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**In Search of Superiority**  
**US Nuclear Policy in the Cold War**

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## ***Introduction***

The role of nuclear weapons in the Cold War is a hotly contested issue among historians and political scientists. Various propositions have been advanced: nuclear weapons were a necessary, if not sufficient condition for the long peace between the superpowers after the end of World War II;<sup>1</sup> they were essentially irrelevant to that peace;<sup>2</sup> they may possibly have contributed to the peace, but not without heavy costs and risks that might as well have led to a nuclear disaster;<sup>3</sup> or, as the intellectually least ambitious thesis, the question is intrinsically impossible to answer and should therefore be dismissed as a pseudo-problem.<sup>4</sup>

The aim of this study is neither to assess the explanatory power of these propositions, nor to offer any alternative thesis. Rather, I will examine a related but less complex historical problem: What characterized the nuclear weapons policy of the United States during the Cold War? How did that policy evolve over the years, and what factors were most influential in bringing about the changes that can be observed?

To answer these general questions, we need first to deal with several more specific problems. One has to do with terminology. Since "nuclear policy" is not a very precise term, we should define more exactly *what* aspect of it we are dealing with at any particular point of analysis. In the Cold War era, an important distinction existed between, on the one hand, US plans and preparations for the possible use of nuclear forces in a war with the Soviet Union (*US nuclear strategy*), and, on the other hand, the various means by which US authorities tried either to minimize Soviet offensive capabilities (*US strategic arms control policy*) or to maximize American protection against a Soviet nuclear attack (passive or active means of *strategic defense*). One important aim of this study is to analyze the

interplay between these different aspects of US nuclear policy, with particular emphasis on how changes in nuclear strategy may explain the changing roles of strategic arms control and strategic defense in this forty-five year period.

What complicates our task is that "strategy" itself is such an ambiguous term. For the purpose of this study, I will distinguish between four different segments, or levels, of US nuclear strategy, which might be more or less coordinated and consistent with each other. The first level is usually referred to as *declaratory policy*: authoritative statements describing the official guiding principles, or "doctrines", for the deployment and possible use of US strategic forces in war. Whereas such statements may have had important political-military functions of their own, their ability to deter Soviet aggression was widely seen as a function of how Moscow perceived the will and capability of the US government to carry out its nuclear doctrine. If that assumption holds true - and it would be extremely difficult even in retrospect to falsify it - it follows that the declaratory statements of US policymakers should never be analyzed in isolation (a rule, by the way, commonly dismissed in the academic literature on nuclear strategy). At least three other segments of nuclear policy will often prove of relevance to the analysis: *acquisition policy*, *employment policy*, and *deployment policy*. The first refers to the planning criteria used by decisionmakers for developing and procuring nuclear weapon systems for the future. The second refers to how available weapons are targeted and planned for use in the event of nuclear conflict. The third refers to how nuclear forces are actually deployed and postured.<sup>5</sup>

In the following, I will deal with each of these policy aspects and strategy segments. Thus, the first part of this study focuses on the evolution of US strategic doctrine, discussing whether the changes registered were paralleled by a similar evolution in

acquisition, employment, and deployment (AED) policies. In the second part, the focus shifts to the evolutionary interplay between strategic arms control and strategic defense, both of which will be analyzed also in light of the developments discussed in part one.

Throughout, two general pairs of questions are raised: How did US nuclear policy change over the years, and what factors may help to explain these changes? To what extent did the registered changes in doctrine, AED priorities, strategic arms control positions, and strategic defense programs reflect different strategic-political *goals*; and, conversely, to what extent did there exist - beneath the ever-changing ripples on the surface - a steady undercurrent of tasks and objectives that remained essentially unchanged throughout the Cold War period?

In the concluding third part of this study, I offer some tentative answers to these questions, and also formulate some general propositions about US nuclear policy in the Cold War era. The overall conclusion is that the principal goals of that policy - to deter war if possible, to ensure victory in war if necessary - remained remarkably stable throughout the period. On the other hand, there was no comparable consensus about policy *means*. US decisionmakers vacillated between two very different schemes for obtaining their strategic goals. One school of thought believed that, given the hostile and expansionist nature of the Soviet system, war could be deterred only if the United States maintained a clear edge in the strategic arms race. Opposed to these advocates of US superiority was a group of arms control experts, civilian nuclear strategists, and politicians who argued that, as a result of the Soviet Union's increasing offensive capabilities and the practical impossibility of strategic defense, peace and stability could be obtained only through measures that made *both* parties equally vulnerable to each other's offensive forces. Whereas the superiority school

dominated US policymaking in the 1950s and early 1960s, the parity (or MAD) school gained predominance in the wake of the Cuban missile crisis, thereafter holding its grip on US nuclear policymaking for about a decade. By the mid-1970s, however, the pendulum had once again begun to swing in the opposite direction. The result was that, during the Ford, Carter, Reagan, and Bush Administrations, the superiority school gradually succeeded in regaining influence.

Given the dramatic changes that had taken place in the strategic environment between the early 1950s and the mid-1970s, such a comeback calls for an explanation. Did it result from "domestic political pressures", "bureaucratic politics" or "technological momentum" - general factors often used in explaining the strategic arms race<sup>6</sup> - or should it rather be seen as a rational response to what US policymakers now perceived as an increasing military threat from the Soviet Union?

While these questions cannot be fully addressed before more archives have been made available for historical research, some tentative answers can still be offered on the basis of current knowledge. At the end of the present study, I suggest that the revival of the superiority school was due to three overriding factors: a general conservative upswing in American society from the mid-1970s onwards; an increasing sense of insecurity because of real or anticipated changes in the strategic capabilities and nuclear doctrine of the Soviet Union; and significant technological developments in strategic defense and so-called C<sup>3</sup> facilities (command, control and communication networks). Far more than bureaucratic politics or technological break-throughs in *offensive* strategic weapons systems, these three factors precipitated the balance of argument in favor of the superiority school. The result is well known: precisely at the time when the Soviet leadership was beginning to realize that the strategic arms race was over-burdening its national economy,

US defense and security policies took a dramatic turn towards costly modernization and R&D programs, especially in the technologically sophisticated area of strategic defense.

