TOP SECRET

February 14, 1969

U.S. STRATEGIC NUCLEAR FORCE CAPABILITIES
(Presentation Before the National Security Council)

I would like to discuss the capabilities of our strategic nuclear forces. I will first compare U.S. strategic forces, as they are currently programmed, with our best estimates of Soviet strategic forces. Then I will briefly discuss the objectives we use as the basis for designing our strategic forces. My last task is more formidable -- to measure the performance of our forces in terms of those objectives.

1. Strategic Force Posture Comparisons

COMPARISON OF STRATEGIC NUCLEAR FORCES (Chart 1)
(End of Fiscal Years)

	FY 70		FY 76	
	U.S.	Soviet	U.S.	Soviet
Missile Launchers				
Soft ICBMs	0	142-128	0	0
Hard ICBMs a/	1,054	1,016-1,079	1,054	1,134-1,496
Soft MRBMs/IRBMs	0	470-370	0	0
Hard MRBMs/IRBMs b/	0	160-285	0	485-685
Submarine-Launched Ballistic Missiles (SLBMs)	656	158-238	656	542-830
Anti-Ballistic Missiles (ABMs)	0	56-64	672	215-1,005
Intercontinental Bombers	549	135-140	441	55-80
Total Nuclear Warheads	[redacted]	1,580-1,710	[redacted]	2,870-3,120

a/ Includes 50 mobile ICBM launchers in FY 76.
b/ Includes 25-75 mobile MRBM launchers in FY 70 and 125-200 mobile MRBM/IRBM launchers in FY 76.

Portions denied are S-FRD and thus outside of the jurisdiction of the Interagency Security Classification Appeals Panel.

Withheld from public release under statutory authority

This chart compares the currently approved U.S. strategic forces and the Soviet strategic forces derived from the most recent National Intelligence Projections for Planning (NIPP). The number of U.S. hard ICBMs (Minuteman and Titan II) is programmed to be 1,054 through FY 76, while the number of Soviet hard ICBMs is projected to increase from the current level of slightly under 1,000 to a possible high of 1,496 by FY 76. The Soviet MRBMs/IRBMs are a threat to our allies in Europe, but not to the U.S. mainland. In our current targeting, we give these missiles equal priority with the Soviet ICBMs which do threaten the United States. We now have about a 3 to 1 margin in SLBMs. By FY 76, both sides will probably have about the same number of SLBMs, although the Soviets could have as many as 50 Polaris-type submarines, with 16 missiles each, if they continue to deploy them at the present rate. In terms of missile technology, the Soviets are about 5 to 7 years behind us. They are just beginning to deploy missiles comparable to the Minuteman and Polaris we deployed in the early 1960s. The ABM deployments show the Sentinel system for the United States, while the Soviet system is projected to grow from the current Moscow system to a range of 215-1,005 ABM launchers by FY 76. A comparison of intercontinental bomber forces is shown near the bottom

TOP SECRET

09-M-0247 09-M-0247-A1

Sec Def Cont Nr. X-0822

of the chart. The Soviets also have a large number of medium bombers which are not shown because our intelligence indicates that it is most unlikely they would be used against the United States. Finally, the chart shows the total numbers of nuclear warheads for both countries.

While the number of U.S. offensive missiles is not programmed to change during the time period shown in the chart, we are improving the capability of our strategic forces by introducing Minuteman IIIs and converting Polaris submarines to carry the Poseidon missile. These new missiles will carry Multiple Independently-targetable Re-entry Vehicles (MIRVs) -- three on Minuteman and up to 14 on Poseidon. We are also deploying new attack missiles for our bombers. We have made these improvements primarily to give us high confidence of being able to penetrate any ABM system the Soviets might deploy in the 1970s.

These improvements in capability are not reflected in the numerical comparisons shown in the chart. Thus, a better comparison of U.S./Soviet strategic offensive forces can be made by examining the loadings that are carried by missiles and bombers. As the next chart shows, the United States has and will continue to have more warheads than the Soviet Union. In terms of equivalent megatons (a commonly used index of comparison) the two forces will be about equal in FY 76. The Soviets have a larger total missile payload as a result of their deployment of large booster missiles such as the SS-9. During the past six months, the Soviets conducted a series of tests of the SS-9s, each carrying three Re-entry Vehicles (RVs). We have no evidence that they have developed the capability to target the RVs to widely separated targets, as we can with Poseidon and Minuteman. If their program is aimed at a MIRV system, however, they could achieve an Initial Operational Capability (IOC) for a primitive system effective only against soft targets by FY 70 and a more accurate system effective against Minuteman silos by FY 72. The force loadings shown reflect a MIRV capability for the Soviets as well as for our programmed forces.

