Percent of Soviets Killed)

FY 70	FY 71	FY 72	FY 73	FY 74	FY 75	FY 76	FY 77

As the table shows, while the combined GTE Soviet threat would call for more effective U.S. strategic forces for FY 74, we can maintain our Assured Destruction capability against this threat by using technological advances that greatly increase the penetration capability of our Poseidon and bomber payloads.

We have, however, three main reasons for wanting additional options to maintain our Assured Destruction capability against the GTE threat. First, we do not want to rely heavily on alert bombers that depend on tactical warning for survival. Second, depending on how far ABM technology advances, we may not want to depend on
Third, even if sea-based missiles and bombers were adequate for Assured Destruction, unless we protect our land-based missile force an improved Soviet offense could destroy it in its silos. Such a vulnerable force might invite rather than deter attack. We would have to take steps to protect Minuteman with local defense and transfer missiles to hard-rock silos or to sea to maintain a viable force. Therefore, although we do not need to buy protection for our land-based missiles until we see the GTE threat, we want to have an option to maintain the viability of our land-based missiles against it.

Since the GTE threat is very unlikely, we prefer options with small initial costs. If later evidence does not rule out the GTE threat, we can then develop these options fully. Because of uncertainties about the performance and cost of new systems, it is usually unwise to plan to deploy them as replacements for proven, existing systems until a threat appears which cannot be economically met by improving the existing

systems. Once an option has been developed, however, and we have confidence in its effectiveness, we examine it to see if it would be an economical replacement for part of our programmed force. In some cases, advances in technology permit us to save money be replacing an existing weapon system with a new one, even though the new system does not provide more total effectiveness than the one it replaces. However, new systems may stimulate the arms race needlessly -- triggering a Soviet reaction that could limit our chances to achieve adequately safe-guarded arms control agreements. Such factors must be weighed carefully in any decision on new strategic forces.

B. Options to Improve our Assured Destruction Capability

Discussed below are the principal options that we have available to protect our Assured Destruction capability.

3. Add Poseidon Submarines

At an investment cost of $290 million per ship and with a 4-year lead time, we could order more Poseidon submarines. By starting procurement in FY 70, we could have five new Poseidon submarines by the end of FY 76 and 10 by the end of FY 77.

4. Improve Minuteman

As a hedge against a heavy Soviet ABM system, we could replace all our Minuteman II by Minuteman III/MIRV at a cost of $2.2 billion over the present program.

5. Defend Minuteman

A defense of our programmed Minuteman force could use the same components being developed for the Sentinel system: Sprint, Spartan, Perimeter Acquisition Radar (PAR), and Missile Site Radar (MSR). An option for a light defense of Minuteman is being maintained in the current Sentinel deployment plan and could be deployed three to four years after a decision to do so.

6. New ICBM

If we started Contract Definition in FY 70, we could deploy a new ICBM in FY 76. We could: (a) deploy a new missile in new silos as part of a defended or undefended fixed land-based system, (b) deploy it as a land-mobile or ship-based system, or (c) base a new missile in a new class of submarines called the Undersea Long-range Missile System (ULMS). Developing a new land-based ICBM would require a $2 to $3 billion Research and Development (R&D) program. The 10-year cost of buying 280 new ICBMs is about $9 billion. ULMS would cost $2 billion in R&D for both the missile and submarine and $5.6 billion for a force of six boats with missiles.

7. Improve Our Programmed Bombers

If Soviet air defenses improved, but their ABM capability did not, we would not need to increase the size of our strategic forces, but we might want to increase the capability of our bomber force. If the Soviets also introduced greater-than-expected ABM defenses, thus increasing our dependence on bombers, then we would definitely want to improve our bomber force. Increasing the alert rate to would cost about $300 million per year. By doing this, buying more SRAMs and SCADs,
, we could maintain our Assured Destruction capability.

8. Advanced Manned Strategic Aircraft (AMSA)

Beginning full-scale development of the AMSA in FY 70 would allow an IOC in FY 77. Although AMSA, like the B-52s, would have to rely on long-range air-to-ground cruise missiles used as decoys to penetrate advanced area defenses and on SRAMs to penetrate advanced terminal defenses, its larger payload and better performance mean that about 115 UE AMSA would be equal in effectiveness to 375 currently programmed UE combat aircraft. One hundred and fifteen (UE) AMSA would cost about $11 billion for development, investment, and 10-year operating costs.

C. Comparison of Options

The following table compares the costs of the bomber and missile force alternatives designed to maintain our Assured Destruction capability against the GTE Soviet threat in 1977.

U.S. ASSURED DESTRUCTION CAPABILITY OF IMPROVED BOMBER FORCE AGAINST THE GTE SOVIET THREAT a/

As the table shows, we could maintain a substantial bombers-only Assured Destruction capability against the GTE threat through FY 77 simply by improving the programmed force. An AMSA is not needed to do this. We would deploy AMSA in FY 77 only if an AMSA force of equal effectiveness costs less than the improved force. Thus, we are continuing an Advanced Development program for AMSA which includes a competitive design, rather than starting Contract Definition and planning on an IOC in FY 77.

VII. CAPABILITIES OF U.S. STRATEGIC FORCES UNDER ARMS-CONTROL AGREEMENTS

Since the Soviets have recently said they would discuss limiting strategic forces, we should also examine the utility and feasibility (with respect to meeting our national security objectives) of possible limitations on strategic weapons.

