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**US STRATEGIC NUCLEAR STRATEGY AND FORCES:  
A ROADMAP FOR THE YEAR 2000**

BY

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USAWC MILITARY STUDIES PROGRAM

US STRATEGIC NUCLEAR STRATEGY AND FORCES:  
A ROADMAP FOR THE YEAR 2000



AN INDIVIDUAL STUDY PROJECT

by

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## ABSTRACT

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Deterrence of nuclear war is a fundamental goal of the United States, for if deterrence fails, the existence of the nation could be in jeopardy. Deterrence has been maintained since the end of World War II because the nuclear powers have not, for whatever reason, felt it in their interest to initiate such hostilities. In the intervening years, an arms race has ensued which has produced increasingly powerful nuclear arsenals at increasingly greater cost. This study recounts that nuclear arms race, both in terms of nuclear strategy and strategic force structure. From this beginning, the study goes on to postulate what nuclear deterrence might look like in the year 2000. Assuming that US strategy and force structure are derived from the perceived Soviet threat, the study presents three different cases based upon three different future Soviet Unions. In the first two cases, an improved US/Soviet relationship is considered. In the third case, a more threatening Soviet Union provides the basis for US nuclear strategy and force structure. The study concludes with some general observations and comments concerning the three cases and where the author believes the US should be headed in the strategic nuclear arena between the years 1990 and 2000.

## INTRODUCTION

The strategic nuclear relationship between the United States and the Soviet Union is arguably the most important relationship on our planet, for if that relationship fails, life as we know it could cease to exist. Since no one has yet figured out a way to "uninvent" nuclear weapons, they are a reality that must be dealt with, and common sense dictates that they be dealt with in a way that lessens the probability that they will ever be used.

The United States has adopted a strategy of deterrence to do just that -- lessen the probability that nuclear weapons will ever be used, while at the same time maintaining US sovereignty and status as a free and independent nation. As President Bush clearly stated in his 1990 edition of National Security Strategy of the United States, "Deterrence of nuclear attack remains the cornerstone of U.S. national security."<sup>1</sup>

This paper is an attempt to postulate the strategic nuclear relationship between the United States and the Soviet Union approximately ten years in the future - to examine what deterrence might look like about the year 2000. While gazing into the future is an inherently risky business, this particular exercise is especially risky because of the unusually dynamic state that exists in Soviet internal politics today. No one knows where the political crisis in the Soviet Union is leading. What seems most clear is that, given the depth of the problems, it will not be settled any time soon.

As a hedge against such uncertainty, and for the purposes of this paper, I am going to postulate three possible outcomes, three different Soviet Unions. From these three different "threats," I will develop three possible U.S. nuclear strategies and force structures which are consonant with our overall national security priorities. The baseline case (CASE A) will assume that the Soviet Union "muddles through" its political difficulties. The Cold War remains behind us, a Strategic Arms Reduction Treaty (START) is put into effect, and the US and USSR continue slow progress toward an improved relationship in the international arena.

From this baseline case, the first excursion (CASE B) will examine the ramifications if the strategic nuclear threat of the USSR is significantly reduced by the year 2000. Among other

possibilities, this could occur either through the successful implementation of what has been described as Gorbachev's political and economic reforms, or on the other hand, by a total failure of the reform movement, civil war, a resultant breakup of the USSR, and a less powerful yet still nuclear-armed Russian Republic.

The second and final excursion (CASE C) postulates a Soviet Union that poses a significantly greater strategic nuclear threat to the US than in the baseline case. This situation could arise out of a failure of the reform movement in the USSR, a crackdown by hard-line communists in the wake of reform's demise, and a return to Cold War rhetoric and competition between the US and USSR. This case will assume that the START treaty is not ratified by the US Senate and strategic nuclear arms competition between the two countries reignites.

While none of these scenarios may in actuality describe the USSR in the year 2000 and the corresponding threat it poses to the US, the three possible outcomes of "status quo," "better," and "worse" should bracket the likely possibilities and in any event, provide a plausible framework for this study. More importantly, they clearly point out the enormous range of potential threats that face US policy makers as they contemplate strategic nuclear issues between the US and the USSR out to the year 2000 and beyond.

Before gazing into the future however, I first want to review our starting point, where we stand today in the strategic nuclear equation and how we got here. This review will be the groundwork for the study and hopefully provide some insight into how the US has handled the threat \strategy \force-structure triangle in the strategic nuclear arena since the development of nuclear weapons in the 1940s.

## SECTION ONE - HISTORICAL BACKGROUND

"Like Adam and Eve, we have eaten of the tree of knowledge and have been cast into a world where we can never be perfectly secure."<sup>2</sup>

The history of nuclear weapons and the strategies to employ them is a dynamic history of move and counter-move in an attempt to achieve an acceptable level of national security. The US dramatically concluded World War II by demonstrating to the world a massively destructive new weapon. After the war, strategists wrestled with questions of the significance of this new tool of war and what its role should be in future warfare. While some saw atomic weapons as simply a more destructive extension of conventional weapons, more thoughtful analysts viewed them as fundamentally altering the very nature of warfare. One of this latter type, Bernard Brodie, wrote in 1946, "Thus far the chief purpose of our military establishment has been to win wars. From now on its chief purpose must be to avert them. It can have almost no other useful purpose."<sup>3</sup>

### 1945-1950: THE AMERICAN NUCLEAR MONOPOLY

During the immediate post-war period, the national security establishment was dealing with the atomic issue in practical terms. Continued testing of atomic weapons further revealed their destructive capacity and military planners developed plans for potential use of the slowly growing US arsenal. At the same time, however, President Truman began to see the atomic bomb as a weapon of terror, "...not a traditional part of the military arsenal."<sup>4</sup> In 1946, he proposed placing all atomic weapons under international control through the "Baruch Plan." Without getting into the details of the plan which are not pertinent to the discussion at hand, suffice it to say that the Soviets rejected the plan which would have left nuclear technology (although not weapons) in the hands of the US and would have, in effect, prevented other countries from acquiring such technology.

With the US monopoly in nuclear weapons, the major threat during the period was a Soviet conventional attack in Western Europe. The Soviet threat to the US mainland was minimal to



nonexistent. The US atomic monopoly was viewed as a deterrent to any Soviet aggression in Europe. Considering the scale of the US demobilization which began in 1945, atomic weapons would probably have been essential in countering a Soviet attack on the continent.

Although no specific strategy ("declaratory strategy") was announced by the Truman administration as to its planned use of atomic weapons, war plans hastily developed during the Berlin Crisis in 1948 called for a "strategic air offensive" which had as its target, the urban-industrial areas of 70 Soviet cities. The means to achieve that strategy resided in approximately 50 atomic bombs held by the Atomic Energy Commission (AEC) and 30 B-29s of Strategic Air Command (SAC) which had been specifically modified for the cumbersome weapons.<sup>5</sup>

It should be noted that this marriage had some significant limitations. The weapons themselves took two days to prepare and were not even in the hands of the Air Force that would carry them. Secondly, the B-29s did not have intercontinental range and would have had to deploy to a staging base in order to strike the Soviet homeland.

Fortunately, the Soviets did not further test American resolve and the world slipped unscathed through the first major crisis of the nuclear age. While this earliest display of US nuclear strategy may be viewed as a success, the Soviet test of an atomic device in the summer of 1949 forced the US to rethink both its nuclear strategy and force structure. The days of US immunity to atomic attack were numbered.

In reviewing this first period of US nuclear capability, the slowly evolving nature of the threat \ strategy \ force-structure triangle is quite evident. In the initial years after WWII, the US built a small arsenal of atomic weapons without clearly defining a new strategy for its use. The only delivery vehicle was the B-29, which lacked the range to promptly attack the most likely threat. Thus, in the early nuclear years, WWII strategic bombing strategy and WWII-era forces formed the heart of the US retaliatory threat. It took the crisis in Berlin and the shock of the first Soviet atomic test to really propel America into "thinking about the unthinkable" in the nuclear age.

## 1950-1961: MASSIVE RETALIATION

The successful Soviet atomic test was the catalyst for profound changes in US nuclear strategy. As it slowly grew, this ominous threat to the US and her new NATO allies became the primary target for a retaliatory strike. While devastation to the Soviet urban industrial base remained a high priority, elimination of the Soviet's atomic arsenal became paramount.

National Security Council Document 68 (NSC-68) laid out the Truman administration's thinking on the subject in April, 1950. While the idea of a preventive war was found unacceptable, a preemptive nuclear attack was not ruled out as an option in order to eliminate or minimize damage from an enemy attack that was about to be unleashed. These thoughts were carried on by the Eisenhower administration. In November 1957, the President commented, "SAC must understand that the enemy must not be allowed to strike the first blow." <sup>6</sup>

The declaratory strategy of "massive retaliation" was announced by Secretary of State Dulles in early 1954. In his statement, he suggested that the US would consider the use of nuclear weapons in response to major or even minor aggressive behavior on the part of the Soviets, clearly an attempt to deter at both the nuclear and conventional levels. <sup>7</sup>

While minimizing expenditures on conventional force structure, the Eisenhower administration proceeded in earnest to match military capability to the strategy of massive retaliation. In quick succession, the B-36, B-47 and finally the all-jet, intercontinental B-52 were deployed. All the services were developing nuclear capable missiles and by 1957, the US had at its disposal approximately 2000 nuclear and atomic warheads, up from about 200 at the beginning of the decade.

While the Soviets lagged behind in deployed nuclear capability, a series of Soviet technological demonstrations in 1957 caused a renewed wave of fear to spread in the US. Two new bombers, the Bison and Bear, both able to strike targets in the US, began to reach operational units. Second, the USSR tested an intercontinental ballistic missile (ICBM) at full range. Finally, the Soviets launched the first earth-orbiting satellites, Sputniks I and II. These events, taken together, awakened the US to its growing vulnerability and caused the US to re-evaluate its entire deterrent

posture. The resulting increased US strategic nuclear capability would pay great dividends during the next major crisis of the nuclear age which would arise in 1962.

In reviewing the era of massive retaliation in terms of the methodology of this paper, a number of points come into focus. First, perceived changes in the Soviet threat drove reevaluations of US strategy and the adequacy of the deterrent force structure. This occurred in 1949 and again in 1957 as Soviet nuclear capabilities developed or were enhanced. Second, while massive retaliation is generally considered to be a "city-busting" (counter-value) strategy, there was a significant or even predominant element of counter-force targeting involved in the actual war plans. Finally, the repeated emphasis on the need for preemptive strikes to limit damage to the US in the event of an imminent Soviet attack is cause for concern, in that such planning could increase the likelihood of nuclear war based upon an intelligence failure or miscalculation.