While it is hard to estimate what causal impact these developments might have had on the process that led to the fall of the Soviet Union and the peaceful ending of the Cold War, it seems unlikely that this renewed US quest for strategic superiority did not at least contribute to the *speed* at which that historical process was brought to its unexpected but logical conclusion.



## ***The evolution of US nuclear strategy***

What strategic-political functions did nuclear weapons have in US Cold War policy towards the Soviet Union? What objectives were they to help to obtain in peacetime, and what would be their tasks in war?

As US policymakers first began to consider the political and military implications of the atomic bomb, they gradually came to emphasize three fundamental tasks for the embryologic nuclear forces of the United States. First and foremost, the atomic bomb was seen as their most important instrument for *detering Soviet aggression* against the United States or its allies.<sup>7</sup> Secondly, the bomb was increasingly considered a "tremendous advance" in war-fighting capability; thus, should deterrence fail and major war break out, nuclear weapons were to *ensure a favorable outcome for the United States*.<sup>8</sup> Thirdly, US policymakers were concerned that other Western societies, especially in Europe, could be intimidated by Moscow and brought to make self-defeating concessions if a majority of their populations should come to feel that the overall balance of power was changing in favor of the Soviets. Within this psychological-political context, nuclear weapons were intended to *bolster Western morale*, thereby offsetting the negative impact of Soviet superiority in other areas of defense, particularly in conventional forces for the central front in Europe.<sup>9</sup>

We shall now see how, within a rapidly changing strategic environment, these broad political-military objectives were extrapolated into specific plans and policies for how US nuclear forces most efficiently could serve US interests.

## The atomic blitz: US nuclear strategy in embryonic form (1948-1952)

Even though these three broad objectives - deterring Soviet aggression, securing US victory in war, and bolstering Western morale - were all formulated and generally agreed upon by US policymakers as early as 1946-1947, it took more than three years from the first atomic bomb attacks on Hiroshima and Nagasaki before the Truman Administration was to develop anything resembling a nuclear strategy. In September 1948, the National Security Council approved NSC-30, a top-secret memorandum entitled "United States Policy on Atomic Warfare". This document was prepared in response to growing frustrations among military planners and foreign-policymakers over the lack of policy guidelines, operational plans, and practical military preparations for the possible employment of nuclear forces in a conflict with the Soviet Union.

To the Joint Chiefs of Staff (JCS) and the Secretary of Defense, James V. Forrestal, the Berlin crisis had revealed how utterly unprepared the United States was to make political and military use of its nuclear monopoly. Shaken by that experience, the Pentagon asked for a presidential decision on the US position regarding the initiation of atomic warfare, including consideration of the time and circumstances of employment, and the type of targets against which nuclear weapons would be employed.<sup>10</sup> The request resulted in NSC-30, which placed two recommendations before the President. First of all, it recommended that, in the event of war, the National Military Establishment should be ready to "utilize promptly and effectively all appropriate means available, including atomic weapons, in the interest of national security and must therefore plan accordingly". In addition, it suggested that the decision whether to employ atomic weapons in any future war was "to be made by the Chief Executive when he considers such a decision

to be required", and that no official advance declaration should be made regarding the President's likely decision on the matter.<sup>11</sup>

In accordance with these recommendations, official US policy under Truman became one of "possible first-use" of nuclear weapons in response to a major conventional or nuclear attack by the Soviet Union and its allies. The scale of such Soviet provocation was never specified: in principle, any direct threat against vital US interests could prompt a presidential decision to use nuclear weapons. Nor did NSC-30 say anything about the likely sequence of US actions preceding such a decision; for instance, whether all available conventional options would be executed first or, at the other extreme, the entire strategic nuclear force would be used in a single devastating first response to a Soviet conventional attack. In subsequent official statements, Truman and his senior advisers held on to this flexible position, apparently hoping to deter Soviet aggression simply by stressing the *possibility* of a US nuclear response to any major military operations against the West.

Similar flexibility was adopted with regard to acquisition, employment, and deployment policies as well. On the one hand, Truman had told a group of military and foreign policy advisers that, even though he prayed that he never would have to order the use of nuclear weapons, no one should doubt that he would do so, if the situation made it necessary.<sup>12</sup> Moreover, there is no indications that he would allow political or moral considerations to decide the choice of targets for the strategic bomber offensive.<sup>13</sup> On the other hand, he refused to give his military planners access to information on the precise size of the US nuclear forces - which made several strategic war plans totally unrealistic because they targeted far more Soviet industrial and military installations than there were bombs in the US stockpile.

Until the outbreak of the Korean War in June 1950, Truman also insisted on a deployment policy which put severe restrictions on the operational readiness of the Strategic Air Command (SAC), the principal executor of the planned "atomic blitz" strike against the Soviet Union. All nuclear weapons were kept under strict civilian custody of the Atomic Energy Commission (AEC), which would start to assemble and transfer them to the SAC bases only upon direct order from the President. Indeed, prior to July 1952, not even the non-nuclear components of the AEC-controlled atomic bombs were allowed to be stored outside the territory of the United States. This meant that, in an emergency, all weapons parts would have to be transported to SAC's forward bases and assembled there before becoming operational.<sup>14</sup>

These restrictions did not mean that there had been no practical preparations at all for a possible military use of the nuclear stockpile. Following the approval of NSC-30, the Administration's AED policies underwent several important developments, with the aggregated effect that by the end of Truman's term in early 1953, the United States had dramatically enhanced both its nuclear capabilities and its strategic-political dependence on nuclear forces. First of all, the stockpile had increased more than ten-fold, from approximately 100 atomic bombs by the end of 1948 to over 1,000 by the end of 1952.<sup>15</sup> Equally important, the qualitative characteristics of the bombs had been radically upgraded and refined. Whereas the 1948 stockpile had consisted exclusively of Mk.3 fission bombs, a clumsy 15-22 kiloton gadget which took a 39-man crew over two days to assemble and could be delivered only by huge strategic bombers (the B-29s, B-36s, and B-50s), the 1952 stockpile contained both a 200 kt yield bomb for strategic usage (Mk.6), a deep penetration bomb of similar yield designed for hardened targets (Mk.8), two smaller bomb types for tactical missions (Mk.5 and Mk.7), and a 15 kt artillery shell (Mk.9). In addition, the Atomic Energy