There are four objectives that we could reasonably expect to achieve from a strategic arms-control agreement:

(1) A more stable deterrent than we would have in the absence of such an agreement. This could be done by reducing the incentives for each side to expand its own forces and thereby develop new threats because of fears that the other side would move ahead.

(2) An improved political climate, which might lead to constructive agreements in other areas, thereby reducing the chances for major wars growing out of a limited crisis.

(3) Useful information for each nation on how the other views nuclear forces and strategy. This would reduce the chances of a miscalculation in a crisis; a nuclear war is much more likely to start by miscalculation than by deliberate decision. If a nuclear war did start, many more people could be saved through restraint and control -- which requires some mutual understanding -- than by active defense of cities.

(4) A reduction in the high costs of improving our strategic forces. However, it is quite unlikely that any large savings over our approved program would be realized for three or four years since development would continue, intelligence programs would probably be expanded, and existing programs would most likely continue. Only after the agreement had been in force for awhile, and we felt we could delay introduction of the next round of weapon systems, would the real savings start to accrue.

All but the first of these objectives would probably be met by any likely agreement. The third objective would be met in part by serious high-level talks even if no agreement resulted. Therefore, it is primarily the first objective that will determine what agreements would be acceptable to both sides.

We believe that the Soviet strategic policy goal is to get a better deterrent and eventually to narrow and overcome the U.S. lead in strategic forces. In recent years, the Soviets have improved their second-strike capability relative to that of the United States. However, projected improvements in U.S. strategic forces -- Poseidon, Minuteman III, and Sentinel -- threaten to erode that improved position. In fact, the Soviets might believe that these new weapon systems threaten their deterrent. Thus, the Soviets now face important and very expensive new decisions on the size and characteristics of their strategic forces. Since the Soviets are faced with the costs of the Czech crisis and Far East deployments, economic considerations could be a major factor in a Soviet decision to limit expenditures on strategic forces. Finally, they may reason that even with large new strategic programs they would not be able to change the strategic balance in their favor, since the United States maintains such large strategic forces and could expand them with less sacrifice than the Soviets.

There are certain criteria by which we must examine any arms-control agreement. Within the terms of any agreement we must be able to:

(1) Maintain or improve the U.S. deterrent and make it more stable;

(2) Leave the Soviet government and world opinion in no doubt as to the adequacy of the U.S. deterrent;

(3) Maintain a U.S. capability -- at least as effective as that we can expect to have in the absence of an agreement -- to limit damage to the United States by Soviet forces if deterrence fails; and

(4) Provide enough strategic forces to prevent nuclear powers other than the Soviet Union from threatening the stability of the agreement.

In examining the feasibility of specific arms-control agreements, we must: (1) test the agreement against our national security objectives, (2) evaluate and define the need for inspections and safeguards, (3) develop a decision strategy and options for U.S. responses to cheating, and (4) plan a negotiating strategy to achieve our goals. We believe that negotiating separate treaties over a period of years, each covering a limited part of the arms-control problem -- rather than trying to agree on one treaty for all time -- enables us to adjust to changes in technology, the threat, and our objectives. This approach offers the best hope of achieving adequately safeguarded agreements.

To evaluate an arms-control agreement, we first compare likely cases of opposing strategic forces with and without an agreement. We also compare corresponding "worst cases" where the Soviets cheat on an agreement to the maximum feasible extent or, in the absence of an agreement, attempt to gain an advantage by the deployment of new or additional strategic forces. If an agreement resulted in a higher U.S. Assured Destruction capability -- or in greater certainty of preserving an acceptable level of Assured Destruction -- then an agreement would be a net gain for the United States, even in strictly military terms. The next table presents the typical results of our Assured Destruction calculations for an agreement that limits offensive missile forces to current levels and ABM launchers to

U.S. ASSURED DESTRUCTION CAPABILITY
(Percent of Soviets Killed) a/

In each case shown in the table, the arms-control agreement does not hurt us, and in many cases it helps. The agreement would be particularly valuable if the Soviets deployed MIRVs.

We also examine the impact of an agreement on our Damage Limiting capability against the Soviets and other nuclear powers. In general, however, we find that any feasible arms limitations would have only a secondary impact.

Fears will inevitably arise that the Soviets can make us vulnerable to attack by secretly improving their offensive or, more importantly, their defensive forces. However, they can take the same steps in the absence of an agreement; therefore, we will also pursue our own hedges to protect our own deterrent, as we would do in the absence of an agreement. The effect of an agreement limiting numbers of missiles and launchers would be to reduce, but not eliminate, the uncertainties against which we would have to insure. Such an agreement could be maintained without on-site inspection. To reduce these uncertainties further, we would seek an agreement with the Soviets on inspection procedures. Although not needed to enforce simple agreements limiting numbers of missiles, any inspection would provide us with information not now available.

VIII. STRATEGIC DEFENSE

A. Defense Against the Soviet Missile Threat

The basic issue is whether we should deploy an ABM system (Nike-X) in defense of our cities. Any system designed to save U.S. cities from a Soviet nuclear missile attack must try to keep ahead of the Soviet threat, including Soviet reactions to our deployments. Such attempts are costly. In our analyses, we use two stages for deploying an ABM system. The first, "Posture A", is an initial step recommended by the JCS. It represents an area defense of CONUS and a light defense of cities. It would cost about $12 billion in investment and $900 million a year to operate. The second, "Posture B", is an attempt to keep ahead of the Soviet threat. It includes a higher density local defense of cities. It would cost about $24 billion in investment and over $1.3 billion a year to operate. [

We believe that effective defenses would eventually cost much more.