#### 1962-1969: FLEXIBLE RESPONSE

When President Kennedy was briefed on the nation's first-ever unified nuclear war plan (Single Integrated Operational Plan [SIOP]-62), he was stunned by its scale and inflexibility.<sup>8</sup> Moreover, due to the ever-growing Soviet nuclear threat, the JCS could not guarantee that the US would be spared a Soviet nuclear response, even if the US launched a preemptive strike. In an attempt to provide some flexibility in targeting, provide some means of escalation control and limit damage, if possible, to US cities, Secretary of Defense McNamara directed the Joint Chiefs of Staff (JCS) to revise the war plan.

The resulting plan, SIOP-63, made use of the growing "Triad" of US strategic nuclear delivery vehicles (bombers, land-based ICBMs and sea-launched ballistic missiles) and offered the president some much-needed flexibility in executing the war plan. SIOP-63 divided the target list into three sets: nuclear threat targets, other military targets, and urban-industrial targets. More importantly, it provided the national command authority (NCA) the ability to withhold strikes against urban-industrial targets and specific countries covered under the war plan. If all else failed, the

growing number of relatively invulnerable sea-launched ballistic missiles (SLBMs) provided an "assured destruction" capability against Soviet cities.<sup>9</sup>

As a result of both these strategy refinements and force structure improvements, President Kennedy was in a good position to deal with the Cuban Missile Crisis when it occurred in October of 1962. Although only Khrushchev can say for certain why the Soviets backed down during the affair, a cursory glance at the relative nuclear balance between the protagonists during that period of time is instructive.

ESTIMATED NUCLEAR BALANCE: 1963<sup>10</sup>

	<u>US</u>	<u>USSR</u>
ICBM LAUNCHERS	229	44
SLBM LAUNCHERS	144	97
MR/IRBM LAUNCHERS	105	(20-40 in Cuba)
STRATEGIC BOMBERS	1300	155

Although the US achieved its objectives as an outcome of the affair, an unintended result was the resolve on the part of the Soviets to achieve parity with the US in the strategic nuclear arena. Soviet leaders were determined to avoid in the future the humiliation they had undergone during the crisis. When parity was finally achieved about 1970, the US was forced to accept and adjust to the new reality.

While the Soviets spent the remainder of the 1960s in a feverish building program, the US strategic nuclear forces continued to mature. By 1967, the US had built all of its B-52s and had leveled off at 1054 ICBMs and 656 SLBMs deployed on 41 nuclear submarines. In the mid-1960s, Secretary McNamara, attempting to lower the cost of the arms race, began to talk in terms of "assured destruction," defining that as the ability under any circumstance to destroy 20-30% of the population and 50-66% of the industrial capability of the USSR.<sup>11</sup> Within the SIOP, however, counter-force targeting remained paramount, with counter-value (population and industry) strikes withheld in an attempt to negotiate protection for US cities. With parity being reached between the two sides in 1970, "mutual assured destruction" or "MAD" became the operative description of the nuclear balance and the US once again had to reevaluate its strategy.

## ESTIMATED NUCLEAR BALANCE: 1970<sup>12</sup>

	<u>US</u>	<u>USSR</u>
ICBM LAUNCHERS	1054	1300
SLBM LAUNCHERS	656	240
STRATEGIC BOMBERS	520	140
WARHEADS/BOMBS	4000	1800
TOTAL MEGATONNAGE	4300	3100

When Richard Nixon assumed the presidency, he ordered, as all new presidents seem to do, a review of US nuclear strategy and war plans. The new administration wanted to rectify three problems that it felt existed within the posture it inherited: the credibility of extended deterrence to Europe, the still massive nature of all US nuclear response options, and the US's "assured destruction" capability in the face of the Soviet's rapidly growing arsenal.<sup>13</sup> Moreover, while the US seemed to accept the reality of mutual assured destruction, the Soviets seemed not to be content with it. By their continued investment in counterforce capability, air and civil defense and a ballistic missile defense, the Soviets appeared to be moving beyond MAD to a warfighting or war-winning strategy.<sup>14</sup>

The result of this comprehensive review was National Security Decision Memorandum (NSDM) - 242 which became known as the "Schlesinger Doctrine." This strategy had at its heart three major elements: escalation control, a "secure reserve force," and a targeting philosophy that emphasized impeding Soviet recovery if deterrence failed.<sup>15</sup>

To achieve escalation control, limited nuclear options were integrated into the war plans which would allow the NCA to execute small portions of US nuclear capability in pre-planned packages. These primarily counter-force strikes would offer the president more control in the execution of the SIOP. They were also felt to be a more credible linkage of US strategic nuclear capability to the defense of Europe.<sup>16</sup>

The secure reserve force was developed to withhold specific weapons on specific SIOP sorties, creating a residual assured destruction capability if deterrence failed and portions of the SIOP had been executed. This capability was designed to influence the bargaining process after the initial

strikes of a war.<sup>17</sup> Tied to this force was a shift to a counter-value targeting philosophy. If escalation could not be controlled and these forces were also executed, their mission was to impede Soviet recovery capability. Specifically, planners were directed to destroy 70% of the industry the Soviets would need to achieve economic recovery after a war.<sup>18</sup>

Along with these changes in strategy came enhancements to US nuclear capabilities. Although the quantity of US strategic nuclear delivery vehicles (SNDVs) actually decreased during the 1970s, improved technological capability allowed the US to deploy more weapons on fewer launchers through the employment of MIRVs (multiple independently targetable reentry vehicles). Through the employment of such technology, selected US ICBMs were fitted with three warheads and the new Poseidon SLBM, which replaced the Polaris, was deployed with as many as 10 warheads. As a consequence of these force enhancements, US strategic warheads grew from a level of 4000 in 1970 to approximately 8500 by 1977.<sup>19</sup>

While the US improved its offensive strategic force deployment as described above, the Nixon administration sought, through agreements with the Soviets, to limit strategic weapons deployments on both sides. This other track, arms control, became particularly important - especially in the area of strategic defenses. In May 1972, this effort culminated in the signing of two arms control agreements with the USSR. The SALT I Interim Agreement froze for five years, further deployment of ICBM and SLBM launchers while the ABM (anti-ballistic missile) Treaty limited the deployment of such strategic defensive systems to two sites for each country. These treaties represented a continuation of the effort begun after the Cuban Missile Crisis and which first reached fruition with the Limited Test-Ban Treaty of 1963.

In part, because of the political difficulties encountered by the Nixon Administration and the brief duration of the Ford Administration, the elements of NSDM-242 were never completely instituted. However, the threat / strategy / force-structure triangle can be seen clearly. As the Soviet threat continued to grow, the Nixon administration sought to counter it with the two-tracked approach of force enhancements and arms control. The SIOP grew more complex and began to reflect a counter-value strategy, even more so than the policy-makers intended.<sup>20</sup> Perhaps the major

shortcoming of the entire US strategic nuclear posture left to the Democrats in 1977 was a command and control apparatus which lacked the resiliency needed to direct US forces in a protracted nuclear conflict. This became a primary focus of the Carter Administration as it began to review the program it had inherited.<sup>21</sup>

### TOWARD A COUNTERVAILING STRATEGY

When the Carter Administration began its in-depth review of US strategic nuclear policy in the summer of 1977, it focused on targeting policy, the secure reserve force, and US counter-force capabilities. Among others, this study arrived at the disturbing conclusion that Soviet leaders considered victory in a nuclear war possible.<sup>22</sup> Continuing Soviet strategic force improvements, enhanced civil and air defenses and an expanding capability to protect, through a series of deep, hardened bunkers, a significant portion of the Soviet leadership, led senior US officials to question the adequacy of the US deterrent.

In June 1980, a new strategy based on President Carter's three and one-half year long Nuclear Targeting Policy Review (NTPR) was announced by Secretary of Defense Harold Brown. Issued as Presidential Directive (PD) 59, it announced a new "countervailing strategy" which remains at the heart of US nuclear strategy today.<sup>23</sup> The essence of the intent of the strategy was to deny Soviet leaders their specific aims in the event of nuclear war. By doing so, it was hoped that deterrence would be strengthened.

The NTPR study determined that what motivated Soviet leaders most was the survival of their personal power and the structure surrounding it. The countervailing strategy called for targeting changes within the SIOP which directly threatened this power base. Three categories of targets would now be emphasized: counterleadership, countermilitary, and industrial targets.

Although all these categories of targets had appeared in earlier revisions of the SIOP, their emphasis was shifted after PD-59. The counterleadership targets included the growing list of hardened bunkers from which the Soviet leadership hoped to command and ride out a nuclear war.

The countermilitary targeting emphasized the growing Soviet arsenal and the strategy called for a warfighting capability which was hoped would further deny Soviet war aims and add to deterrence. Finally, counter-industrial targeting within the SIOP was shifted from impeding a Soviet recovery effort following a nuclear war to direct attacks on the economic base the Soviets would need to wage a protracted nuclear war.<sup>24</sup>

With the threat defined and an appropriate strategy laid out, it fell on the Reagan Administration, which reviewed and accepted the principles of PD-59, to fund the force acquisitions and enhancements which were required to make the strategy work. This was accomplished with the acquisition of the B-1B strategic bomber, the MX (PEACEKEEPER) ICBM, the TRIDENT D-5 SLBM, and improvements in command, control, communications and intelligence (C3I) systems. Although the Reagan Buildup went far beyond that envisioned by the framers of PD-59, the strategy laid out in PD-59 has not changed significantly in over ten years.

Strategic offensive force improvement was not the only means employed by the Reagan Administration to enhance the US strategic nuclear deterrent. On March 23, 1983, the President announced a new and revolutionary effort, now well known as the Strategic Defense Initiative (SDI), which held the promise of protecting the US against an ICBM attack. This program, together with US offensive strategic nuclear force enhancements, helped bring the Soviets to the bargaining table. These discussions are on the verge of producing significant negotiated reductions in nuclear arms.

As this paper is being written, the final details are being worked out for a Strategic Arms Reduction Treaty (START) between the US and the USSR. If carried through to fruition, this agreement would be the first large-scale, negotiated reduction in the history of the nuclear arms race between the US and the Soviet Union. Unfortunately, internal political turmoil within the USSR and possible Soviet cheating in implementing the Conventional Forces in Europe (CFE) agreement are currently jeopardizing the START agreement. With confidence that a START agreement will ultimately be concluded, the current nuclear balance and START provide the jumping-off point for the next part of this paper.