Commission had developed and successfully tested a thermo-nuclear device. A year later, this would lead to the introduction of the first H-bomb in the US stockpile: the Mk.18 with the horrifying yield of 15,000 kt. As for delivery, nuclear weapons could now be brought on target by anything from the 280mm howitzer, assigned for the European "tactical" battlefield, to a wide range of aircraft, including the tactical F-846 "Thunderjet" and the B-47 "Stratojet" bomber.<sup>16</sup>

Reflecting this growth and sophistication of capabilities, nuclear weapons were assigned increasingly demanding tasks in US war plans. The first tentative plans for a nuclear strike against the Soviet Union, such as the *Pincher/Broiler* plans of 1946-47, had restricted SAC's operational responsibility to the task of delivering a massive nuclear air strike against some 20-odd Soviet cities and urban centers. The principal objective was to paralyze the enemy's will, prompting an early surrender. From 1949 onwards, however, US war planners gradually began to expand SAC's role to include the execution of three different tasks or missions, presented here in order of priority:

- the *Bravo* mission, which called for the blunt elimination of Soviet offensive forces capable of delivering nuclear weapons against Western targets;
- the *Delta* mission, aimed at an increasingly wide range of industrial targets judged crucial to Soviet war-making capability;
- the *Romeo* mission, which essentially consisted of employing a number of lower-yield nuclear weapons against tactical targets, basically large ground and artillery forces on the move toward Western Europe.<sup>17</sup>

This expansion of operational tasks had several causes. The *Bravo* mission was added to the list in response to the successful Soviet nuclear test in September 1949, which implied that the

United States would now have to face the possibility of becoming a target for nuclear attack. The *Romeo* mission was added partly in response to technological developments - the introduction of small lower-yield tactical nuclear weapons - partly because of increasing US concern about Soviet conventional superiority after the formation of NATO, and partly because of inter-service rivalry.<sup>18</sup>

By the time the Truman Administration was wound up after the 1952 presidential election, the National Military Establishment of the United States had become a very different creature than at its establishment in 1947. In fiscal 1952, the defense and atomic energy budgets allocated funds to nuclear forces equivalent to 3% of the GNP - a share never to be exceeded during the Cold War.<sup>19</sup> Having ordered a substantial increase in US production of weapon-grade uranium and plutonium in the fall of 1949, the president approved another dramatic production increase in October 1950, one week after he had formally approved the important national security policy document NSC-68.<sup>20</sup> A third increase in fissionable production was ordered in January 1952, calling for a 50% increase in plutonium production and 150% in uranium 235.<sup>21</sup>

Equally important was the expansion in the political-strategic function of the nuclear forces. Whereas in 1947 US war planners were still debating the actual utility of nuclear weapons, both NSC-68 and the emergency war plans prepared in 1950-52 were based on the assumption that whatever conventional build-up the United States might undertake in the near future, clear "preeminence" in strategic and tactical nuclear was a *necessary precondition for the fulfillment of America's peace- and wartime objectives toward the Soviet Union.*<sup>22</sup>

From these and other documents, it is clear that the US nuclear forces were meant to achieve four distinct objectives: First of

all, they should help to deter Soviet aggression against the United States and its allies.<sup>23</sup> Secondly, they were intended to bolster Western self-confidence in a situation of alleged conventional inferiority.<sup>24</sup> Thirdly, in case of war, an early and massive employment of nuclear weapons against Soviet strategic targets was to force the enemy to a quick surrender. Should the initial *Bravo* first strike *not* weaken the Soviet Union's war-fighting capabilities sufficiently to paralyze Soviet will, the United States would then employ nuclear weapons in their *Romeo* and *Delta* modes - with the respective purposes of halting the expected Soviet ground offensive in Central Europe<sup>25</sup> - and crippling the Soviet Union's war-making capability through massive destruction of her economic infrastructure, energy production facilities, and government centers.<sup>26</sup>

In order to achieve the two latter objectives, the United States would not hesitate to be the first to use nuclear weapons, whether for tactical purposes in Europe or for strategic purposes in an all-out war. On the other hand, however, Truman was never willing to specify the exact circumstances under which he would be ready to order a nuclear attack. The general impression, though, was that the nuclear option was reserved exclusively for the event of a massive Soviet assault against the United States or its major European or Asian allies.

### Massive retaliation (1953-1960)

The first major shift in US nuclear strategy came in early 1954, when John Foster Dulles, President Eisenhower's Secretary of State, publicly announced that, in any future conflict with Communist countries, the United States would "depend primarily upon a great capacity to retaliate, instantly, by means and at places of our own choosing".<sup>27</sup> Even if Dulles did not refer specifically to nuclear weapons, the message was unmistakable:

the likely US response to any future enemy attack - be it small or large, conventional or nuclear, directed against the United States itself, its allies, or its overseas bases - would be to launch a devastating nuclear attack on Soviet *and* Chinese military installations, industrial plants and cities.<sup>28</sup>

This doctrine of *massive retaliation* differed from the position of the Truman Administration in two important ways. First of all, it signaled that the United States *no longer saw the atomic bomb as a weapon of last resort*, to be used only in such life-and-death-struggles as following a Soviet nuclear first strike against the United States or a massive conventional attack against its principal European and Asian allies. In a sense, the new doctrine put less emphasis on the magnitude of the Soviet aggression and more on its overall strategic context: if Washington judged that US security interests were threatened, even a very limited enemy assault could prompt a massive response. In order to enhance the credibility of this strategy, Eisenhower and Dulles took great pains to convince the Soviet leadership that they saw nuclear weapons as an ordinary military, rather than extraordinary political instrument of power. For instance, Eisenhower used many of his early press conferences and interviews to point out that he, in implicit contrast to Truman, would employ nuclear weapons against tactical or strategic targets *whenever operational circumstances favored their use*. Even if no one used exactly those words at the time, this implied a willingness to lower the nuclear threshold.<sup>29</sup> Indeed, when Dulles and Eisenhower made their doctrinal announcements in January 1954, they had already directed changes in US war plans that would make the United States more committed to an early use of nuclear weapons across a wide range of possible military conflicts.<sup>30</sup>