The United States could justify these costs only if an ABM defense could limit significantly the ability of the Soviets to kill Americans. Our attempt to limit damage if our deterrent fails also operates to take away the Soviet deterrent. The following table shows what happens if various ABM defenses work and the Soviets do not react.

DEATHS IN AN ALL-OUT STRATEGIC NUCLEAR WAR IN 1977,
ASSUMING NO SOVIET REACTION TO A U.S. ABM SYSTEM
(In Millions)

U.S. Program	Soviets Strike First, U.S. Retaliates		U.S. Strikes First, Soviets Retaliate		Soviet Assured Destruction Calculation
	U.S. Killed	Soviet Killed	U.S. Killed	Soviet Killed	
No ABM					
Sentinel					
Posture A					
Posture B					

As the table shows, the Soviets lose their deterrent if they do not respond. They would be forced to react to increase their ability to strike back. The Soviets have the technological and economic capability to respond in many ways including: (1) adding MIRVs and penetration aids to their projected missile forces; (2) adding a mobile ICBM; (3) adding a new, higher payload, mobile missile; (4) deploying additional SLBMs; (5) defending all or a portion of their ICBM force; (6) adding more bombers; or (7) some combinations of these responses. They might even adopt very unstable launch-on-warning doctrines, if they later felt their response had not been adequate. Against Posture A, the Soviets must respond by adding MIRVs or penetration aids to nearly all of their strategic missiles -- or by adding an equivalent force -- in order to maintain their Assured Destruction capability. Against Posture B, they must respond with MIRVs, penetration aids, and at least (or an equivalent force).

Where the Soviets strike first, we assume they attack our nuclear forces until the saving in Soviet lives becomes very small; then they send the rest of their weapons against U.S. cities. The United States retaliates only against Soviet cities. In a U.S. first-strike, we withhold an Assured Destruction capability (80 million Soviets killed) and apply all other weapons to the Damage Limiting mission. The Soviets retaliate only against cities. These responses, while restoring their Assured Destruction capability, also restore their ability to kill Americans in a first strike.

The table below shows what happens if the Soviets do respond to our ABM deployments.

DEATHS IN AN ALL-OUT STRATEGIC NUCLEAR WAR IN 1977,
ASSUMING A SOVIET REACTION TO A U.S. ABM SYSTEM
(In Millions)

U.S. Program	Soviets Strike First, U.S. Retaliates		U.S. Strikes First, Soviets Retaliate		Soviet Assured Destructi Calculati
	U.S. Killed	Soviet Killed	U.S. Killed	Soviet Killed	
No ABM					
Sentinel					
Posture A					
Posture B					

As part of their response, the Soviets could add large numbers of offensive missiles or buy high confidence MIRVs and penetration aids, which would threaten our Assured Destruction capability. We, in turn, would have to react. Viewing each other's buildup in forces as an increased threat, each side would take counteracting steps, generating a costly arms race with no net gain in security for either side.

The above tables also show an important and paradoxical result regarding first-strikes. The number of U.S. killed when the Soviet Union strikes first is about the same as the number of U.S. killed when the United States strikes first. In the past, when each side had a relatively small second-strike force, the country that attacked first could expect to gain some strategic advantage. Now, however, the United States and the Soviet Union have reached a point where both have a large, hard-to-attack second-strike force. Therefore, the country that now attacks first may destroy some of the other's weapons, but remove the other's incentive to strike at the attacker's forces. Thus, by "freeing" all of the enemy's remaining weapons to strike its own cities, the country that strikes first more than compensates for the enemy weapons it destroys and loses more than it gains. This result strengthens our belief that neither the United States nor the Soviet Union stands to benefit by attacking first.

B. Defense Against the Chinese ICBM Threat

We have evidence that the Chinese are devoting very substantial resources to the development of nuclear warheads and missile delivery systems. Within a period of about four years, they detonated

1968. nuclear tests, together with their continuing work on surface-to-surface missiles, lead us to believe that they are moving ahead with the development of an ICBM. If their program proceeds at its present pace (although there is some evidence it has been delayed), they could have a modest force of ICBMs by the mid-1970s.

The reasons for deploying an ABM system against the Chinese are: (1) it would prevent damage to the United States from a Chinese first-strike; (2) it could increase the credibility of our commitments to defend Asian countries against Chinese nuclear intimidation or nuclear attack; and (3) it could lessen China's ability to drag the United States and the Soviet Union into a nuclear war. In addition, a defense against a small Chinese threat would not deprive the Soviet Union of its Assured Destruction capability and so the Soviets would not necessarily be forced to react.

On the other hand, we already have a massive deterrent against a Chinese attack. A Chinese-oriented ABM system might enhance the prestige of the Chinese nuclear program and reduce confidence in the ability of our offensive forces to deter attacks on our allies. Further, it might suggest that we think the Chinese would act irrationally when many believe they would not. Leaving our Asian bases exposed, this system might suggest that the United States is retreating from Asia to a "Fortress America". Finally, it might keep Asian countries from adhering to a non-proliferation treaty by drawing attention to the threat and causing them to raise demands for their own defense, possibly as a step toward developing their own offensive nuclear capability.

On balance, however, we believe the advantages of a Chinese-oriented ABM system outweigh the disadvantages. Thus, deployment of the Sentinel system was begun in September 1967.

We do not have to depend on deterrence alone to keep the Chinese from attacking us. The Sentinel system can be deployed at an investment cost of about $5 to $6 billion and should be highly effective against the kind of threat the Chinese may pose in the 1970s. The effectiveness of this deployment in reducing U.S. deaths from a Chinese attack in the 1970s is shown below.