COMPARISON OF U.S. AND SOVIET FORCE LOADINGS (Chart 2)
(End of Fiscal Years)

	FY 70		FY 76	
	U.S.	Soviet	U.S.	Soviet
Total On-Line Force				
Warheads	[redacted]	1,580-1,710	[redacted]	2,870-3,120
Equivalent Megatons		2,920-3,010		3,650-4,020
Missile Payload (Kilopounds)		5,060-5,360		7,230-8,440
Alert Force				
Warheads		900-970		2,110-2,190
Equivalent Megatons		1,690-1,740		2,630-2,790
Missile Payload (Kilopounds)		3,470-3,680		5,470-6,350

These comparisons, while descriptive, do not tell us how well our strategic nuclear forces can meet their objectives.

2. Strategic Objectives

The basis objectives of our strategic forces are to deter nuclear war and, in case a war does start, to achieve the best possible outcome. This is generally thought to be that outcome which would result in the fewest U.S. deaths. I believe there is general agreement within the Department of Defense with this statement of our general objectives. On this basis, I will now assess the capability of our strategic forces to meet these objectives.

3. Evaluation of U.S. Strategic Force Capabilities

Central to our ability to deter a general nuclear war with the Soviet Union is our capability to destroy a large part of the Soviet population and industrial base in retaliation to a Soviet attack. In effect, we are able to hold these Soviet resources hostage in order to deter Soviet aggression against ourselves and our allies. The next chart shows our retaliatory capability under various assumptions about the availability of our strategic forces.

U.S. RETALIATORY CAPABILITY AGAINST THE HIGH MIPP SOVIET THREAT (Chart 3)
(Percent of the Soviet People Killed; End Fiscal Years)

U.S. Forces Available	FY 70	FY 73	FY 76
Programmed Force	43%	45%	44%
Land-Based Missiles Only	39	38	34
SLBMs Only	30	36	30
Bombers Only	29	17	17

In calculating the U.S. retaliatory capability, we assume the following: (1) the Soviets make a surprise attack with all of their available missiles on our strategic forces, which are in a day-to-day alert posture; (2) the Soviets use all of their strategic offensive forces in a first strike, except for their bombers, which they keep to threaten our cities; and (3) the United States retaliates with its surviving missiles and bombers in an attack against Soviet cities. We then calculate the level of deaths (as a percentage of the total Soviet population) that we can inflict in retaliation from blast effects alone. The capability to kill 30% of the Soviet people would correspond to the destruction of the 190 largest Soviet cities and at least 60% of the Soviet industrial capacity. The capability to cause this much damage -- under these conservative circumstances -- corresponds to the capability to destroy the 500 largest Soviet cities in more likely cases if we want to do so.

Our currently programmed force has the capability to kill over 40% of the Soviet people in retaliation against the high MIPP threat through FY 76. Moreover, each component of our force (ICBMs, SLBM's, and bombers) has a substantial capability individually. Thus, even if the Soviets threaten the viability of one of our force components, the remaining two components give us adequate insurance against a Soviet nuclear attack.

I would now like to consider the outcome of a U.S./Soviet nuclear war (if one should start) in terms of relative numbers of deaths. A large imbalance in favor of the Soviets could adversely affect our deterrent. As shown in the following chart, however, there is not a great difference in the number of people each side could kill; the relative balance depends upon the circumstances under which the war starts. In an actual nuclear exchange, the relative number of deaths would also depend upon the war plan selected by each side.

DEATHS (IN MILLIONS) IN A NUCLEAR WAR (Chart 4)
(U.S. Programmed Force vs the High MIPT Soviet Threat)

	Soviets Strike First; U.S. Retaliates		U.S. Strikes First; Soviets Retaliate	
	U.S. Deaths	Soviet Deaths	U.S. Deaths	Soviet Deaths
FY 62	60	120	60	120
FY 70	100	120	110	100
FY 76	100	120	110	100

The major actions we could take in an attempt to reduce the number of U.S. deaths (or to limit damage) are: (1) make a counterforce attack against the Soviet retaliatory forces with our offensive forces, (2) actively defend against Soviet air and missile attacks, and (3) take civil defense measures. From the Soviet viewpoint, these actions would have the effect of reducing their retaliatory capability. They would then have the option to react to our damage-limiting capabilities, just as we can react to any threats to our deterrent. The logical Soviet response to a large-scale U.S. damage-limiting effort would be to increase the capability of their offensive forces. It can be argued that a continuing escalation of opposing forces would place greater financial burdens on the Soviet Union than on the United States. However, it is hard to estimate the extent to which the Soviets would sacrifice in order to maintain their own retaliatory capability. (Backup charts are available on damage limiting against the Soviet Union and Red China.)