Secondly, the doctrine of massive retaliation also tried to install greater uncertainty about the precise *timing and direction of the*



*US nuclear response.* The Truman Administration had given the impression that, before even considering to trespass the nuclear threshold, it would exhaust a number of conventional options. Moreover, in case of a strictly limited and localized war - say, in Korea, Iran, or on NATO's southern flank - there was reason to expect a possible US nuclear response to be confined to the point of the original aggression; that is, to targets within or near the theater in which the Communist attack had taken place. As pointed out by American diplomatic historian John Lewis Gaddis, one of the major objectives of massive retaliation was to undermine whatever assumptions the Soviet leaders might have had about symmetry between their own aggressive acts and the subsequent American responses. Instead, Eisenhower and Dulles intended their new doctrine to make it more difficult for the Soviets to discount the risk of major war - conventional or nuclear - even in minor military incidents.<sup>31</sup>

The doctrine of massive retaliation was fully consistent with the general thrust of Eisenhower's defense policy. Labeled the "New Look", that policy was based on two major assumptions: First, despite recent US-European efforts to increase NATO's capabilities, the conventional military balance in Europe remained unfavorable to the West, and could be rectified only at excessive economic cost. Secondly, Eisenhower and his advisers believed that there existed a limit for how much a liberal capitalist society could spend on defense without fatally impairing its economic base, and that the United States had come dangerously close to that limit during the final two years of the Truman Administration. On the basis of these premises, they concluded that the only way to reduce defense expenditures (thereby helping to balance the federal budget) while also offsetting the Soviet conventional superiority in Europe, would be to rely more heavily on nuclear weapons - the most cost-effective ingredient in the US arsenal.<sup>32</sup> Thus, the first years of the Eisenhower Administration marked a significant increase in

the production of US nuclear weapons. By the beginning of 1955, there were approximately 2,000 bombs in the nuclear stockpile; twice the number left over from Truman. Moreover, the inventory now included a substantial stock of deliverable H-bombs (Mk.17 and Mk.18).<sup>33</sup>

Despite the introduction of a nuclear-armed tactical ground-to-ground missile for the Army, the clear winner in the struggle for nuclear weapons-related resources was SAC. Two years into the Eisenhower Administration, SAC had at its disposal more than 2,000 aircraft deployed at more than thirty bases in and outside the United States. Half of the SAC force were strategic bombers - a proportion that was soon to increase dramatically as the first B-52s became operational in the spring of 1955. The dependence on SAC and its nuclear missions grew even deeper when Charles P. Wilson, the Secretary of Defense, managed to use NSC-162/2 - the document which formalized the decision to rely on nuclear weapons as the US all-purpose deterrent - to impose upon the chiefs of the Navy and the Army reductions in the size of their services.<sup>34</sup>

Even if these quantitative and qualitative improvements dovetailed with the over-all philosophy of the New Look, it is noteworthy that Truman's last defense budget (Fiscal Year 1953) had indicated *exactly the same priorities in favor of SAC, increased production of nuclear weapons, and an accelerated deployment of H-bombs*. Eisenhower's decision to rely more heavily on nuclear weapons was therefore less innovative than it might seem at a first glance. Massive retaliation brought that position to its extreme, but its technological and material basis had been shaped by decisions made during the Truman Administration. In the words of one observer, all Eisenhower had to do "was provide a strategy to match the mandated force posture".<sup>35</sup>

Once he had done that, however, the US president faced the converse problem of building a force posture that could uphold the new strategy's credibility under quickly changing technological and operational conditions. Did Eisenhower succeed? There is more than one answer to that question. At least for the first three or four years, his acquisition and deployment policies tallied well with the doctrine of massive retaliation. However, policies may have been less adequate in his second term. For instance, contemporary critics claimed that the Administration failed both to acknowledge and address the increasing Soviet offensive threat after the "Sputnik" launch in October 1957. In their view, the credibility of massive retaliation hedged on the maintenance of US nuclear superiority or, as a minimum requirement, a practically invulnerable second-strike capability. By allowing the Soviet Union to develop an offensive missile capability that could destroy all major US cities and the bulk of the US retaliatory forces in a massive first strike, the Eisenhower Administration, these critics charged, had ignored the *sine qua non* of deterrence.<sup>36</sup>

This criticism was only partly justified. Contemporary critics like RAND analyst Albert Wholstetter generally exaggerated the technological advances and military production capabilities of the Soviet Union. They also tended to ignore the very substantial efforts which the United States undertook in the late 1950s to offset any emerging Soviet strategic advantages. For instance, Eisenhower approved acquisition plans for a total of 250 Atlas and Titan ICBMs, 450 Minuteman ICBMs, and 19 nuclear-capable Polaris submarines. Simultaneously, he funded a steady increase in the strategic bomber force, which by the end of 1960 counted more than 600 B-52s and nearly 1,400 B-47s.<sup>37</sup> He also responded to some of Wholstetter's criticism by asking Congress for more than \$1 billion in supplementary defense appropriations to make the US strategic reserve less vulnerable to a Soviet ICBM attack.<sup>38</sup> Rather than being

indifferent or yielding to the growing Soviet threat, therefore, Eisenhower responded in ways fairly consistent with both his budgetary conservatism and his official military doctrine. As one leading expert has observed, the impressive build-up of US strategic forces that manifested itself in the early 1960s, under presidents John F. Kennedy and Lyndon B. Johnson, in most respects "began during the Eisenhower Administration, and in many respects it preceded rather than followed the launching of Sputnik."<sup>39</sup>