U.S. DEATHS FROM A CHINESE FIRST STRIKE IN THE 1970s

Number of Chinese ICBMs on Launchers	10	25	50	75
U.S. Deaths (Millions)				
With No Defense	7	11	18	23
With Sentinel	0+	0+	0+	1

The Sentinel system could probably hold U.S. deaths below one million with some probability of no deaths. For relatively modest additional costs, the system could be improved against a growing Chinese threat so as to limit the damage potential to low levels into the 1980s.

C. Conclusions

Our analysis of the ABM system and its relationship to our strategic offensive forces leads us to conclude that:

1. The Soviets could largely offset any Damage Limiting program we might undertake, provided they are determined to maintain their deterrent against us. Thus, we should not deploy Nike-X to defend our cities against Soviet attacks.

2. We should deploy Sentinel, an effective defense of our cities against an unsophisticated Chinese ICBM attack. The estimated investment cost for the Sentinel program has increased by about $1 billion since the deployment decision was made. This has occurred while Sentinel is still in the planning stage and has not yet experienced the design changes and cost increases that normally result from testing a new system. More attention must be focused on the Sentinel cost reduction program started last year.

3. An ABM defense of Minuteman is the least costly option to insure that our Minuteman force survives. We should maintain the option for the defense of Minuteman using Sentinel components, while continuing the R&D program at a slower pace.

D. Continental Air Defense

Our current air defenses are costly to operate and relatively ineffective. Without a strong and effective missile defense, even a very effective air defense cannot save many lives. The Soviets could simply target cities with their missiles. In the 1970s, the Soviets could kill 110 million Americans if we had no air defense system and 100 million if we had a perfect one.

However, there are other objectives of Continental Air Defense which must also be considered. These include: (1) defense against countries other than the Soviet Union, consistent with Sentinel; (2) defense against bomber attacks on those strategic forces that we withhold in a controlled nuclear war; (3) peacetime patrolling of our air space; (4) discouraging expansion of and improvements in the Soviet bomber force; and (5) use in missions outside the United States.

We can achieve these objectives with a modern, more effective air defense force that costs less over the next 10 years than our present force. This force will include 42 AWACS aircraft, two OTH radars, and 200 improved F-106 fighters (the F-106X). The AWACS aircraft and F-106Xs will provide a perimeter defense up to about 800 miles from our borders. The Federal Aviation Agency National Air Space system will provide limited back-up command and control. Compared with the present force, the modernized force will pay for itself by FY 79 and will realize savings at the rate of $400 million per year after that time.

The following table compares the relative cost and performance of the present force, the modernized force, and an alternative force involving F-12 interceptors.

	Cost ($ Billions)		Soviet Bombers Surviving	
	Ten-Year Cost (FY69-78)	Level-Off Annual Cost	Current Threat a/	Unexpected Threat b/
Present Force	$11.7	$1.12		
200 F-106Xs/AWACS	12.3	.69		
54 F-12s/AWACS	13.7	.75		

a/ The current threat is 100 heavy bombers over CONUS now, but fewer than 50 bombers by the mid-1970s.

Against the current threat the F-106X force is much more effective than the present force and somewhat more effective than the F-12 alternative. The F-12 alternative is slightly more effective against the unexpected threat. All three air defense forces could achieve each of our continental air defense objectives except for Damage Limiting in a nuclear war with the Soviet Union. As previously mentioned, in the absence of a strong ABM defense, the Soviets can kill 110 million Americans with no air defense and 100 million even with a perfect air defense. Therefore, the added capability provided by the F-12s will not save many lives under most likely scenarios.

The Air Force agrees with the modernized force of AWACS aircraft and the F-106X, but proposes that we also develop and deploy 10 F-12s. The added 10-year cost of these F-12s would be about $1.1 billion. The Air Force estimates that these F-12s would reduce the number of surviving bombers from in the case of the current threat However, our analysis shows that our air defenses and our planned missile defenses are out of balance. That is, if we spend an additional billion dollars on missile defense, we can save many more lives than if we spend the billion dollars on air defense.

Therefore, if we were convinced that we need to improve our Damage Limiting capability, we should buy more missile defense before proceeding with the F-12 program.

The same arguments about Damage Limiting also apply to our SAM programs. The Soviets could target SAM-defended cities with missiles and use their penetrating bombers on undefended cities, producing very nearly the same number of deaths. Thus, costly systems such as SAM-D are not justified for CONUS defenses. Our other air defense objectives can be met with an area air defense. In line with the perimeter defense concept in the F-106X/AWACS modernization plan, we should continue to phase out gradually the interior and redundant perimeter part of our air defense system.

E. Civil Defense

Against a Chinese threat, it is more effective to improve Sentinel than to spend additional funds on Civil Defense. Our current Civil Defense program is oriented towards providing fall-out shelter spaces nation-wide to limit damage from a Soviet attack. However, only if we deploy a major ABM defense against the Soviet Union would Civil Defense be useful in significantly limiting damage. Since we are not deploying such a program, Civil Defense can only be justified as a residual insurance program to save some lives (4 to 7%) in the face of very large fatality levels (40 to 50%) or to limit collateral deaths in a restrained war in which the Soviets attack only military targets. In this context, Civil Defense should be a lower priority program than other strategic defense programs.