## SECTION TWO - CASE STUDIES

### ESTIMATED STRATEGIC NUCLEAR BALANCE: 1990<sup>25</sup>

	<u>US</u>	<u>USSR</u>
ICBM LAUNCHERS	1000	1398
SLBM LAUNCHERS	624	924
STRATEGIC BOMBERS	306	185
TOTAL WARHEADS	13398	11641

The table above presents an extremely simplified picture of the strategic nuclear balance between the US and the USSR today. Based on the numbers alone, a state of "rough equivalence" could be said to exist. Having said that, however, a more detailed analysis is needed to accurately assess the threat presented by the USSR. Regardless of stated Soviet intentions and rhetoric, the *only safe foundation upon which to rest the security of the United States is to base our defense upon an ability to counter Soviet capability, not perceived intentions.* As Secretary Cheney stated in his preface to the 1990 edition of Soviet Military Power.

The Soviet threat is changing but it is not going away. ...Soviet military power still presents a threatening face. This is nowhere more obvious than in strategic nuclear forces.... The intentions of that regime are changing. But intentions are not enough to support dramatic changes in our own level of preparedness. ...spending remains at a level that will permit considerable Soviet force modernization. ...the facts lead only to the conclusion that the Soviet Union remains an enormous military superpower.<sup>26</sup>

Given that deterrence of nuclear attack upon the United States is a fundamental, perhaps *the* fundamental US national security goal, what is it about Soviet nuclear capability that is most threatening? First and most obvious is its sheer mass. A laydown of only a portion of the Soviet Union's 11000+ warheads on the United States would wreak unimaginable death and destruction, notwithstanding the environmental consequences postulated by "nuclear winter" theorists.

Second, the Soviets have deployed a large number (308) of "heavy" ICBMs. With 10 warheads each, this force alone represents a capability which, by itself, theoretically could destroy the entire US ICBM fleet through a preemptive strike. With all 1000 US ICBMs in vulnerable, fixed silos, they represent a lucrative first-strike target. Possessing 308 SS-18s and their associated 3080 warheads, the Soviets could theoretically target three SS-18 warheads against each US ICBM silo in such an attack. In this scenario, a US President would be forced to launch the ICBM fleet on warning, (assuming the President had the supreme confidence in US warning systems to do so), launch under attack (with unknown consequences to the outgoing missiles), or ride out the attack and rely primarily on the US SLBM and bomber fleet to provide any retaliation.

Third, the Soviets are deploying their newest ICBMs in either a rail or road mobile configuration. These SS-24 and SS-25 missiles would be in a good position to avoid a US retaliatory strike in the scenario postulated above, and leave the Soviets in a strong position after the initial exchange to threaten the US population and influence the political outcome of the war. The Soviet mobile ICBMs present a difficult challenge for US retaliatory assets. We have only to point to the difficulty the allied forces had in finding and destroying all of Iraq's mobile Scud missiles during the recent Gulf war to appreciate the monumental task that would be required to locate, target and destroy Soviet mobile ICBMs during a nuclear conflict. Finally, the capabilities discussed above coupled with a modernized and more secure SSBN fleet and a growing number of strategic bombers deployed with cruise missiles, round out a very impressive and resilient strategic offensive capability.

On the other hand, the Soviets have not neglected their strategic defensive capability and have developed what is clearly the world's most sophisticated air and space defense system. In addition, they have extensive civil defense plans for the protection of their population and have built a series of deep underground, hardened bunkers for the security of as many as 175,000 Soviet leaders and key government personnel.<sup>27</sup>

Compared to the Soviets, the US has essentially no defensive capability, relying on the threat of an assured and an unacceptable level of retaliation to deter the Soviets from initiating a nuclear strike. The US long ago abandoned plans for civil defense and maintains only a minimum number of

hardened shelters for key leaders and its command and control systems. Our strategic air defense system was essentially abandoned in the face of a small Soviet bomber threat and the cost of maintaining the one anti-ballistic missile (ABM) system that was permitted under the 1972 ABM Treaty. It was in the light of the realization of our extreme vulnerability to a Soviet first strike that the SDI program was conceived. Although there were many factors involved, it was probably SDI and the US technology that it represents coupled with economic distress in the USSR that led to the START talks.

It was at the 1986 and 1987 summit meetings in Reykjavik and Washington between President Reagan and General Secretary Gorbachev that the basic outline of a START treaty emerged. As originally envisioned, the reductions that were to be agreed to would reduce the offensive deployments of strategic nuclear warheads by approximately 50%. Under the provisions of the treaty, each side would be allowed to deploy 6000 warheads on 1600 strategic nuclear delivery vehicles. Of the 6000 warheads, no more than 4900 could be deployed on ballistic missiles. In addition, a separate ceiling of 1540 warheads on 154 heavy ICBMs was agreed to, as well as a 50% reduction in Soviet ballistic missile throw-weight.<sup>28</sup>

Since the framework of the agreement was established, major issues which remained have been resolved. These issues involved mobile land based missiles, counting rules for air launched cruise missiles (ALCM), restrictions on sea launched cruise missiles (SLCM), and linkage between strategic offensive reductions and limitations on strategic defenses. It has been agreed that under START there will be a limitation of 1100 warheads on mobile missiles, no linkage between START and the deployment of strategic defenses and that SLCMs will be limited separately, outside of the START agreement, to 880 on each side. On the issue of counting rules for ALCM carrying bombers, each US bomber capable of carrying ALCMs is counted as one SNDV and 10 warheads within the 6000 limit. Similar Soviet aircraft are counted as one SNDV and eight warheads.<sup>29</sup> With resolution of these major issues, a START treaty appeared to be almost ready for signing in early 1991.

Although the START agreement, as now constructed, has the potential to reduce the overall level of strategic nuclear arms, it falls far short of its promise of 50% reductions. A discount in the counting rules for non-ALCM carrying bombers permits such a bomber to count as one warhead regardless of the number of warheads it is actually capable of carrying. In one sense this is good, because bombers are not seen to be as destabilizing a weapon as a missile, especially a land-based, fixed-silo, MIRVed ICBM. If a START agreement pushes the US and USSR toward penetrating (non-ALCM carrying) bombers and away from fixed-silo, MIRVed ICBMs, most observers agree that it would be an improvement in the crisis stability index. However, because of this and other loopholes, instead of a warhead count after START of 6000, as many as 8000-11000 warheads could legally be deployed, - not much of an improvement over pre-START levels.

This brings us to the heart of this paper. Where do we go from here? There are so many questions and so many unknowns. When this paper was conceived in the fall of 1990 it still appeared that the Soviet Union was on its way to reform, that a START treaty would surely be ratified, and that the US and USSR were replacing confrontation with cooperation in approaching world problems. But the euphoria is gone. Political turmoil within the Soviet Union has resulted in a return to hard-line rhetoric within the Kremlin. The Soviet military, the communist party and the KGB have regained influence in creating and directing government policy. The Soviets are even waffling on the implementation of the CFE agreement they signed just last fall.

All that being said, and although I'm not as optimistic as I was just a few months ago about the future relationship between the US and the USSR, the basic format of this paper should still be adequate for its purpose. In fact, recent events only demonstrate more clearly the requirement for those who are dealing at the strategic level to consider a broad range of possibilities in dealing with the future. Clearly, alternative futures which vary greatly from one another are possible. With these thoughts in mind, I will now shift gears from the present and begin to look at those alternate futures and consider the future strategic nuclear relationship between the world's two nuclear superpowers.

## CASE A: THE SOVIETS "MUDDLE THROUGH"

The first scenario I will consider - the baseline case, assumes that the Soviet Union "muddles through" its political difficulties. The Cold War remains behind us, the START Treaty is ratified and put into effect, and the US and USSR continue slow progress towards a more cooperative relationship. In this scenario as in each of the others I will consider, the first question to be dealt with is what is the nature of the strategic nuclear threat posed by the Soviet Union.

In answer to that question, Secretary Cheney has provided the official, unclassified answer in the 1990 edition of Soviet Military Power.

By the end of this decade, particularly after a START Treaty is implemented, the composition of Soviet strategic forces will change significantly. The proportion of mobile ICBM launchers likely will increase to about two-thirds the total ICBM force, giving the Soviets a more survivable force. Heavy ICBMs will continue to carry about half the warheads.... This force structure, together with ongoing improvements to the SS-18, will enable the Soviets to retain a credible hard-target-kill capability against US Minuteman and Peacekeeper silos. ... by the end of the decade they will be left with the SS-18, SS-24 Mods 1 and 2, the SS-25, and their follow-ons. The size of the SSBN force will decline by nearly one-third, and the number of SLBM warheads will decrease slightly. The operational bomber force will not grow substantially, but will be modernized as more air-launched cruise-missile (ALCM)-carrying bombers enter the force.<sup>30</sup>

Applying Secretary Cheney's predictions to START treaty limitations, the year 2000 Soviet strategic offensive force would look something like the following:

CASE A

SOVIET STRATEGIC FORCES (START CONSTRAINED) - YEAR 2000

<u>DEL. VEH.</u>	<u>NO. DEPLOYED</u>	<u>WHDS./VEH.</u>	<u>TOTAL WHDS</u>
<u>ICBM</u>			
SS-18	154	10	1540
SS-24	60	10	600
SS-25	500	1	500
<u>SLBM</u>			
SS-N-20 (ON 6 TYPHOONS)	120	10	1200
SS-N-23 (ON 11 DELTA IVs)	176	4	704
<u>STRATEGIC BOMBERS</u>			
BEAR H (ALCM)	100	8	800
BLACKJACK (ALCM)	75	8	600
BEAR (NON-ALCM)	56	1	56

**NOTE 1:** The above configuration deploys 6000 warheads (the START maximum) on 1241 SNDVs (well under the 1600 START MAXIMUM) and complies with the requirement to deploy no more than 154 heavy ICBMs and no more than 1100 warheads on mobile ICBMs. The actual Soviet warhead deployment would increase substantially, to over 8500, by counting the total number of warheads capable of being carried on the non-ALCM bombers and the warheads allowed but not held under the limit that would be deployed on three SSBNs assumed to be in overhaul. In addition, a maximum of 880 SLCMs can also be deployed under a separate agreement established outside of START.