Regarding employment policies, however, the Eisenhower years were characterized by an increasing gap in sophistication between the "hardware" and the "software" side of US nuclear strategy. On the one hand, several R&D programs pointed directly towards the establishment of a fully equipped triad, with all the mainstay strategic systems of the 1960s soon in place: the B-52s, the Minuteman ICBMs, and the Polaris SLBM fleet. On the other hand, strategic targeting and other operational aspects remained surprisingly unaffected by these quantitative and qualitative improvements in weapons and delivery systems. For instance, the key missions of the strategic forces remained basically unchanged throughout the 1950s. They continued to include a so-called "optimum mix" of *Bravo*, *Delta*, and *Romeo* targets, in that order of priority. The only crucial difference between the emergency war plans of the early and the late 1950s was that the JCS raised its estimate of expected enemy fatalities from 60 to 425 million.<sup>40</sup>

This tremendous increase in potential US destructiveness reflected in part the exponential growth in US strategic forces during the Eisenhower presidency, which brought the total number of strategic nuclear warheads up from approximately 1,000 to 18,000.<sup>41</sup> Equally important was the total rigidity that characterized Eisenhower's plans for nuclear warfare. Throughout the era of massive retaliation, US employment policy was

guided by the crudest of all principles: everything would go at once. This applies to the first *Emergency War Plan* of 1953 as well as the first *Single Integrated Operational Plan* (SIOP) of 1960. The latter fact is quite remarkable, since the SIOP had been developed in order to adjust strategic war plans in accordance with three important developments: 1) increasing US capabilities, both quantitative and qualitative; 2) improved strategic target intelligence due to U-2 overflights over Soviet territory; and 3) the soon-expected realization of the Navy's Polaris program. That program brought to the fore an urgent need for better coordination of the strategic offensive. This resulted in the establishment of a Joint Strategic Target Planning Staff (JSTPS), which in August 1960 was tasked with compiling a National Strategic Target List (NSTL) and, on the basis of that list, preparing a SIOP for the entire strategic war effort.<sup>42</sup> In the words of one US expert, the "plan" behind the first SIOP was simplicity itself:

Everything would go at once - the handful of early missiles, and several thousand gravity bombs to be delivered by aircraft. Every major city in Russia, Eastern Europe, and China would be attacked. A number of military and economic targets - railroad marshalling yards, submarine bases, airfields, hydroelectric dams, oil fields, mines, and the like - would also be hit in what the JSTPS referred to as an "optimum mix".<sup>43</sup>

Not everybody was happy with this plan. In fact, opposition to this employment philosophy had surfaced as early as in the fall of 1957, when Army and Navy strategists began to question how the simultaneous employment of the entire nuclear stockpile could square with a strategy that, at least on paper, made a point of differentiating between different categories of strategic missions and targets. Not only did they challenge SAC's optimistic assessment that a fully disarming counterforce strike

was possible, they also claimed that the most likely employment scenario for the US strategic forces was *not* the pre-emptive counterforce strike contemplated by SAC, but a retaliatory strike *in response to a Soviet first strike that had destroyed up to 75% of the US air- and ground-based strategic forces*. On the basis of these assumptions, they called for an "alternative undertaking" that would put equal emphasis on destroying "government controls and population centers within the USSR to the extent necessary to neutralize the capabilities of the USSR to carry on the war". In addition, Army Chief of Staff Maxwell D. Taylor wanted a general reorientation of US defense policy, away from the strategic offensive in an all-out war with the Soviet Union and toward limited war options to be executed in local conflicts.<sup>44</sup>

Why was this call for a more sophisticated and flexible targeting policy ignored? One obvious reason was that it did not suit the leaders of SAC. For one thing, the introduction of high-yield thermonuclear bombs had made differentiation between *Bravo*, *Delta*, and *Romeo* missions more illusionary than real. A megaton-range H-bomb designated for a *Bravo* target would, in most instances, destroy *Delta* and *Romeo* targets as well. Had the possibility of executing a pure *Bravo* mission been more real, it is conceivable that this might have provided incentives even within SAC for a more flexible employment policy. As it was, however, SAC considered it a waste of scarce resources to develop selective options for *Delta* and *Romeo* targets that would be destroyed anyhow as part of the more urgent *Bravo* strikes. Moreover, the fact that the Soviet Union now had its own H-bombs and was on the threshold of developing an ICBM capability meant that SAC bases had become extremely vulnerable to Soviet attack. Consequently, SAC became more committed than ever to the *Bravo* mission, since its forces could not seriously hope to survive unless the Soviet ICBM force were destroyed at the very outset of a military conflict. There were

also non-military reasons. The Strategic Air Command, still very much in charge of US strategic war planning, clearly saw the Navy-Army critique as a threat to its own privileged position. Rather than accepting the call for a more flexible employment policy, SAC went on the offensive, presenting a methodical defense of counterforce targeting and trying to bring the Navy's Polaris program under its own planning directives.<sup>45</sup> In the context of this inter-service rivalry, any chances for a radical revision of the existing US employment policy were poor indeed.

SAC's opposition could have been overcome only if the Navy and Army's call for a more flexible targeting policy had won the President's support. That was not the case, however. While it is true that the first SIOP deprived the President of any real strategic choice - practically forcing him to choose between national surrender or a nuclear holocaust - it had nevertheless become the only realistic employment policy for a strategy of massive retaliation. The growth in Soviet offensive capabilities in the late 1950s meant that the United States could no longer hope to neutralize the Soviet ICBM and strategic bomber forces with a limited counterforce strike. *Some* enemy weapons were always likely to survive the attack; some of these would most certainly be launched in retaliation against US targets, many of which would be destroyed.