We have built a large inventory of about 180 million identified shelter spaces. In view of our objectives, however, the program is unbalanced. Within our present priorities, we have balanced the program at a lower funding level, $71 million, to improve our capability to use these identified spaces rather than adding new spaces. This program provides funds for improved warning, shelter stocks, an experimental shelter construction incentive program, financial assistance to states, a limited amount of training and education, and program management. We are now studying alternative levels of Civil Defense in order to develop a balanced operational capability at each level.

IX. SPECIFIC RECOMMENDATIONS

In light of the above discussion, we recommend:

1. Approving the JCS recommendation to provide a SRAM and SCAD capability for all 17 B-52 G/H squadrons, at an additional FY 70 cost of $120 million and an additional overall cost of $330 million. Deferring,

however, the JCS recommendation to equip the B-52/FB-111 force with SRAM. The additional SRAMs would cost $450 million in FY 70-77.

2. Approving the JCS recommendation for Contract Definition of the Subsonic Cruise Armed Decoy (SCAD) and planning on an IOC of FY 74, subject to favorable review of Concept Formulation. The SCAD development program will require $30 million in FY 70 and $200 million in FY 70-74. Deploying a force of missiles would require an additional $361 million in FY 70-77.

3. Deploying six squadrons of FB-111s (90 UE aircraft) rather than the 14 squadrons previously approved. This will save $600 million in FY 70 and $2.9 billion in FY 70-79.

4. Keeping the programmed force of six B-58 squadrons until the introduction of SCADs for the B-52s. This will cost $35 million in FY 70 and $250 million in FY 70-74.

5. Keeping one additional B-52 squadron plus the additional crews and support personnel needed to maintain Southeast Asia operations through FY 70, at an FY 70-71 cost of $17 million. Maintaining a B-52 force of 20 squadrons (rather than 17 as previously programmed) after FY 71 until structural modifications are needed. This will cost $450 million in FY 72-77.

6. Disapproving the JCS recommendation for Contract Definition and full-scale development of the AMSA in FY 70. Continuing, however, with an Advanced Development program which will include a detailed competitive aircraft design. The 10-year systems cost of developing, buying, and operating a force of 115 (UE) AMSAs would be $8 billion.

7. Disapproving the JCS recommendation for Contract Definition of a new tanker based on the C-5. The present KC-135 fleet is satisfactory. The 10-year cost of developing, buying, and operating a force of 210 C-5 tankers would be $6 billion.

8. Disapproving the JCS recommendation for full-scale development of an advanced airborne command post. The 10-year cost of developing, buying, and operating a force of 14 command posts would be $1.2 billion.

9. Maintaining a force of 1,000 Minuteman missiles. Maintaining the IOC for Minuteman III at June 1970.

10. Disapproving the JCS recommendation for development of the To complete this program would require $20 million in FY 70 and a total of $380 million in FY 70-74.

11. Continuing the Advanced Development program for the advanced ICBM system , but disapproving the JCS recommendation for Contract Definition in FY 70. This missile provides little improvement over Minuteman. The 10-year cost of developing, buying, and operating a force of missiles would be $10 billion.

12. Continuing Advanced Development of the ULMS, but disapproving the JCS recommendation for Contract Definition in FY 70.

13. Disapproving the JCS recommendation for Contract Definition on a Surface-ship-based Long-range Missile System (SLMS) in FY 70. This ship could not replace Poseidon and offers little advantage and many disadvantages when compared to ULMS. The 10-year investment and operating costs for ships would be $4.6 billion.

14. Disapproving the JCS recommendation for a prototype surface-ship-based intermediate range missile system, called the Ballistic Missile Ship (BMS). We do not need additional payload on the crash schedule that would justify this program. Construction of a prototype would cost $250 million, plus $75 million for five years of operation.

15. Continuing to plan for an average of per Poseidon missile. (The JCS recommend an initial load of per missile at an additional cost of $217 million in FY 70.) Continuing development of Poseidon and, in FY 70, converting six Polaris submarines to the Poseidon configuration for a total investment of $1.1 billion in FY 70. Planning to build to a force of 31 Poseidon submarines by FY 76 for a total FY 70-74 investment of $5.3 billion.

16. Disapproving the JCS recommendation to provide . Development of such a warhead plus the modifications needed for the Poseidon missile would cost $210 million.

17. Approving the JCS proposal to continue converting to Polaris A-3 missiles those remaining submarines not included in the Poseidon conversion program. This program requires no funds in FY 70.

18. Deferring decision on the JCS recommendation to deploy additional communication relay (TACAMO) aircraft for command and control of the Polaris fleet. The additional aircraft in the program would cost $57 million in FY 70 and $285 million in 10-year system costs. As an alternative for decision in June 1969, we should consider adding new satellite communications to the current force to greatly extend its capabilities. In the interim, we should program $4.2 million in FY 70 for the new modulation techniques.

19. Disapproving the JCS recommendation to deploy an ABM defense of the United States against the Soviet threat. The JCS program would require $270 million in FY 70 in addition to the Sentinel program. The JCS-recommended objective for a Nike-X defense would cost $10 billion in 10 years above the cost of the Sentinel system.

20. Continuing the deployment of the Sentinel system at an FY 70 cost of $1.8 billion. The estimated total system investment cost is $5.6 billion, plus $1.8 billion in R&D (exclusive of Atomic Energy Commission costs).

21. Approving the JCS recommendation to preserve the option for a light defense of Minuteman using Sentinel radars and additional Sprint missiles. For an IOC by the end of FY 74, $8 million is needed in FY 70 for long lead-time items.

22. Disapproving the JCS recommendation for Contract Definition on a Sea-based Anti-Ballistic Missile Intercept System (SABMIS) in FY 70. The R&D and 10-year investment and operating costs for eight SABMIS ships would be $5.9 billion.