**NOTE 2:** Figures derived from The Military Balance 1990-1991, International Institute for Strategic Studies, London, 1990.

What is most threatening about this hypothetical Soviet force that could face the US in the year 2000? First, it is still a massive force. Even after START it is obvious that the nuclear arsenals of both sides will remain incredibly destructive. No pun intended, it is clear that START is just that - only a *start* at reducing the strategic forces of the nuclear superpowers. Beyond sheer mass, this Soviet force presents other dangers and complexities for US planners.

The ICBM fleet is much more capable than the one currently deployed. The Soviets still retain half of their most threatening, heavy ICBMs. With a circular error probable (CEP) of 250

meters and ten 750 kiloton (KT) warheads, the SS-18 fleet remains a potent first-strike weapon. Perhaps even more dangerous, the SS-18s are deployed in fixed silos and would be in a position to be either used or lost to a first strike, thus decreasing stability in a crisis.

The major change in the Soviet ICBM fleet of the year 2000 is the increased deployment of mobile ICBMs. Having currently deployed both the SS-24 rail-mobile and the SS-25 road-mobile ICBMs, it is expected that the Soviets would continue to deploy these systems or improved variants up to the limits permitted under the START accord. The SS-24 carries ten 100 KT warheads and has a CEP of 200 meters. The SS-25 carries a single reentry vehicle (RV) with a 750KT warhead and a CEP like the SS-25 of 200 meters. These systems are therefore much more capable than the missiles that the Soviets would have to scrap under START. Even more important, they are both mobile and thus present an extremely difficult challenge for the US to destroy in a retaliatory strike.

Turning our attention to Soviet SLBMs, START will have a significant effect. In order to remain within the 4900 limit for ballistic missile warheads, the Soviets will be forced to drastically reduce their fleet of SSBNs. From the 63 deployed in 1989, a START-compliant fleet will probably number in the low 20s. However, those deployed in the year 2000 will be, as in the case of the ICBMs, much more capable than the older boats lost under START. While the SS-N-20 and the SS-N-23 missiles do not have the accuracy or hard target kill potential of their US counterparts, they remain fully capable of holding US soft military targets, cities and industry at risk.

As did the SLBM force, the post-START Soviet bomber fleet will look different. Unfortunately, it will provide new and increasingly demanding challenges for US air defenders. In the post-START environment, the Soviets are expected to further develop their ALCM-carrying bomber fleet and may be encouraged, because of the heavy discounting of penetrating bomber weapons in START counting rules, to deploy a new penetrating bomber to take advantage of both START rules and limited US air defenses. Both of these developments would force the US to respond by diverting dollars to air defense, a tactic the US has employed against the Soviets for years.

Given that the Soviet threat is something close to that described above, our next step is to review strategy options that match the threat and would be effective in countering it. Since military strategy is derived directly from and must be in consonance with national interests and policy, I want to review the appropriate current guidance and then make the assumption that it will not have changed significantly over the next decade.

In presenting US interests and objectives for the 1990s, President Bush gave the broad guidance to begin the planning process. While reiterating the obvious that "...the survival of the United States as a free and independent nation, with its fundamental values intact and its institutions and people secure," is our number one, enduring national goal, the President goes on to say that the US seeks to "deter any aggression that could threaten its security and, should deterrence fail, repel or defeat military attack and end the conflict on terms favorable to the United States...." In amplifying the theme, he further states that the US seeks to "improve strategic stability by pursuing equitable and verifiable arms control agreements, modernizing our strategic deterrent, (and) developing our strategic defense while fostering restraint in Soviet military spending...." <sup>31</sup>

With these broad guidelines in mind, Secretary of Defense Cheney presented the fundamental objectives of US strategic nuclear policy in Soviet Military Power 1990. These were to:

*Maintain effective deterrence.* An effective strategic deterrent ensures that there are no circumstances that could arise that would lead the Soviet leadership to conclude that it could successfully launch an attack against the United States or its allies.

*Foster strategic stability.* Strategic stability is a condition whereby neither the United States nor the Soviet Union is pressured to use nuclear weapons preemptively.

*Maintain the capability, if deterrence fails, to respond flexibly to a Soviet first strike.* US leaders and military planners believe that a range of choices - with respect to both the timing and scale of a nuclear exchange with the Soviet Union - allows US decision-makers to respond credibly to various Soviet attack scenarios, and thereby attempt to reestablish deterrence at the lowest level of violence. <sup>32</sup>

Given the above policy guidance and objectives, and the scenario presented as Case A, what should US nuclear strategy be? The next section of this paper will attempt to present an answer.



Dr. Donald Snow, in his book National Security, presents three different approaches to strategic nuclear policy.<sup>33</sup> The first is a radical approach which views nuclear weapons as so lethal and dangerous that they should be abandoned along with the strategy of deterrence. In my view, this approach fails to face the reality that nuclear weapons cannot be "wished away" just because they are lethal and dangerous and thus I dismiss it as impractical and utopian. This approach also fails to conform to the guidelines set forth by President Bush and Secretary Cheney.

Dr. Snow's second approach is founded specifically upon the premise, lacking in the first, that nuclear weapons cannot be wished away. It sees deterrence in some form as the only way to avoid nuclear war. Advocates of this view fall within a broad range, from those who propose a warfighting posture to those who are content with deterrence based on assured destruction (a minimum deterrent which would target cities and the Soviet population). As a military professional who has dealt with deterrence all of his professional life, my intellect is satisfied with some form of this second approach. However, my professionalism is tempered by my humanism which tells me that this approach does not go far enough.

Fortunately, Dr. Snow offers a third approach to the question of nuclear deterrence. The primary premise of this approach is that both the US and USSR must view avoidance of nuclear war as their number one foreign policy priority. With both nations accepting the fundamental notion that neither stands to gain from a nuclear exchange, and that initiating a preemptive attack is no longer (as if it ever was) a rational policy option, other issues such as the prevention of accidental nuclear war and management of crises can be dealt with more thoroughly.

While this approach recognizes that nuclear weapons are here of stay and maintains the nuclear balance of terror, it fosters much lower levels of weapons. In that sense it is both practical and realistic. Most importantly, it encourages the nuclear superpowers to cooperate through agreements, inspections and similar exchanges, and can only help promote a safer and more productive relationship.

In my heart, I feel this is the right approach in managing the most destructive force on the face of the earth. The question becomes one of the right force level, one which will allow both

countries to feel secure, and a targeting strategy which would be appropriate to the forces available. These must take into account both nuclear proliferation, and the possibility that the deterrent arrangement could fail. Whatever that force level is, it should be one of the primary goals of the nuclear arms control process.

Having said all this, having laid my proverbial nuclear philosophy cards out on the table, I will turn back to the task at hand. But before I do, I must make one further observation which will affect the arguments and suggestions that will follow. Proceeding with Dr. Snow's third approach requires a level of understanding and trust between the US and the USSR which does not yet exist. Getting to that point is an evolutionary process which will require some history of successful agreements and time for the development of an acceptable level of mutual trust. The successful implementation and execution of the CFE and START agreements will provide a great foundation for such trust to be built. But we are not there yet, and the proposals I intend to make in the rest of this paper will reflect that fact.

Returning now to Secretary Cheney's fundamental objectives of US nuclear policy, it is clear that his guidance calls for the countervailing or flexible response strategy that has been characteristic of US nuclear declaratory strategy since PD-59. These objectives call for a force which is not deployed in a use or lose mode, one which can endure a Soviet first-strike and still retaliate with unacceptable levels of destruction upon the Soviet Union, and one which offers the president various response options from small strikes against hard targets to large attacks against Soviet cities and industry.

Given the nature of the postulated Soviet threat in Case A, a START- constrained, US offensive strategic nuclear force appropriate to the threat in the year 2000 might look something like the following:

CASE A

US STRATEGIC FORCES (START-CONSTRAINED) - YEAR 2000

<u>DEL. VEH.</u>	<u>NO. DEPLOYED</u>	<u>WHDS./VEH.</u>	<u>TOTAL WHDS.</u>
<u>ICBM</u>			
MM III	150	3	450
MM IV	350	1	350
PEACEKEEPER (MX)	50	10	500
MIDGETMAN (SICBM)	300	1	300
<u>SLBM</u>			
D-5 (ON 17 TRIDENTS)	408	8	3264
<u>STRATEGIC BOMBERS</u>			
B-52H (ACM)	90	10	900
B-1B (NON-ALCM)	90	1	90

**NOTE 1:** The above configuration deploys 5854 warheads (under the START maximum of 6000) on 1510 SNDVs (START maximum is 1600) and complies with the requirement to deploy no more than 4900 warheads on ballistic missiles (actual 4864) and no more than 1100 on mobile ICBMs (actual 300). The actual warhead count would increase by 2790 for discounted bomber weapons and by 1224 for three Trident submarines assumed in overhaul status and not counted. In addition, a maximum of 880 SLCMs can also be deployed under a separate agreement established outside of START. Therefore, actual US weapons deployed would be 10748, down approximately 3000 from the 1990 levels.

**NOTE 2:** This force structure assumes a deployment of 300 small ICBMs and a conversion of 350 Minuteman IIIs to a single-warhead Minuteman IV configuration. In addition, it assumes deployment of the stealthy Advanced Cruise Missile (ACM) on the B-52H while retaining the B-1B in a penetration role.

**NOTE 3:** Figures derived from The Military Balance 1990-1991, International Institute for Strategic Studies, London, 1990.

The next question that must be addressed is whether this force is capable of executing the strategy laid out by the Secretary of Defense. I think it is. First, it is a very robust force. With almost 11000 warheads available to strategic planners, most of the target base covered today could be covered by this force, especially considering the increased accuracy afforded by the new weapon systems deployed.

Second, this force retains all three legs of the Triad, although at a significantly reduced level of strategic bombers. However, when one looks at the number of warheads carried by each leg, over 35% of deliverable warheads would be allocated to the bomber force. The important point is that the redundant, synergistic effect of the three delivery methods, which not only complicates enemy defensive planning but improves US force survivability, is maintained.

Third, the Case A force moves in the direction of increasing strategic stability. It reduces the number of US MIRVed ICBMs by replacing 350 Minuteman IIIs with 350 single-RV Minuteman IVs. Further, it begins the process of adding mobility to the ICBM fleet, the only sure way of increasing both ICBM survivability and crisis stability.