4. Conclusion

In closing, let me say that there are some fundamental questions that will be reviewed carefully in the next few months. Some of the issues which come to mind are the required level of, and confidence in, our retaliatory capability; the extent to which we can limit damage to the United States in the event of a nuclear war; and the reactions between U.S. and Soviet deployments of strategic forces.

I believe we now have and can maintain a strong retaliatory capability through the mid-70s. Our ability to limit damage to the United States depends to a large extent on Soviet reactions and resolve. As long as both nations are determined to maintain a large retaliatory capability, neither side can count on gaining an advantage (in terms of the relative number of deaths) by attacking first.

Finally, although I have not discussed it today, our analysis of the proposed U.S. strategic arms control agreement shows that it would have a small but positive effect on our retaliatory capability. Even if the Soviets should try to cheat on the agreement, we could still maintain our retaliatory capability throughout the time period examined.

Appendix

ANALYSIS OF THE U.S. PROPOSAL FOR LIMITING STRATEGIC MISSILES

We have just completed an updated analysis of the U.S. arms control proposal which was prepared last summer. This update was necessary because there have been changes in our projections of the Soviet threat (primarily a two-year delay in the Soviet ABM program) and some changes to our own strategic program since that time. I will briefly discuss the effect of the proposed agreement on our retaliatory capability. I will also consider the effects of cheating by the Soviets.

The proposed arms control agreement would fix for both sides the level of offensive missile launchers (ICBMs, IRBMs/MRBMs, and SLBMs) at the number in operation or under construction at the time of the agreement (we used September 1, 1969 in our analysis). (A backup chart on force levels under the proposed agreement is available). The number of ABM launchers would be fixed at a yet unspecified level, but we believe the upper limit should be about 1,000 launchers. Mobile ICBMs and mobile ABMs would be banned. The agreement would not apply to bombers, air defenses, MIRVs, Anti-Submarine Warfare (ASW) forces, civil defense, or research and development.

In our analysis, we assumed that the number of ABM launchers on both sides would be fixed at 670 (Sentinel level). The next two charts show the more important results of our analysis.

U.S. RETALIATORY CAPABILITY a/ (Chart 5)
(Percent of the Soviet People Killed)

	FY 70	FY 72	FY 74	FY 76
No Agreement (U.S. Programmed Forces vs. High NIPP Soviet Force)	43%	44%	44%	41%
With An Agreement (U.S. Limited vs. Soviet Limited)	44%	44%	44%	43%

a/ Assumes that our missile penetration aids do not work.

This chart shows our retaliatory capability, in terms of the percentage of Soviet people killed, with and without an arms control agreement. We can do slightly better with an agreement than without one. This is because the agreement would limit the deployment of Soviet offensive, and most importantly, of Soviet defensive missiles below the levels projected in the absence of an agreement.

Fears will inevitably arise that the Soviets can make the United States vulnerable to attack by secretly improving their offensive and defensive forces. However, they could try to surprise us by taking the

same steps in the absence of an agreement. Our analysis considered cases where the Soviets cheat by secretly deploying ICBMs and where they cheat by deploying ABMs in excess of the agreed levels.

U.S. RETALIATORY CAPABILITY IF THE SOVIETS CHEAT a/ (Chart 6)
(Percent of the Soviet People Killed)

	FY 70	FY 72	FY 74	FY 76
Soviets Cheat by Secretly Deploying 500 Mobile ICBMs				
No U.S. Response	44%	44%	44%	43%
Soviets Cheat by Deploying ABMs at a Greater-Than-Expected Rate				
No U.S. Response	44	43	41	38
U.S. Puts 14 MK-3s on Poseidon and Defends Minuteman III	44	43	43	42

a/ Assumes that U.S. penetration aids do not work.

In the first situation, we have assumed that the Soviets would be able to deploy 500 ICBMs undetected and that we would make no response. They could try to do this secretly by building land-mobile systems, deploying more submarines, or converting IRBM/MRBM silos to ICBMs. A special intelligence estimate concludes that we would be able to detect such actions before more than 100 to 200 missiles were so deployed. Even if we did nothing, however, we could kill 43% of the Soviet people in retaliation through FY 76. This is because much of our missile deterrent force is relatively invulnerable to a Soviet first strike.

On the other hand, all of our missiles are subject to attrition by a Soviet ABM system. For this reason, we have examined in considerable detail the effect of Soviet cheating in ABMs on our retaliatory capability. For this case, we assumed that the Soviets would make a conscious decision to cheat beginning in FY 70 and would deploy ABM interceptors at a rate higher than that shown in any intelligence estimate. We made very conservative assumptions about the effectiveness of the Soviet ABM interceptors; that is, assuming our penetration aids did not work, each reliable Soviet interceptor would be able to kill one of our RVs. Thus, we would have to use the tactic of "exhaustion" to overwhelm the Soviet ABM defense. In the expected situation, a Soviet ABM system -- especially one deployed secretly --would be much less effective, and there are less costly techniques than exhaustion to negate it.