23. Disapproving Contract Definition for the Airborne Missile Intercept System (ABMIS), a concept for which there is no advanced development program.

24. Continuing implementation of the Continental Air Defense Plan, as recommended by the Air Force. In FY 70, this action involves $28 million for development of the F-106X interceptor and $120 million for a full-scale development of AWACS. This plan includes development and deployment of back-scatter OTH radars for CONUS; it will cost $12.3 billion in FY 69-78, compared to $11.7 billion for the previously approved program.

25. Disapproving the JCS proposal to resume development of the F-12 interceptor. The 10-year cost of F-12s, as recommended by the Air Force, would be $0.8 to $1.0 billion. The (UE) F-12s in the JCS objective force would cost $3.4 billion.

26. Approving selected parts of the JCS recommendation to expedite a comprehensive improvement program (MOHEC) for Nike-Hercules, at a cost of $11.2 million in FY 70. The entire JCS plan would cost $35 million in FY 70 and a total of $375 million to complete.

28. Disapproving the JCS recommendation to extend the approved military survival measures program from $38 million to $190 million over five years. Continuing instead the previously approved program at an FY 70 cost of $9 million.

29. Disapproving the JCS recommendation for a $150 to $200 million annual Civil Defense program. Approving instead an austere holding program at an FY 70 cost of $71 million, pending a re-examination of our objectives and new programs to maximize the number of operationally effective shelter spaces.

30. Approving an Air Force proposal to modify the Spacetrack system in order to provide a real-time data display and threat analysis system in a new Space Defense Center. This will cost $36 million in FY 70-71. Deferring decision on improved or additional sensors that may be needed to improve the real-time space catalog and space defense function, pending receipt of an Air Force Master Plan.

FYDP/DMS TABLE 110 -- U.S. STRATEGIC OFFENSIVE FORCES
(End of Fiscal Years)

	FY 61	FY 65	FY 66	FY 67	FY 68	FY 69	FY 70	FY 71	FY 72	FY 73	FY 74	FY 75	FY 76	FY 77
Bombers: Authorized Active Inventory (AAI)														
B-47/EB-47	990	248	-	-	-	-	-	-	-	-	-	-	-	-
B-52C-F a/	413	413	380	330	281	214	132	50	50	50	50	50	50	50
B-52G-H	198	281	281	281	281	281	281	281	281	281	281	281	281	281
B-52G-H (SRAM Capable, Non-add)	-	-	-	-	-	-	-	(110)	(235)	(281)	(281)	(281)	(281)	(281)
B-58/TB-58	44	88	88	86	86	86	86	85	84	83	-	-	-	-
FB-111A	-	-	-	-	-	-	50	116	110	110	110	110	110	110
Total Bombers (AAI)	1,645	1,030	749	697	648	581	549	532	525	524	441	441	441	441
Air-Launched Missiles: Unit Equipment (UE)														
Round Dog A and B	216	560	540	480	340	340	340	340	340	340	340	340	340	340
Short Range Attack Missile (SRAM)	-	-	-	-	-	-	-	355	540	540	540	540	540	540
Subsonic Cruise Armed Decoy (SCAD) b/	-	-	-	-	-	-	-	-	-	-	180	580	780	780
Total Air-Launched Missiles (UE)	216	560	540	480	340	340	340	695	880	880	1,060	1,460	1,660	1,660
Ballistic Missile Launchers														
Missile														
Atlas	28	-	-	-	-	-	-	-	-	-	-	-	-	-
Titan	-	54	54	54	54	54	54	54	54	54	45	36	36	36
Minuteman	-	800	800	657	570	500	437	297	147	-	-	-	-	-
Minuteman	-	-	80	300	394	494	494	494	494	487	480	473	466	459
Minuteman	-	-	-	-	-	-	10	150	300	457	514	521	528	535
Polaris	48	400	432	512	512	512	496	320	272	192	160	128	96	128
Poseidon	-	-	-	-	-	-	-	64	176	320	352	368	368	368
Subtotal Missile Launchers On Line	76	1,254	1,366	1,523	1,530	1,560	1,491	1,579	1,443	1,510	1,551	1,555	1,494	1,526
Independently-Targetable Missile Warheads On Line (Non-add)														
Missile Area Aim Points (Non-add)														
Missile Terminal Aim Points (Non-add)														
	-	-	-	43	36	6	59	59	59	56	6	6	6	6
	32	64	160	144	144	144	160	272	208	144	144	160	192	160
	108	1,318	1,526	1,710	1,710	1,710	1,710	1,710	1,710	1,710	1,701	1,701	1,692	1,692
Other Forces (AAI)														
Quail (UE)	324	392	390	390	390	390	390	390	390	390	300	100	-	-
EC-97/EC-135	1,100	814	682	682	677	677	677	677	677	677	677	677	677	677
RB-47/RC-135	99	30	14	11	11	11	11	11	11	11	11	11	11	11
SR-71 a/	-	6	18	28	26	19	19	19	19	19	19	19	19	19
Post Attack Command and Control System (PACCS) (B-47/EC-135)	-	26	30	30	35	35	35	35	35	35	35	35	35	35
Regulus (UE)	17	-	-	-	-	-	-	-	-	-	-	-	-	-
Tacana (C-130)	-	-	-	4	4	12	12	12	12	12	12	12	12	12
Other Tactical Support Aircraft	99	99	99	99	128	128	131	99	99	99	99	99	99	99
Ballistic Missile Submarines (SSBNs)														
On Line	3	25	27	32	32	32	31	24	28	32	32	31	29	31
In Conversion/Overhaul/Shakedown	2	4	[illegible]	9	9	9	10	17	13	9	9	10	12	10
Total Forces c/														
Weapons														
Megatons														
1-Megaton Equivalents g/														
Alert Forces f/														
Weapons														
Megatons														
1-Megaton Equivalents g/														

a/ Does not include aircraft in Active Storage.