Fourth, this force continues strategic offensive systems modernization at an affordable cost. Although the B-2 has been cancelled, it is retained as a technology test-bed. Stealth technology, however, has been deployed on the advanced cruise missile (ACM), carried into battle by the still effective force of B-52Hs. Cruise missile technology has certainly been proven in the war over Kuwait, and adding stealth to the equation along with nuclear warheads should make for an unbeatable combination. Moreover, a fleet of pure Trident submarines, each carrying 24 D-5 missiles with 8 MIRVed warheads with a CEP of 120 meters and a yield ranging from 300-475 KT, represents an incredible capability, both in terms of survivability and hard-target kill potential.

In summary, this hypothetical Case A force should meet the requirements needed of it in the year 2000, given the threat and the constraints. Looking at the retaliatory threat this force represents, no sane Soviet leader should conclude that it could be defeated. Conversely, in the event of war, a US president would have the capability to respond, in a measured way, to any level of Soviet aggression.

That being said, however, all is not roses: problems remain and there is room for criticism. For starters, START does not go far enough in reducing crisis stability. The 154 Soviet SS-18s and the 200 US Peacekeepers and Minuteman IIIs represent danger both in terms of lucrative targets for a first-strike and as potential first-strike (use or lose) weapons. These fixed-silo, MIRVed ICBMs remain the most prominent targets for further arms reductions.

Criticism could be directed at a number of areas of the Case A proposed forces. For example, some critics are calling for a freeze on all new weapon systems pending negotiation of a new START Treaty.<sup>34</sup> I would disagree for a number of reasons. First, it takes years to negotiate such treaties. Since we are so close to signing one now, it would be a waste of years of effort to begin anew. Second, further arms reductions should be significant and based on a growing mutual trust between the US and the Soviet Union. We need time and the trust-building activities involved in executing CFE and START to create that increased level of trust. Finally, as a hedge against a renewed arms race and in recognition of the enduring reality of nuclear weapons, continued but thoughtful force modernization is necessary and prudent for continued deterrence and US national security.

Other critics have focused on the growing vulnerability of the air-breathing leg of the triad. Michael E. Brown, in a particularly thorough and well constructed article, points to the growing Soviet SLBM threat, even in a START-constrained environment, as a serious challenge to the pre-launch survivability (PLS) of SAC's bombers.<sup>35</sup> For this reason among others, most noteworthy - cost, he recommends canceling the B-2 and converting the B-1B to a cruise missile carrier. On the other hand, I have elected to retain the B-1B in a penetrating role while converting the entire B-52H fleet to the stand-off (cruise missile carrier) role. While this does not solve a potential PLS problem for SAC, it does retain a more robust leg of bombers in the triad and takes advantage of the discounting rules for penetrators. Under most circumstances, excluding the most severe "bolt out of the blue" scenario, I believe SAC can handle the PLS problem for its bombers.

Finally, a number of critics would say that the level of weapons retained in the Case A force is much higher than required for deterrence. To some extent, I would agree. However, deterrence is in the mind of the beholder, and in the interim, I would rather err on the side of too many than to find out the hard way I've erred on the side of too few. As mutual trust grows between the US and the Soviet Union, force levels can be negotiated down to the point where they are adequate for their deterrent task, affordable, and offer each nuclear superpower an increased sense of security, (as much as one can have in the nuclear age). This is in essence the situation that I postulate for Case B.

## CASE B : THE THREAT RECEDES

The second case I will consider assumes that START and CFE have been successfully implemented and continued reduction of US - Soviet tensions has occurred. At this point, it is difficult to say what path the Soviets will take, but it is entirely possible, either through a break-up of the Soviet empire or through further democratization and reform, that the Russians will pose a significantly reduced strategic nuclear threat in the year 2000.

It is clear that START has not lived up to the goal established for it of 50 % reductions in strategic nuclear warheads. Because of the large number of unaccountable warheads permitted by the treaty, the actual reductions after START will be in the 30% range. If we assume that the START process continues after successful implementation of "START I," it is not unlikely that negotiations would quickly begin towards a "START II" which would achieve at least the 50% level of reductions sought after in START I, along with other reductions in certain categories of weapons that are particularly threatening and destabilizing.

I would propose a START II which would encompass limitations on all nuclear warheads, leaving none unaccountable. Second, such an agreement should ban the entire class of heavy ICBMs and strictly limit both the number of and warheads deployed on fixed-silo, MIRVed ICBMs. The agreement could permit the deployment of 6500 warheads on as many as 3000 SNDVs. Such limits should afford a comfort level on both sides, provide effective deterrence for all contingencies, including the growing third-world nuclear threat, and reduce those high-value, vulnerable forces which increase incentives to strike first in a crisis.

With such an agreement implemented in the second half of the 1990s, the year 2000 Soviet threat could look something like the following:

CASE B

SOVIET STRATEGIC FORCES (START II - CONSTRAINED) - YEAR 2000

<u>DEL. VEH.</u>	<u>NO. DEPLOYED</u>	<u>WHDS./VEH.</u>	<u>TOTAL WHDS.</u>
<u>ICBM</u>			
SS-24	200	3	600
SS-25	800	1	800
<u>SLBM</u>			
SS-N-20 (ON 6 TYPHOONS)	120	10	1200
SS-N-23 (ON 11 DELTA IVs)	176	4	704
<u>SLCM</u>			
SS-N-21	500	1	500
SS-N-24	500	1	500
<u>STRATEGIC BOMBERS</u>			
BEAR H (ALCM)	100	8	800
BLACKJACK (ALCM)	75	8	600
BLACKJACK (NON-ALCM)	75	10	750

NOTE 1: The above configuration deploys 6454 warheads (under the START II maximum of 6500) on 2546 SNDVs (START II maximum - 3000) and eliminates the entire class of heavy ICBMs (the Soviet SS-18).

NOTE 2: This force structure assumes the Soviets would continue to rely on a strong ICBM fleet, but that START II permits a maximum of three warheads on any ICBM. Therefore, the SS-24 fleet is downgraded from 10 warheads in Case A to three warheads. Up to 10 MIRVed warheads are permitted on SLBMs because they are not viewed as destabilizing as land-based, MIRVed ICBMs.

NOTE 3: SLCMs are now limited at 1000 and fall within the 6500 START II limitation.

NOTE 4: Non-ALCM bomber warheads are fixed by aircraft type and limited under the total warhead count. (Uncounted bomber warheads are limited/eliminated under START II).

NOTE 5: Figures derived from The Military Balance 1990-1991, International Institute for Strategic Studies, London, 1990.

The threat posed by this hypothetical Soviet strategic offensive force varies significantly from that of Case A. First and foremost, the total warhead count is much smaller. Yet, from a military planner's perspective, it is more modern and much more secure from a potential US first strike.

Looking first at the ICBMs, a major change is the elimination of all SS-18s, the Soviet heavy ICBM that carried 10 warheads and was such a significant threat to the silo-based US ICBM fleet. In its place the Soviets have deployed more of their mobile ICBMs, the SS-24 and SS-25. Of note is

the START II warhead limitation placed on MIRVed ICBMs. While in Case A, only 60 SS-24s with 10 warheads each carried 600 warheads, the Soviets have had to deploy 200 SS-24s to achieve the same warhead level. While this may involve significant cost, MIRV downloading should increase crisis stability by providing less incentive for first use in a preemptive attack and less of an inviting target for a would-be attacker. With this ICBM force, the Soviets still maintain a significant ICBM punch, but one which is more survivable.

On the surface, the Soviet SLBM posture for Case B is identical to that of Case A. It maintains the SSBN level at 17, but by eliminating the three boats that were considered in "overhaul status," almost 500 uncounted warheads are removed from possible use. Getting down below this level will be difficult. Given maintenance requirements and alert rates, I doubt that either side would feel secure with their SSBN fleets much smaller.

While the SLBM force remains relatively static in Case B, a major improvement under START II is the inclusion of SLCMs within the provisions and limitations of the treaty. With a limitation of 1000 placed on these highly accurate missiles, their inclusion under the treaty places firm controls on SLCM deployments by both sides while keeping total nuclear warhead levels "reasonable". According to the International Institute for Strategic Studies, the Soviet SS-N-21 has a range of 3000 km compared to the 2500 km range of the US Tomahawk.<sup>36</sup> More importantly, it is judged to be extremely accurate. With a CEP of 150 meters and its single 200KT warhead, the SS-N-21 is an extremely effective weapon. The SS-N-24 is currently under development and no statistics are available. One can suppose that its capabilities will equal or exceed those of the highly capable SS-N-21.

Although the Soviet strategic bomber posture in Case B looks similar to that in Case A, there are differences both in terms of quality and quantity. First, the Soviets have retired all of their older, non-ALCM Bear bombers and have replaced them with 75 Blackjacks in the penetrating role. This will keep US air defenses "honest" by providing a penetrating bomber threat. On the other hand, START II has eliminated the "free" bomber weapons of START I, so the total deliverable warhead count remains at the START II maximum.



The Soviet threat presented in the above paragraphs for Case B is not the only Soviet response that could be postulated assuming the parameters I have created for a START II Treaty. Given the Soviet's historical emphasis on land-based missiles, they might prefer to deploy more ICBMs in lieu of SLBMs, SLCMs, or bombers. However, if a secure, second-strike force is their goal, a balanced triad of forces, as presented in Case B, is probably in their best interest.

How would the US respond to both the Soviet threat presented in Case B and the START II limitations? That is the focus of the next section of this paper.

### CASE B

#### US STRATEGIC FORCES (START II - CONSTRAINED) - YEAR 2000

<u>DEL. VEH.</u>	<u>NO. DEPLOYED</u>	<u>WHDS./VEH.</u>	<u>TOTAL WHDS.</u>
<b><u>ICBM</u></b>			
MM. 1V	350	1	350
PEACEKEEPER	50	3	150
MIDGETMAN	250	1	250
<b><u>SLBM</u></b>			
D-5 (ON 13 TRIDENTS)	312	8	2496
D-6 (ON 4 TRIDENTS)	96	6	576
<b><u>SLCM</u></b>			
BGM-109A(TOMAHAWK)	750	1	750
<b><u>STRATEGIC BOMBERS</u></b>			
B-52H (ACM)	90	10	900
B-1B (NON-ALCM)	90	10	900

**NOTE 1:** The above configuration deploys 6372 warheads (under the START II maximum of 6500) on 1988 SNDVs (START II maximum - 3000).

**NOTE 2:** To comply with the START II maximum of three warheads per ICBM, Peacekeeper has been downloaded from 10 warheads per missile to 3 warheads per missile.