The large, secret Soviet ABM deployment included in our assumptions covers such cases as the conversion of the Tallinn (SA-5) -- or any other Surface-to-Air Missile (SAM) system -- to an ABM or the deployment of mobile ABMs. A special intelligence analysis has concluded that a

converted Tallinn system would not be a very effective ABM system since we could defeat it by killing the three or four associated long-range radars and by attacking the Tallinn sites themselves with missiles (against which they have no self-defense capability). Any attempt to improve the system by deploying new radars would be easily detected by our unilateral means.

Nevertheless, even if we make very conservative assumptions about the size and effectiveness of the Soviet ABM system, we will still be able to kill over 35% of the Soviet people in retaliation through FY 76. If we wanted to increase that percentage, we could do so by exercising options. For example, we could increase the number of RVs on Poseidon to 14 and defend the Minuteman III force. This would enable us to kill 42% of the Soviet people in retaliation in FY 76. In addition, we have many other options that we could exercise within the terms of the agreement (for example, increasing the bomber alert rate, placing more penetration aids on bombers and Poseidon, and converting all Minuteman to Minuteman IIIs).

For our next set of calculations, we assumed the role of a Soviet planner in order to see how the Soviets might view their deterrent under an arms control agreement. It is unlikely that the Soviets would make exactly the same calculations that we do. However, if they made the same conservative assumptions that we do in analyzing our own strategic nuclear capability, they could very well conclude that their deterrent is marginal. In order to improve their retaliatory capability, the Soviets might want to ban MIRVs and limit ABMs to low levels. The next chart shows the results of the calculations a Soviet planner might make in evaluating the Soviet retaliatory capability under conservative assumptions.

SOVIET RETALIATORY CAPABILITY a/ (Chart 7)
(Percent of U.S. People Killed)

	FY 74	FY 76
Proposed Agreement	14%	4%
Alternative Agreements		
Limit ABMs to 100 on Both Sides	30	30
Limit ABMs to 100 on Both Sides and Ban MIRVs	40	42
Soviet Actions in Violation of the Proposed Agreement		
Add 14 SSBNs (Parity in SLBMs)	19	4
Add 500 Mobile ICBMs	31	25

a/ The Soviets assume that their missile penetration aids do not work.

The results of our analysis also show that the U.S. and particularly the Soviet second-strike capabilities are affected more by the level of ABM deployments than by changes in offensive missile forces (such as increased throw-weight). This effect would be especially pronounced if an agreement barring MIRVs were negotiated. Thus, limitations on ABM levels should be one of the most important considerations in negotiating an arms control agreement. The last chart shows how the U.S. and Soviet retaliatory capabilities vary with the number of deployed ABM interceptors.

U.S. AND SOVIET RETALIATORY CAPABILITY IN RELATION TO ABM LEVEL (Chart 8)
(Percent of People Killed) a/

U.S. Retaliatory Capability	Number of Soviet ABM Interceptors					
	0	165	700	2,000	4,000	6,000
Both Sides Deploy MIRVs	45%	45%	43%	37%	17%	17%
MIRVs Banned	41	36	25	16	16	16

Soviet Retaliatory Capability	Numbers of U.S. ABM Interceptors					
	0	165	700	2,000	4,000	6,000
Both Sides Deploy MIRVs	36	32	4	4	4	4
MIRVs Banned	46	42	29	4	4	4

a/ Assumes that neither U.S. nor Soviet penetration aids work.

There is an issue which should be carefully considered as we prepare to negotiate the terms of an arms control agreement. With advancing missile technology, we can expect that new and more accurate strategic weapons will be developed which could make our present land-based missile silos easy targets. The agreement as now proposed does not include any provisions for increasing the survivability of our ICBMs by means such as the local defense of missile silos or the transfer of missiles to super-hard silos or to sea. In the long run, the proposed agreement and subsequent revisions to it should permit us to maintain the survivability of our ICBM force.

In summary, we believe that our nuclear deterrent can be maintained as well and probably better under the terms of a well-designed arms control agreement than without one. Also, an agreement (or even the preliminary discussions) would give us valuable insights into how the Soviets view nuclear forces and strategy. Finally, an agreement would increase our confidence in our deterrent by reducing uncertainties in the numbers of offensive and defensive missiles. However, we still must insure against these uncertainties by pursuing hedges to protect our deterrent. Although we believe that such an agreement could be kept without on-site inspection, we should seek agreement with the Soviets on inspection procedures to reduce uncertainties further. Any such agreed inspection would provide information not now available.