It goes without saying that the credibility of massive retaliation would be hard to maintain under such circumstances, since even a cataclysmic employment of US offensive forces could not be trusted to preclude the Soviets from destroying one or more American cities. With his professional military background, Eisenhower no doubt realized this.<sup>46</sup> But he also realized that the only practical solution to this problem - namely to multiply the US passive and active defense capabilities - would knock the bottom out of his economic policies. Rather than placing the

national economy in jeopardy, Eisenhower decided to put his faith in the Soviet leadership's demonstrated distaste for military risk-taking. His solution to the credibility dilemma, therefore, was simply to confirm the public image of him as a nuclear Hoppalong Cassidy - a trigger-happy President personally committed to the notion of an apocalyptic US response to even the smallest Soviet provocation. The rigidity of the SIOP reflected this situation in the most graphic sense. At the top-level meeting in which the plan's basic principles were decided, Eisenhower insisted that the whole strategic stockpile, including the new Polaris SLBMs, be employed in a single "simultaneous" blow; otherwise, the President explained, "we defeat the whole concept of our retaliatory effort, *which takes priority over everything else*".<sup>47</sup> In the words of American historian David Rosenberg, by the end of 1959 Eisenhower's concept of massive retaliation had been reduced "to a strategy of desperate resolve". As the President told his advisers, the central question was "whether or not we have the ability to destroy anyone who attacks us, because the biggest thing today is to provide a deterrent to war".<sup>48</sup>

In sum, while the basic technological features and deployment characteristics of the US strategic forces as they are known today first began to emerge during the Eisenhower presidency - as evidenced by the introduction of B-52s, ICBMs, and SLBMs, all equipped for thermonuclear warfare - these lasting acquisition and deployment achievements were not matched by a correspondingly durable legacy on the operational level. Both the doctrine of massive retaliation and its matching employment criteria were replaced, as a matter of urgency, by the new Democratic Administration under John F. Kennedy.



## Flexible response (1961-1963)

The second major shift in US nuclear policy occurred in 1961-62, when Kennedy's Secretary of Defense Robert S. McNamara made a series of defense policy announcements that in sum defined the doctrine of *flexible response*. In general, the new defense policy represented an attempt to enhance the number of options available to US policymakers under all realistic scenarios of war with the Communist world. As a first priority, this meant decreasing US reliance on nuclear weapons by increasing the conventional capabilities of the United States and its allies. Thus, rather than constantly raising the threat of a nuclear holocaust, the new Administration was hoping, in the words of President Kennedy, to deter Communist aggression by building a capability to respond in kind to all acts of war, "general or limited, nuclear or conventional, large or small".<sup>49</sup> Since the chief objective of this strategy was to minimize risks rather than costs, it was much more demanding, financially, than the New Look.<sup>50</sup> As American political scientist Loren Thompson has observed, Kennedy was the first US president to try "the rich man's approach" to operationalizing the military requirements of containment.<sup>51</sup>

At the nuclear level, increased flexibility was sought in two ways. The first reflected the frustration that McNamara and Kennedy felt with the rigidity of the US strategic war plans left over from their predecessors, most notably the SIOP. As one of his first acts after taking office, McNamara consequently ordered the war planners to increase the number of nuclear options available to the President in case of war. More specifically, the revised SIOP, approved by McNamara in January 1962 but not implemented until a year later (which explains why it has become known as SIOP-63), enhanced flexibility in five ways: 1) by discriminating between potential enemy countries, notably the USSR, China, and the East European satellites, so that war

with one would not automatically imply a US nuclear attack against all of them; 2) by categorizing targets within each country in accordance with a general Bravo, Romeo, and Delta order of priorities; 3) by complementing these targeting options with a series of preemptive and retaliatory options designed to permit freedom of choice under the particular political and military circumstances in each case; 4) by holding back a strategic reserve in order to enhance so-called "intra-war deterrence"; and 5) by protecting and improving US command and control systems to allow the United States to implement "controlled responses" to whatever actions the enemy might undertake after the first nuclear exchange.<sup>52</sup>

The two latter elements point to another important aspect of flexible response and its corresponding employment policy (as codified in SIOP-63): the quest for maximum political control over military operations. Indeed, McNamara often referred to the new strategy as "controlled response". The basic idea was that even if the idea of a limited nuclear war was logically problematic and emotionally unpleasant, it *did* make a lot of difference whether the number of US fatalities in a war with the Soviet Union would be 150 million, 75 million, or 10 million people. To enhance chances for the least unacceptable outcome, McNamara thought it imperative not only to limit the size of the initial nuclear response, but also to preserve political control over the strategic forces in the United States *as well as the Soviet Union*, so that negotiations could start and an agreement be reached to end the fighting before the full cataclysmic salvos were launched.<sup>53</sup>

As an integral part of this "damage limitation" strategy, McNamara was inclined to steer the emphasis of US strategic planning away from countervalue targets (cities and non-military economic installations) and toward counterforce targets. The SIOP-63 thus gave primacy to the latter target category. According to

Desmond Ball, its five priority missions were directed against the following types of Soviet targets:

1. Soviet strategic nuclear delivery forces, including missile sites, bomber bases, and submarine bases;
2. other elements of Soviet military forces and military resources, located away from cities;
3. Soviet military forces and military resources near cities;
4. Soviet command and control centers and systems; and, if necessary,
5. all major urban-industrial targets that were considered necessary to destroy in an all-out war.<sup>54</sup>

In other words, SIOP-63 contained the full target spectrum from pure counterforce to pure countervalue targets, but with a premium on the former category. However, it is questionable if this really meant a true revolution in US employment policy. For one thing, even the most selective option offered by SIOP-63 would have launched hundreds of warheads and killed tens of millions of people, simply because the distinction between counterforce and countervalue targets was not mirrored in real life. As long as people continued to live in the vicinity of strategic installations, this sobering result could not be averted. But there was probably another reason involved as well. According to McGeorge Bundy, neither Kennedy nor McNamara "believed in general policy papers as a way of producing specific results": as far as nuclear policy was concerned, McNamara soon came to the conclusion that it would be "much easier to control strategic procurement if he did not at the same time challenge SAC's targeting doctrine".<sup>55</sup> Thus, with this determination to gain firm control over military acquisition and deployment programs, especially in the strategic field, McNamara may have found it necessary to reduce correspondingly his influence on how the strategic forces eventually would be employed.