**NOTE 3:** 96 D-5s have been downloaded from 8 warheads per missile to 6 warheads per missile to comply with the 6500 START II total warhead limitation. The downloaded missiles have been redesignated D-6.

**NOTE 4:** Non-ALCM bomber warheads are fixed by aircraft type and limited under the total warhead count. (Uncounted bomber warheads are limited / eliminated under START II).

**NOTE 5:** Figures derived from The Military Balance 1990-1991, International Institute for Strategic Studies, London, 1990.

With a diminishing Soviet threat and continued improvement in US-Soviet relations, it is safe to assume that there would be increased pressure to reduce US strategic offensive forces as much as possible. It is not clear that the US would deploy systems to the upper limits of a START II Treaty, but for purposes of this paper, I have made the assumption that deployed US warheads would be close to the limit. I do believe, however, that along with some reduced level of strategic modernization, force structure cuts would be unavoidable.

In looking at the proposed Case B US ICBM fleet, it is clearly a reduced force from that of Case A. The remaining Minuteman IIIs have been retired as a cost-saving measure. In compliance with treaty requirements, the Peacekeepers have been downloaded from 10 warheads to three warheads per missile. On the deployment side, the fielding of Midgetman has been tapered back to 250 missiles. This provides the US with an ICBM fleet that carries 750 warheads, or approximately 12% of the US total.

In a less constrained fiscal environment, a much better posture would have all US ICBMs based in a more survivable, mobile mode. However, given the political constraints and a reduced threat, I doubt that Congress would approve the considerable funding levels that would be required to give mobility to the entire ICBM fleet. Under this scenario, the Soviets will probably be in a much better position than the US with respect to ICBMs by the year 2000. With their historic reliance on land-based missiles and their active modernization program, this is not an unexpected outcome.

Without a reordering of current US priorities, Case B finds the majority of US strategic nuclear warheads at sea. Assuming 17 Tridents are built, almost 50% of US strategic nuclear offensive power would reside within them. Given the state of the world in Case B, this could be a tolerable situation. However, placing that much reliance on one leg of a sharply reduced triad would engender some additional risk. Such emphasis on the sea leg of the triad would require the continued relative invulnerability of US SSBNs and perhaps additional agreements, such as exclusion zones, which might afford both sides' ballistic missile submarines additional security.

The addition of SLCMs within the limitations of a START II Treaty would cause some problems and complications for the US and her war planners. First, SLCM inclusion would limit the

deployment of traditional weapons carried on ICBMs, SLBMs, and strategic bombers. Second, verification would be a difficult issue to resolve. It would require either a great deal of trust or very stringent inspection procedures (or both) to ensure that the limits on the nuclear-tipped SLCMs were being observed.

For US war planners, including SLCMs in the SIOP would be problematic, given the large number of ships that would be potential carriers. SLCM inclusion within the SIOP might require warships other than ballistic missile submarines be dedicated to the SIOP role, a prospect to which the US Navy would no doubt object. If not included within the SIOP, nuclear SLCMs would be relegated to a theater nuclear role. If that were to be the case, their deployment could be capped at levels much lower than 750, allowing more strategic warheads to be fielded within the START limitations. One other option might be viable. Theater SLCMs on survivable SSNs, for example, could be incorporated into the secure reserve force to provide an additional element of nuclear reserve. Whatever their final disposition, nuclear SLCMs will add a measure of complexity to both START and the war-planning process.

Turning now to the bombers, their deployment in Case B is identical to that of Case A. However, under START II, counting rules for bomber weapons have tightened to eliminate the "free" weapons that were allowed under the original START Treaty. Assuming that agreements have been made to limit the weapons-carrying capacity of the aircraft and that verification procedures can be instituted to ensure the modifications, the loophole which permitted thousands of uncounted warheads to exist under START I will have been closed. The superpower environment which created START II should be capable of creating such an agreement with integral, on-site inspections.

As with Case A, SAC's strategic bomber fleet remains at 180 aircraft. It is still composed of cruise missile carrying bombers and penetrators, which both complicates enemy defensive planning and offers the potential to attack relocatable targets. Even with START II warhead limitations, the strategic bomber fleet carries as many as 1800 weapons, nearly 30% of the nation's total.

In analyzing a strategic offensive force at the 6500 level, some cautions appear that are not as critical at the higher force levels we have grown accustomed to having. First on the list is the

credibility of deterrence under the worst case scenario. Although the probability of a "bolt out of the blue" attack should be extremely low, it must be considered, particularly with respect to surviving weapons and their ability to execute the missions assigned to them.

A "bolt out of the blue" attack, with US nuclear forces in a day-to-day alert posture, would in all probability catch all of the non-alert bombers, many of the silo-based ICBMs and all of the SSBNs not at sea. If the Soviets were able to use depressed trajectories on their SLBMs, the results would be even worse for the US. A ban on testing this type of missile flight profile should be made part of a START II Treaty that significantly lowers force levels. The point is simply that at lower force levels, the result of an attack could leave the recipient with such a "feeble" retaliatory response as to pose an acceptable risk to the attacker. Under such conditions, deterrence could fail. It would seem, therefore, that the lower the force level, the more secure from a preemptive attack that force must be to remain a credible deterrent. This may appear elementary, but it could become extremely expensive if we are unprepared to spend an expected "peace dividend" on strategic nuclear modernization.

Another casualty of lower force levels could be the targeting strategy. At some point, the forces that remain for retaliation after an attack may not be sufficient to hold at risk both counter force and counter value targets. The countervailing strategy may have to be abandoned for a targeting strategy based on the assured destruction of a percentage of an attacker's cities and population.

In any event, significant strategic offensive force reductions could have unintended second and third order effects that need to be carefully thought through before agreements are signed. It could be that significant force modernization of the smaller force would be required to maintain a credible deterrent posture.

To this point in this paper, we have reviewed two possible Soviet force structures, both derived from a Soviet Union that is less threatening to the US than in the Cold War days of Khrushchev and Brezhnev. Both scenarios seemed possible, even probable, just a few short months ago. However, with the Soviet Union appearing to regress back towards the old hard-line communist rhetoric and the CFE and START treaties in serious jeopardy, it is necessary to look at a

more threatening Soviet Union and to examine the strategic nuclear threat that such a Soviet Union could pose to the US in the year 2000, and what response would be appropriate for the US in return.

CASE C: THE COLD WAR RETURNS

CASE C

SOVIET STRATEGIC FORCES (UNCONSTRAINED) - YEAR 2000

<u>DEL. VEH.</u>	<u>NO. DEPLOYED</u>	<u>WHDS./VEH.</u>	<u>TOTAL WHDS.</u>
<u>ICBM</u>			
SS-17	75	4	300
SS-18	308	10	3080
SS-19	320	6	1920
SS-24	100	10	1000
SS-25	500	1	500
<u>SLBM</u>			
SS-N-17 (ON 1 YANKEE II)	12	1	12
SS-N-18 (ON 14 DELTA IIIs)	224	(varies)	672
SS-N-20 (ON 15 TYPHOONS)	300	10	3000
SS-N-23 (ON 15 DELTA IVs)	240	4	960
<u>SLCM</u>			
SS-N-21	500	1	500
SS-N-24	1000	1	1000
<u>STRATEGIC BOMBERS</u>			
BEAR H (ALCM)	100		1000
BLACKJACK (ALCM)	75	12 (AS-15 ALCM)	900
BLACKJACK (NON-ALCM)	75	24 (AS-16 SRAM)	1800

**NOTE 1:** The above configuration deploys 16644 warheads and assumes Soviet retention of selected systems deployed not earlier than 1977.

**NOTE 2:** The selected ICBM fleet deploys approximately current levels of ICBMs. Systems deployed prior to 1982 are assumed to be retired, while a moderate (by Soviet standards) deployment of mobile ICBMs has been pursued through the 1990s.

**NOTE 3:** The SLBM fleet retains all SSBNs launched after 1977 and assumes a modest two boat per year procurement rate through the 1990s.

**NOTE 4:** SLCMs with a range of 3000 km or greater are included in warhead totals and are assumed to be carried on a wide array of surface combatants and attack submarines.

**NOTE 5:** The strategic bomber deployment assumes a procurement of 15-20 aircraft per year out to the year 2000, adding 25 aircraft to the Bear H fleet and 135 aircraft to the Blackjack fleet.

NOTE 6: Figures derived from The Military Balance 1990-1991, International Institute for Strategic Studies, London, 1990.

The Case C Soviet strategic force structure is impressive indeed. It is also realistic, simply an extension of trends we are seeing today without the massive force structure retirements that a START treaty would demand of the Soviets. This configuration deploys over 16500 strategic nuclear warheads, over 4000 warheads more than currently fielded by the US. Moreover, by the year 2000, this force would be younger than the US strategic offensive nuclear force is today.

The Case C Soviet ICBM fleet is totally composed of forces deployed during 1982 or later, so it is a young force. Considering changes from their posture in 1990, the older Soviet ICBMs - the SS-11s, SS-13s and SS-17s have all been retired, even though by US standards they could conceivably still be a vital part of the active force structure. In place of the older systems, the Soviets have continued deployment of their mobile SS-24s and SS-25s, up 40 and 275 missiles respectively from 1990 levels. Therefore, to achieve the Case C level of ICBMs by the year 2000, the Soviets have only to deploy 315 of their newest mobile systems, a rather modest effort by Soviet standards.

Developments in the Soviet SLBM fleet over the decade also reflect modest effort. For Case C, all submarines deployed prior to 1977 have been retired, while the bulk of the missiles (SS-N-20s and SS-N-23s) are in newer TYPHOON and DELTA IV SSBNs. Compared with earlier levels, a fleet of 45 SSBNs is low, down 18 boats from 1989. Yet the number of warheads is substantially higher, due to the large number of SS-N-20s with 10 warheads each deployed on the 15 TYPHOON SSBNs. The 45 number should be achieved maintaining "normal" Soviet production rates. In this case, only one TYPHOON and one DELTA IV need be produced per year to reach the depicted level by the year 2000.

Turning to the other sea leg of the strategic nuclear equation, the Soviets have deployed a significant but constrained number of SLCMs in Case C. At relatively low cost, these weapons can be deployed on any number of surface combatants and attack submarines and can be used in both the theater and strategic role. Given the dramatic results the US TLAM-C (Tomahawk cruise missile) achieved using conventional munitions during the recent war with Iraq, it is likely that the Soviets

will heed this lesson and deploy a large number of relatively inexpensive cruise missiles in both their conventional and nuclear forms.