b/ One-third of the SCADs carry warheads. The numbers of missiles shown are tentative and are for planning purposes only. They will be revised as necessary after completion and review of the SCAD concept formulation documents.

c/ Each missile type is shown with the average number of independently targetable warheads per missile/yield per warhead in megatons (MT)/Circular Probable Error (CEP) of the last version shown in nautical miles (NM). Tables 1 and 3 of the Appendix to the Strategic Force and Effectiveness Tables list detailed characteristics of U.S. missiles.

d/ To be comparable with Soviet force loadings in DMS Table 210, force loadings reflect only those independently targetable weapons which would be loaded for initial strikes by AAI aircraft, ICBM launchers on line plus research and development launchers and those in modernization, and on line SLBM launchers. Thus, total force loadings represent our emergency combat capability in a protracted crisis. Weapons reserved for restrike and weapons on inactive status are not included. (Thus, for example, this table does not show that in FY 61 there were more than non-laydown bombs with a total yield of about megatons not loaded in the force and scheduled for phase-out in FY 62.) Table 1 of the Appendix to the Strategic Force and Effectiveness Tables shows the research and development ICBM launchers.

e/ Equivalent yield is calculated by taking yield to the one-half power for weapons greater than one megaton and to the two-thirds power for weapons less than one megaton.

f/ Table 4 of the Appendix to the Strategic Force and Effectiveness Tables lists the alert rates. The U.S. forces on day-to-day alert include: (1) ICBMs with a reaction time from normal readiness of 15 minutes or less; (2) SLBMs carried by submarines at sea; and (3) bombers on ground alert with a reaction time of 15 minutes or less.

Tentative
Record of Decision

January 9, 1969

FYDP/BNS TABLE 110 -- U.S. STRATEGIC OFFENSIVE FORCES (Cont'd)
(End of Fiscal Years)

	FY 61	FY 65	FY 66	FY 67	FY 68	FY 69	FY 70	FY 71	FY 72	FY 73	FY 74	FY 75	FY 76	FY 77
Authorized Units														
Bomber Squadrons														
B-52B-47	60	15	-	-	-	-	-	-	-	-	-	-	-	-
B-52C-F a/	21	23	21	18	15	11	6	2	2	2	2	2	2	2
B-52C-F (Training) b/	4	2	2	2	2	2	2	1	1	1	1	1	1	1
B-52G-H	10	17	17	17	17	17	17	17	17	17	17	17	17	17
B-58/TB-58	3	6	6	6	6	6	6	6	6	6	-	-	-	-
FB-111A	-	-	-	-	-	-	3	6	6	6	6	6	6	6
FB-111A (Training) b/	-	-	-	-	-	-	-	1	1	1	1	1	1	1
Total Bomber Squadrons	98	63	46	43	40	36	34	33	33	33	27	27	27	27
Tanker Squadrons														
KC-97	30	6	-	-	-	-	-	-	-	-	-	-	-	-
KC-135	26	41	41	41	41	41	40	40	40	40	40	40	40	40
Total Tanker Squadrons	56	47	41	41	41	41	40	40	40	40	40	40	40	40
Total Force Loading														
Weapons														
Bombers														
Land-Based Missiles														
Sea-Based Missiles														
Total Weapons														
Megatons														
Bombers														
Land-Based Missiles														
Sea-Based Missiles														
Total Megatons														
Equivalent Megatons														
Bombers														
Land-Based Missiles														
Sea-Based Missiles														
Total Equivalent Megatons														
Alert Force Loading														
Weapons														
Bombers														
Land-Based Missiles														
Sea-Based Missiles														
Total Weapons														
Megatons														
Bombers														
Land-Based Missiles														
Sea-Based Missiles														
Total Megatons														
Equivalent Megatons														
Bombers														
Land-Based Missiles														
Sea-Based Missiles														
Total Equivalent Megatons														

a/ Four squadrons in FY 68 and FY 69 and two squadrons in FY 70 do not provide day-to-day alert sorties because of commitments in Southeast Asia.
b/ These aircraft do not provide day-to-day alert sorties, but they have the capability to generate combat sorties if necessary.

Tentative
Record of Decision

January 9, 1969

FYDP/DMS TABLE 115 -- STRATEGIC DEFENSIVE FORCES
(End of Fiscal Years)