What impact, then, did the shift from massive retaliation to flexible response and damage limitation have on US acquisition and deployment policies? Not surprisingly, "the rich man's approach" led to increased efforts also in the nuclear field. Influenced by RAND analysts Albert Wholstetter, Bernard Brodie, and William W. Kaufmann, McNamara began to create a force posture that would provide the United States with a secure, reliable and controllable second-strike force - "the *sine qua non* of deterrence" in the RAND alumni's judgement. Wholstetter in particular had become an important influence within the Kennedy Administration because of his early and sophisticated critique of massive retaliation. In Wholstetter's view, that strategy had been based on the flawed assumption that mere possession of a significant number of H-bombs by each party would in itself create a stable balance of terror. Unfortunately, claimed Wholstetter, this was not the case: mutual deterrence was by no means "automatic". Instead, what he called the "delicate" balance of terror could be sustained only through a costly and continuous effort.<sup>56</sup> This logic was fully accepted by Kennedy and McNamara. Thus, in order to enhance the survivability of US strategic forces, they expanded the Polaris program from 19 to 41 submarines, took steps to improve US early warning capabilities, and put two-thirds of all SAC aircraft earmarked for the nuclear mission on continual ground alert (up from one-third under Eisenhower). At the same time, US offensive capabilities were increased by a decision to double the authorized size of the Minuteman force from 500 to 1,000 missiles.<sup>57</sup>

The same philosophy that underpinned these very substantial expansions of Eisenhower's original modernization program also explains why McNamara disapproved production of the B-70, the projected new high-altitude penetrating strategic bomber which the Air Force had been promoting so energetically since the late 1950s. Arguing that dropping higher-yield thermo-

nuclear bombs from an altitude of 70,000 feet was contradictory to the new counterforce/no cities-strategy, and that the aircraft would be flying too high and too fast to conduct pin-point attacks against mobile or hardened targets, McNamara cancelled the \$15 billion B-70 program in favor of a larger Minuteman force - the most formidable threat to hardened Soviet targets available at the time.<sup>58</sup> In similar fashion, the Kennedy Administration in 1962 secretly decided to withdraw the *Thor* and *Jupiter* medium-range missiles from Western Europe because their well-known vulnerability made them look like first-strike weapons.<sup>59</sup>

Finally, reflecting his and Kennedy's obsession with political control, McNamara allocated funds for an upgrading in US control, command, and communication capabilities. For instance, he established the so-called Post-Attack Command and Control System (PACCS), which in 1962 provided the President with a flying command post from which to control strategic forces in a nuclear war. All of these measures were expensive. Thus, despite the substantial build-up in US conventional forces after Kennedy took office, the relative costs of the strategic forces programs remained high. Throughout McNamara's tenure in office, strategic weapons systems claimed nearly one-third of total US defense expenditures, the Vietnam War effort excluded.<sup>60</sup>

In sum, the years 1961-63 represented a breakthrough in the US quest for strategic flexibility and control - if not in the sense that these objectives were actually achieved at the time, so at least in the sense that they were generally accepted by the political-military leadership and pursued with unreserved presidential support. The Administration's acquisition and deployment policies were basically consistent with the new doctrine. However, the "no-cities" approach suffered from a particular ambiguity caused by the fact that the forces needed

for first-strike and second-strike counterforce options were exactly the same. Since there were no objective criteria at hand for discriminating between them, the "counterforce/no-cities" strategy was almost certain to generate Soviet fears that the United States was in fact striving for obtain a first-strike capability. The emphasis on "damage limitation" could only deepen those concerns, since there existed no better way to limit damage on US society than to strike the offensive forces of the Soviet Union first.

### Assured destruction (1964-1973)

McNamara also presided over the third major shift in US strategic nuclear doctrine, which took place during Lyndon B. Johnson's time in office. This shift had less to do with the priorities of the new president than with McNamara's own growing doubts about the strategy he had done so much to develop and implement. As early as in the summer of 1962, McNamara began to express uncertainty about a crucial premise for the damage limitation strategy, namely that the Soviet leadership actually *shared* the US assessment that it was better to target military installations than cities, and that it would be counterproductive, if not complete madness, to use all its strategic forces in a single cataclysmic attack. In fact, neither the configuration of Soviet strategic forces nor its strategic doctrine, as known in the West at the time, gave any reason to expect the Soviet Union to mirror US strategy in a nuclear war. This observation raised the possibility that the United States, by strongly committing itself to damage limitation and the counterforce/no city strategy, was inadvertently undermining rather than strengthening deterrence. According to this argument, Soviet expectations of a very limited US response could increase Moscow's temptation to strike first, with all its nuclear might, in an attempt to knock out as many US offensive weapons as

possible and paralyze the US leadership before it could order a second, more devastating attack. A variant of the same argument was that the increased US counterforce capability might be perceived by the Soviet leadership as an intolerable threat to its offensive forces. In turn, that fear could stimulate a "better-using-them-than-losing-them" sentiment among decisionmakers in Moscow, and provide incentives for a Soviet preventive first strike.<sup>61</sup>

In addition, McNamara realized that the damage limitation strategy would be financially more burdensome than expected. His pessimism was based partly on the observation that the Soviet Union had responded to the new US strategy by dispersing its ICBMs to hardened silos and stepping up its SLBM program. Thus, Moscow could always find relatively cheap countermeasures to expensive US modernization efforts,<sup>62</sup> which meant that a credible US counterforce capability could be maintained over time only through an excessive build-up of US offensive strategic forces. In fact - and this appears to have been even more disturbing to McNamara - the Air Force was showing signs of using the no-cities/counter-force strategy as a criterion for force planning. The result was an endless stream of costly requests for more "counter-force" weapons, primarily Minuteman ICBMs and the supersonic RS-70 strategic bomber.<sup>63</sup>