As with the sea leg of the Soviet triad, Case C finds the Soviet strategic bomber fleet able to carry a significantly greater number of warheads with a modest deployment effort on-going during the 1990s. With a decision to continue production of the Tu-160 (Blackjack) bomber at the rate of just over one aircraft per month, the Soviets will be able to deliver 3700 nuclear warheads with their bomber fleet, greatly surpassing the approximately 1000 warheads their bomber fleet could carry in 1990. Such a deployment will give the Soviet triad great balance, complicate US defensive efforts and perhaps most importantly, help offset a US SDI effort against Soviet ballistic missiles. If for no other reason than the last one, I think it a safe bet to assume a significant Soviet strategic bomber effort barring a treaty limiting or eliminating SDI.

In summary, a continuation of the strategic nuclear arms race, unchecked by a START Treaty, will probably result in a significant increase in Soviet strategic nuclear capability. It is possible that economic factors within the Soviet Union, given current Soviet economic trends, could put a damper on Soviet strategic nuclear force deployments. However, even in the face of their recent economic problems, the Soviets have continued their strategic force modernization, and this has remained so in spite of the best relations the Soviets have had with the US since the end of World War II.

With these figures in mind, it is clear that the US will have to aggressively pursue its own strategic modernization program if it hopes to "stay in the ballpark" with the Soviets. If Case C is any indication of where the Soviets will be in the year 2000 without START, the US had better do everything possible to conclude a START Treaty or be prepared for either massive spending on strategic nuclear arms or significantly increased risk. Assuming that the latter course is deemed unacceptable by the US leadership, I will now address the issue of the former. How should the US respond to the provocative Soviet arms buildup presented in Case C?

CASE C

US STRATEGIC FORCES (UNCONSTRAINED) - YEAR 2000

<u>DEL. VEH.</u>	<u>NO. DEPLOYED</u>	<u>WHDS./VEH.</u>	<u>TOTAL WHDS.</u>
<u>ICBM</u>			
MM III	500	3	1500
PEACEKEEPER(RAIL)	100	10	1000
MIDGETMAN(SICBM)	500	1	500
<u>SLBM</u>			
C-4 (ON 12 FRANKLINS)	192	8	1536
D-5 (ON 21 TRIDENTs)	504	8	4032
<u>SLCM</u>			
BGM-109A(TOMAHAWK)	1500	1	1500
<u>STRATEGIC BOMBERS</u>			
B-52H (ACM)	90	20	1800
B-1B (ACM)	90	22	1980
B-2	132	16 (8 SRAM/8 GRAV)	2112

NOTE 1: The above configuration deploys 15960 warheads and assumes selective retention of the most modern US strategic systems existing in 1990.

NOTE 2: The ICBM fleet is 20% larger (in terms of warheads) compared to 1990 but has 50% of the fleet based in a mobile mode. Peacekeeper is assumed to be based in rail garrison mode.

NOTE 3: The SLBM fleet assumes retention of all 12 Benjamin Franklin (SSBN-640) class submarines with Trident C-4 missiles.

NOTE 4: Tomahawk SLCMs are deployed on a wide array of surface combatants and attack submarines.

NOTE 5: The strategic bomber complement assumes the B-52H and B-1B aircraft are deployed in the stand-off mode with stealthy advanced cruise missiles (ACM). The B-2 is deployed as a penetrating bomber with short range attack missiles (SRAM II) and gravity bombs.

NOTE 6: Figures derived from The Military Balance 1990-1991, International Institute for Strategic Studies, London, 1990.

In postulating a US response to an unconstrained Soviet strategic nuclear buildup, I attempted to integrate the most modern, currently-fielded US systems with new systems in the pipeline. There was no intent on my part to match US and Soviet warhead counts identically, although I do believe that the US would attempt to maintain a posture roughly equivalent to that of the Soviets. My only intent here was to portray a logical US deployment given the assumed Soviet threat.



Responding "in kind" to a Soviet strategic buildup through the 1990s would be an expensive affair for the United States. Because the Soviets have maintained an on-going modernization effort within their strategic programs, their force is much younger than its US counterpart and consequently, in a much stronger position to sustain a force buildup without having to undergo retirements due to age.

The years 1987-1989 are instructive in assessing this Soviet modernization effort. While enjoying the greatest relaxation of tensions with the United States since the close of World War II, the Soviets still maintained a relentless strategic modernization program. Over that three year period, they produced 130 bombers, 415 ICBMs, 300 SLBMs and 5 ballistic missile submarines compared to 74 bombers, 45 ICBMs, 21 SLBMs and 2 ballistic missile submarines procured by the US.<sup>37</sup>

Moreover, particularly with their land based ICBMs, they have placed their new systems in survivable basing modes which afford them an enhanced ability to avoid a US retaliatory strike and control events following an initial nuclear exchange. Neither of these trends bodes well for the US ability to hold Soviet forces at risk or its intent to control the situation in the unlikely event of actual hostilities. The US response to the Soviet Case C force attempts to address these deficiencies.

Looking first at the ICBM leg of the Triad, two mobile systems have been deployed in order to lessen the Soviet first-strike capability against US ICBMs. Without going mobile, the US's fixed-silo ICBMs are greatly threatened by the 3080 SS-18 warheads the Soviets have retained without START. While the US has anguished for almost 15 years over a land-mobile deployment scheme for her ICBMs, the Soviets have deployed two mobile systems which are strikingly similar to current US planning concepts. If the effectiveness of land mobile systems was ever in question, one has only to point to the difficulty the US had, even with essentially unlimited air assets, in locating, targeting and destroying Iraqi Scud missiles during the recently concluded war in the Persian Gulf. If the US plans to maintain an effective triad of strategic weapons, it must move away from fixed-silo ICBMs and go mobile. In addition, maintaining ICBMs in vulnerable silos defeats the US aim of enhancing stability during a crisis by inviting a preemptive attack against such a lucrative target.

While the Case C deployment of US ICBMs will be expensive (\$35-40 billion by some estimates<sup>38</sup>), such expenditures would be required to maintain a survivable ICBM leg for the Triad. Unfortunately, US investment in this leg of the Triad would not end there. Shortly after the year 2000, the venerable Minuteman III will reach the end of its service life and require replacement. Such replacement could come in the form of more small, single warhead ICBMs or in the larger MIRVed variety. Either way, further modernization efforts within the ICBM leg of the Triad would be necessary.

The situation is not much better with respect to the US strategic nuclear force at sea. In order to maintain the current level of SSBNs out to the year 2000, the US Case C force has deployed 21 Trident SSBNs, up from the 1990 level of 10. This is three more than current US planning calls for, as announced in Secretary Cheney's 1991 report to the Congress.<sup>39</sup> In addition, the US has retained in the operational inventory 12 pre-Ohio Class SSBNs, the 12 Benjamin Franklin (SSBN-640) Class submarines that were retrofitted to carry the Trident I (C-4) missile.

Here again, age raises its costly head. Although the Franklin Class SSBNs have relatively new missiles, the hulls are old. All 12 boats are of the original 41 Lafayette Class SSBNs that were commissioned prior to 1968.<sup>40 41</sup> Thus we find again the lack of strategic modernization during the 1970s and 1980s impacting the US ability to maintain a robust strategic offensive force without massive expenditures throughout the 1990s and beyond.

The bright spot at sea is the relatively inexpensive deployment of the Tomahawk SLCM in the nuclear (TLAM - N) mode. Although all the drawbacks I mentioned regarding SLCMs while discussing Case B exist in Case C, the larger number of total warheads the US possesses in Case C would give planners greater latitude in the use of the SLCM. In fact, they could be used strictly in a theater or strategic reserve role. However, launched from strategically placed attack submarines, SLCMs could be particularly effective in creating ingress corridors for the penetrating bombers which have been fielded by the US in the Case C scenario.

Although avoided in the first two, START- constrained scenarios, an unconstrained arms race through the 1990s would probably require the deployment of a penetrating bomber by the US.

A penetrating bomber would help keep the US Triad strong and balanced, while forcing the Soviets to expend resources to defend against it. Second, a penetrator would provide the best hope of attacking the large number of relocatable targets that the Soviets have fielded. Finally, a penetrating bomber, in conjunction with cruise missile carrying aircraft, could provide a credible deterrent in its own right as a hedge against an extensive Soviet deployment of an ABM (anti-ballistic missile) system. To complement the penetrating B-2, the Case C US strategic bomber force includes both B-52Hs and B-1Bs in the standoff role carrying stealthy ACMs.

Such a force would be similar in size to the strategic bomber force the US maintained in the late 1980s, before the ALCM-carrying B-52Gs began to retire. It would also place the US in a much stronger position to absorb the withdrawal of the B-52Hs from the SIOP after the turn of the century. By the year 2000, the H models will be between 35 and 40 years old and are programmed to be converted to a dedicated conventional role until they are forced to retire due to age. Without the B-2 deployment throughout the 1990s, the US would be left with only 90 B-1Bs comprising its entire strategic bomber fleet, a rather weak leg for the Triad given the threat. With the B-2, however, the bomber leg of the Triad would remain strong and not require further modernization for a number of years. It would also remain strong enough to provide a hedge against a Soviet SDI.

The cost of deploying and maintaining the force structure postulated for the US in Case C is large. In addition to the \$35-40 billion required to deploy the ICBMs, another \$73 billion would be needed for the Trident submarines and approximately \$80 billion for the B-2.<sup>42</sup> If we assume that 25% of the total has already been spent for research and development and initial procurement of these systems, about \$15 billion per year would have to be budgeted through the end of the century to complete the deployment. While this is not grossly out of line with past spending patterns for strategic programs, it greatly exceeds the amount of money the country is planning to invest in such systems under current programming. Moreover, from my perspective, it would represent a significant move in the wrong direction, although totally justified given the magnitude of the Soviet threat.

## SECTION THREE - ANALYSIS AND CONCLUSIONS

### BEYOND THE NUMBERS

In reviewing the three cases I have presented, it is clear to me that the successful conclusion of the START Treaty is of paramount importance in arresting a spiraling strategic nuclear arms race that fails to increase security as it increases weapons. We do not appear to be any more secure at the 16000 warhead level than we were at the 13000 warhead level. In fact, we might be less secure. But without START, we could easily be at that level with nothing gained for the effort, and much wasted in the process.