	FY 61	FY 65	FY 66	FY 67	FY 68	FY 69	FY 70	FY 71	FY 72	FY 73	FY 74	FY 75	FY 76	FY 77
Air Defense Systems														
Aircraft: Authorized Active Inventory (AAI)														
Interceptors														
Air Force														
F-101	435	318	318	318	278	140	134	134	134	134	134	-	-	-
F-102	322	259	96	37	29	29	29	-	-	-	-	-	-	-
F-104	-	40	40	37	26	26	26	26	26	26	26	-	-	-
F-106	304	274	272	257	251	231	238	238	238	219	-	-	-	-
F-106A	-	-	-	-	-	-	-	-	-	19	238	238	238	238
Subtotal Air Force	1,061	891	774	649	584	446	427	398	398	398	398	238	238	238
Air National Guard (ANG)														
F-86	275	-	-	-	-	-	-	-	-	-	-	-	-	-
F-89	275	180	100	44	40	40	-	-	-	-	-	-	-	-
F-100	66	-	-	-	-	-	-	-	-	-	-	-	-	-
F-102	130	208	344	404	404	404	345	285	285	285	107	28	28	28
F-104	61	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal ANG	807	388	444	444	444	444	345	285	285	285	107	28	28	28
Navy														
F-6	28	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Interceptors, AAI	1,896	1,279	1,188	1,093	1,028	890	772	683	683	683	505	266	266	266
Tactical Support for F-106X (C-130)	-	-	-	-	-	-	-	-	-	20	73	73	73	73
Other Tactical Support Aircraft	160	166	176	173	175	175	153	153	153	153	153	153	153	153
Target Aircraft	243	420	365	339	318	265	262	255	255	254	254	254	254	254
Surface-to-Air Missiles (SAMs)														
On Site a/ b/	238	180	180	172	164	156	148	140	132	124	-	-	-	-
Nike (Hercules and Ajax)														
Army	1,400	1,509	1,196	1,196	1,196	851	841	841	861	861	861	861	861	861
ANG	1,600	807	834	834	834	777	717	717	717	717	717	717	717	717
Hawk (Regular)	-	288	288	288	288	286	288	288	288	288	288	288	288	288
Total SAMs On Site	3,238	2,775	2,498	2,488	2,480	2,112	2,014	2,006	1,998	1,990	1,866	1,866	1,866	1,866
Control and Surveillance Systems b/														
NORAD Combat Operations Center	1	1	1	1	1	1	1	1	1	1	1	1	1	1
SAGE Combat Centers	8	7	6	6	6	5	4	4	4	4	3	2	-	-
SAGE Direction Centers	20	16	14	14	14	13	11	11	11	6	6	-	-	-
BUIC II Control Centers	-	-	13	13	9	-	-	-	-	-	-	-	-	-
BUIC III Control Centers	-	-	-	-	-	12	15	15	15	15	15	15	10	-
Search Radars	182	162	158	154	141	126	118	118	118	118	118	80	80	80
ANG Search Radars	6	6	6	5	3	3	3	3	3	3	3	3	3	3
Gap Filler Radars	-	-	-	91	17	17	17	17	17	17	17	-	-	-
Distant Early Warning (DEW) Radars	67	39	39	39	39	39	33	33	33	33	33	-	-	-
Over-the-Horizon (OTH) Radar (Back-Scatter)	-	-	-	-	-	-	-	-	-	2	2	2	2	2
SAF Fire Coordination Centers	10	25	19	22	22	19	19	19	19	19	19	19	19	19
Radar Ships	31	19	-	-	-	-	-	-	-	-	-	-	-	-
Surveillance and Warning Aircraft														
EC-121: Air Force	77	83	80	80	80	80	80	47	47	47	47	-	-	-
Navy	55	22	-	-	-	-	-	-	-	-	-	-	-	-
Airborne Warning and Control System (AWACS)	-	-	-	-	-	-	-	-	-	-	13	46	46	46
Total Surveillance/Warning Acft	132	105	80	80	80	80	80	47	47	47	60	46	46	46

a/ Equivalent to deployed, operational missiles. Excludes training launchers.
b/ Includes CONUS, Alaska, Hawaii, Puerto Rico, Canada, Greenland, and Iceland.

FYDP/DMS TABLE 115 -- U.S. STRATEGIC DEFENSIVE FORCES (Cont'd)
(End of Fiscal Years)

	FY 61	FY 65	FY 66	FY 67	FY 68	FY 69	FY 70	FY 71	FY 72	FY 73	FY 74	FY 75	FY 76	FY 77
Authorized Units														
Fighter Squadrons														
Air Force														
F-101	17	15	15	15	13	6	6	6	6	6	6	-	-	-
F-102	11	9	3	1	1	1	1	-	-	-	-	-	-	-
F-104	-	2	2	1	1	1	1	1	1	1	1	-	-	-
F-106	14	13	13	13	11	11	11	11	11	10	-	-	-	-
F-106X	-	-	-	-	-	-	-	-	-	1	11	11	11	11
ANG														
F-86	10	-	-	-	-	-	-	-	-	-	-	-	-	-
F-89	10	9	5	2	2	2	-	-	-	-	-	-	-	-
F-100	3	-	-	-	-	-	-	-	-	-	-	-	-	-
F-102	7	13	17	20	20	20	17	14	14	14	5	1	1	1
F-104	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Navy														
F-6	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Fighter Squadrons	76	61	55	52	48	41	36	32	32	32	23	12	12	12
Surveillance & Warning Squadrons														
EC-121	11	9	7	7	7	7	7	4	4	4	4	-	-	-
AWACS	-	-	-	-	-	-	-	-	-	-	2	6	6	6
Total Surveillance & Warning Squadrons	11	9	7	7	7	7	7	4	4	4	6	6	6	6
Surface-to-Air Missile Batteries														
Bomarc (Squadrons)	6	6	6	6	6	6	6	6	6	6	-	-	-	-
Nike (Hercules and Ajax)														
Army	85	88	73	73	73	52	50	50	50	50	50	50	50	50
ANG	110	54	54	54	54	50	47	47	47	47	47	47	47	47
Hawk (Regular)	-	8	8	8	8	8	8	8	8	8	8	8	8	8
Total SAM Batteries	201	156	141	141	141	116	111	111	111	111	105	105	105	105