In saying this, however, I am not suggesting that the US should pursue an arms agreement simply for the sake of the agreement itself, - far from it. What I am suggesting is that an agreement that provides for real reductions, one that maintains "essential equivalence" or whatever term we care to use to describe parity between the two sides, and one that is verifiable, - either by national technical means or intrusive inspections or both, is clearly in the interest of both the United States and the Soviet Union.

Both countries have more problems than they have resources to solve those problems, so it seems to be only common sense to eliminate wasting dollars and rubles to achieve force levels that do not offer more security, and apply those dollars and rubles to more productive endeavors. This sounds great, but it is certainly not the first time someone has uttered such words. The trick is to make it happen, and it seems to me that START is the beginning of the process.

If we can achieve a START agreement which leaves us at the force levels described in Case A, we should immediately begin to formulate a negotiating position for entry into talks for START II. The goal of such talks should be to achieve the 50% nuclear force reduction originally sought after in START I, approximately the 6000 warhead level. This is generally the level of weapons I have presented in Case B. Such an agreement would greatly minimize expenditures on unneeded

weapons for both sides while at the same time, provide a good example of restraint for those nations which are attempting to join the nuclear "club."

While I think it utopian to believe that we can, in the foreseeable future, completely eliminate nuclear weapons from the face of this planet, it might be possible that levels could be negotiated lower yet, to perhaps the three to four thousand range, while still maintaining deterrence and stability. The best description of such a scenario that I have seen was published last summer by Mr. Walter B. Slocombe.<sup>43</sup>

While applauding the recent progress made in relaxing tensions between the US and the Soviet Union, Mr. Solcombe views strategic deterrence as a long-term proposition. He points out that the future of the Soviet Union is uncertain and that nuclear weapons function to deter not only nuclear, but also conventional threats to Western interests and that nuclear weapons are the "ultimate deterrent against large-scale aggression."<sup>44</sup> In reviewing the prospect of a deeply-reduced, strategic deterrent force structure, Mr. Slocombe focuses on maintaining stability in three separate areas: first-strike stability, crisis stability, and arms-race stability.

With regard to first-strike stability, he says that the minimum condition must be that Western deterrent forces must not be vulnerable to destruction by a Soviet first strike. With the survivability of a smaller force so critical, application of such attributes as mobility, low RV to launcher ratios and stealth technology, along with a healthy research and development program to ensure survivability in the future, will be vital.

Such measures will help maintain Mr. Slocombe's second area of concern, crisis stability. He rightly asserts that "...no preemptive strike should be able to reduce one's forces to the point where there remain no viable options other than surrender or all-out attacks on cities."<sup>45</sup> He goes on to suggest that confidence-building measures in peacetime and improved means of communication for use during crises could improve long-term cooperation.

As to a force mix to achieve such goals, he suggests SLBMs which remain relatively invulnerable, single-RV ICBMs and airborne weapons with good pre-launch survivability and good

penetration capability. He also recommends the retention of tight controls on ballistic missile defenses to help ensure both sides maintain a secure second-strike retaliatory capability.

Addressing his final area, arms-race stability, Mr. Slocombe's concerns rest primarily with the potential impact of technological breakthroughs or clandestine build-ups on small deterrent forces. He suggests that while rigorous attention must be paid to hedging against such an eventuality, greater openness among the parties, more effective verification procedures, and low susceptibility to technological leverage could provide a hedge against cheating or a breakout from treaty limits.

Some observers are extremely wary of a drastic reduction in nuclear forces such as proposed by Mr. Slocombe, seeing such deep cuts as a dangerous source of instability. One such critic cites two potential pitfalls with trying to cut too deep. First, the strategic redundancy offered by the multiple delivery modes of larger force structures could be jeopardized. Second, at some level of forces, the nuclear capabilities of third party nations become a factor, creating a whole new set of calculations and complexities.<sup>46</sup> The end result could be a greater likelihood of nuclear war, as opposed to the goal of decreased risk. Thus, the issue is not as simple as it might seem, or as clear cut as we might like it to be.

If attempted, such deep reductions would have to be thoroughly thought through. The mode(s) of deployment for such a radically reduced force would have to be extremely survivable, with a relatively large number of delivery vehicles. The reduction or elimination of MIRVs would be essential in the effort to ensure both survivability and crisis stability. Because of these factors, the "peace dividend" might not be as great as the reduction in forces would suggest, but the goal is noble and worthy of serious consideration and effort.

## CONCLUDING COMMENTS

In this paper, I have attempted to look into the future to postulate the strategic nuclear relationship between the United States and the Soviet Union in the year 2000. In the process, I have presented three cases representing three different Soviet threats, the first two reflecting improved US - Soviet relations, the third, a deteriorating relationship. From this presentation, a number of general conclusions can be drawn which have applicability to US long-range nuclear planning. While none of these may be new or startling, they need to be kept in mind when discussing future US nuclear strategy and forces.

First, since US planning and programming begins with the threat, there will be a great deal of uncertainty in determining US nuclear force requirements for the future. The differing possible outcomes of current Soviet internal conflict create a vast range of potential Soviet nuclear threats and a complex problem for US planning. Planners looking at a threat range of from 6000 to 16000 strategic nuclear warheads will have to build a generous amount of flexibility into any US plan. While hoping for the best, given that the threat is at this time unknowable, they must plan for the worst. While such flexibility need not translate directly into additional weapons in the inventory, it must at the very least translate into active research and development programs and an intelligence capability that can determine, with a great deal of certainty, what the Soviets are doing.

The second general conclusion concerns the direction in which we would like the nuclear arms race to go. It seems obvious that more is not necessarily better when we talk about nuclear weapons. If nuclear weapons are really too terrible to use (to be used only in the direst of circumstances), then our aim should be arms race stability at the lowest possible level congruent with our national goals. Nuclear deterrence should be retained as our primary national security goal but with added emphasis placed on deterrence at the lowest force level. While negotiations with the Soviets may be extremely difficult in these tumultuous times, the potential gains in enhanced national security and the reduced risk of catastrophic nuclear war clearly make the effort worthwhile.

Third, while deterrence at lower force levels should be the goal, maintaining a credible nuclear deterrent, even at lower force levels, will require continuous modernization. In addition, smaller nuclear forces may begat larger and more expensive conventional forces, especially if instability in the world continues to increase. Taken together, these factors may reduce any potential savings to a level much below that which might be expected. Even so, the continued survivability of the deterrent force is of paramount importance if avoidance of nuclear war is to be achieved.

Finally, there is no end in sight for the nuclear arms race or the balance of terror which the nuclear age has presented us as its gift. We can only seek to reduce nuclear weapons deployments to the lowest possible levels and pursue agreements which will minimize the likelihood that nuclear weapons will ever be used, either accidentally or on purpose. For as one observer writes, "...there will be, so long as nuclear weapons remain in the hands of other nations and so long as the future of the USSR is uncertain, a need for the US to continue to maintain survivable, modern, flexible and effective nuclear forces."<sup>47</sup>



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ENDNOTES

- <sup>1</sup>The White House, National Security Strategy of the United States, p. 23.
- <sup>2</sup>The Harvard Nuclear Study Group, Living With Nuclear Weapons, p. 254.
- <sup>3</sup>Bernard Brodie, "The Development of Nuclear Strategy," Military Strategy: Theory and Application, p. 284.
- <sup>4</sup>Scott D. Sagan, Moving Targets: Nuclear Strategy and National Security, p. 14.
- <sup>5</sup>Ibid., p. 17.
- <sup>6</sup>Ibid., p. 22.
- <sup>7</sup>Living With Nuclear Weapons, p. 80.
- <sup>8</sup>Op. Cit., p. 28.
- <sup>9</sup>Ibid., p. 29.
- <sup>10</sup>Living With Nuclear Weapons, p. 87.
- <sup>11</sup>Sagan, p. 33.
- <sup>12</sup>Op Cit., p. 90.
- <sup>13</sup>Op. Cit., p. 41.
- <sup>14</sup>Leon Sloss and Marc Dean Millot, "U.S. Nuclear Strategy in Evolution," Strategic Review, Winter 1984, p. 22.
- <sup>15</sup>Ibid., p. 23.
- <sup>16</sup>Sagan, p. 43.
- <sup>17</sup>Op. Cit.
- <sup>18</sup>Op. Cit., p. 45.
- <sup>19</sup>Living With Nuclear Weapons, p. 90.
- <sup>20</sup>Sagan, p. 47.
- <sup>21</sup>Sloss and Millot, p. 23.
- <sup>22</sup>Ibid., p. 24.
- <sup>23</sup>Sagan, p. 49.
- <sup>24</sup>Ibid., pp. 50-53.
- <sup>25</sup>The International Institute for Strategic Studies, The Military Balance 1990-1991, pp. 212-213.
- <sup>26</sup>U.S. Department of Defense. Soviet Military Power 1990, pp. 4-5.
- <sup>27</sup>Sagan, p. 52.
- <sup>28</sup>The International Institute for Strategic Studies, Strategic Survey 1989-1990, p. 195.
- <sup>29</sup>The International Institute for Strategic Studies, Survival, July/August 1990, pp. 365-368.
- <sup>30</sup>U.S. Department of Defense. Soviet Military Power 1990, p. 51.
- <sup>31</sup>National Security Strategy of the United States, p. 2.
- <sup>32</sup>Soviet Military Power 1990, p. 64.
- <sup>33</sup>Donald M. Snow, National Security, pp. 259-262.
- <sup>34</sup>Gordon Adams and Stephen Alexis Cain, "Defense Dilemmas in the 1990s," International Security, Spring 1989, p. 11.
- <sup>35</sup>Michael E. Brown, "The U.S. Manned Bomber and Strategic Deterrence in the 1990s," International Security, Fall 1989, pp. 17-26.
- <sup>36</sup>The Military Balance 1990-1991, p. 222.

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- 38 Michael E. Brown, "The U.S. Manned Bomber and Strategic Deterrence in the 1990s," International Security, Fall 1989, p. 34.
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- 41 U.S. Army War College, Forces/Capabilities Handbook Vol. II - Weapon Systems, p. 6-9.
- 42 Brown, p. 34.
- 43 Walter B. Slocombe, "Strategic Stability in a Restructured World," Survival, July/August 1990, pp. 299-312.
- 44 Ibid., p. 303.
- 45 Ibid., p. 305.
- 46 Sagan, p. 180-181.
- 47 Slocombe, p. 311.

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