There were also signs that the European allies were unhappy with flexible response, which gave rise to suspicions that the United States was considering revoking its nuclear guarantee toward Western Europe. Most European NATO leaders believed that the US extended deterrent depended on a clear US commitment to meet a Soviet conventional attack against Western Europe with a strategic nuclear response. If flexible response meant less US reliance on nuclear weapons and an operational preference for the least damaging options, the same Europeans feared that Moscow would conclude that there could be more to

gain than lose from launching a military attack on Western Europe. Thus, when McNamara first presented the "no-cities" strategy to his European NATO colleagues in May 1962, the audience demonstrated a total lack of enthusiasm. From that moment on, European reactions were permeated by mistrust, fear, and a feeling of being left in the lurch by the USA.<sup>64</sup> To make matters worse, the British and French governments felt that the emphasis on damage limitation and "no-cities" targeting represented an indirect criticism of their own national defense policies. If small nuclear forces like theirs were to deter a superior nuclear power like the Soviet Union, this could be done only by posing a threat of automatic retaliation against Soviet cities.<sup>65</sup>

A final concern that made McNamara lose faith in damage limitation stemmed from the inadequacy of US strategic defense systems. More will be said about the status of these systems later on. Suffice it here to say that McNamara found the existing defense systems totally inadequate - a judgement which in turn led him to conclude that, even under the most favorable circumstances, a Soviet nuclear attack would cause American casualties "counted in the tens of millions". On that basis, he told the Congress in 1963 that he did not share the opinion that the United States could win a nuclear strategic war "in the normal meaning of the word 'win'."<sup>66</sup> By admitting that much, McNamara was in reality beginning to retreat from controlled response and damage limitation, since that strategy had always been based upon the assumption that US superiority could be used to guarantee, not only a favorable, but indeed an *acceptable* outcome of a nuclear war with the Soviet Union. With a minimum loss of tens of million people, that illusion was gone.<sup>67</sup>

Profound changes in the strategic nuclear environment also helped to dampen the traditional US optimism that victory was



possible even in the nuclear age. When the Kennedy Administration came to power in 1961, the Soviet Union had at its disposal only some 200 strategic bombers, and no ICBMs or SLBMs. In 1967, when McNamara resigned, the Soviet ICBM force was approaching numerical parity with the United States, and its growth rate was far higher - in fact, in April that year, the US Minuteman force reached its maximum authorized level of 1,000 missiles and would henceforward be subject to qualitative improvements only. In addition to the achievement of practical parity in ICBMs, the mid-1960s saw the Soviet military with more ICBMs in hardened silos, a growing SLBM force, and a possible lead in technology for anti-ballistic defense. Even if the United States continued to enjoy a considerable lead in strategic bombers and SLBMs, the aggregated effect of these Soviet achievements was that the United States for the first time faced an opponent whose capability to devastate American society could not be offset by any quantitative build-up of US offensive forces. Thus, unless US scientists could make some revolutionary breakthrough in strategic defense - a possibility which no one in the Pentagon was willing to count upon - it would be practically impossible for the United States to limit the damage of a Soviet nuclear attack, at least not to an extent that would make it possible to present the final outcome of the war as a "victory". As McNamara pointed out in his last annual defense report, the United States "should be under no illusion that 'Damage Limiting' measures, regardless of how extensive they might be, could, by themselves, change this [mutual hostage] situation."<sup>68</sup>

This dispiriting acknowledgement of US vulnerability gave birth to a new strategic concept known as *assured destruction*.<sup>69</sup> Since there was no way in which the two superpowers could effectively destroy or shield themselves against each other's offensive strategic systems, McNamara concluded that the only rational strategy for the United States would be to adopt a

doctrine and force posture which would help to make the Soviet leadership understand and accept the existing mutual hostage situation. That could best be achieved by building a US strategic force that was capable, even under the most unfavorable circumstances, to imposing *unacceptable damage* upon the Soviet Union. In his own definition, a US capability

to destroy, say, one-fifth to one-fourth of her [the USSR's] population and one-half of her industrial capacity would serve as an effective deterrent. Such a level of destruction would certainly represent intolerable punishment to any 20th century industrial nation.<sup>70</sup>

Thus, assured destruction was reminiscent of massive retaliation in the sense that both strategies emphasized the US will and capability to utterly destroy the Soviet Union should it ever dare to initiate hostilities against the West. McNamara's explicit threat of killing 20-25% of the Soviet population also implied a renewed emphasis on countervalue targeting, and a corresponding de-emphasis on damage limitation. But a closer look also reveals considerable discrepancies. First of all, unlike massive retaliation, assured destruction did not presuppose US superiority: it was *founded on the assumption that practical superiority was no longer feasible*. At the same time, however, McNamara had become convinced that, for the sake of deterrence, mutually recognized parity was enough. Secondly, and contrary to the popular myth, assured destruction did *not call off the quest for flexibility and control which had characterized the first of McNamara's strategies*. On this important point, McNamara still staged a revolutionary departure from massive retaliation.<sup>71</sup>

Evidence of this can be found in the Johnson Administration's nuclear employment policy. Despite the shift at the declaratory level away from counterforce and damage limitation, to em-

phasis on countervalue targeting and assured destruction, *no similar shift took place at the operational level*. In all important respects, US war plans remained essentially unchanged between 1962 and 1968 - in fact, they were not subjected to fundamental revision until 1974-75. The explanation was *not* that the Pentagon ceased to review the SIOP: it was constantly reviewed. Rather, this lack of change indicated that McNamara wanted to preserve the gains that had been won during the Kennedy years in terms of control and flexibility. There may also have been a more practical side to this, however. The criterion for assured destruction of the Soviet Union which was cited above required only a small portion of the total US stock of strategic weapons. Thus, even if only 7% of all US ICBMs in 1968 were aimed at countervalue targets, that did not in itself contradict the increased emphasis on such targeting implied by the doctrine of assured destruction.<sup>72</sup>

All in all, the lack of SIOP revision should probably not be seen as evidence that the shift from flexible response to assured destruction was a matter of words only, without operational or other practical implications. This conclusion is confirmed by the direction taken in US acquisition and deployment policies during the final years of McNamara's tenure as Secretary of Defense. A striking fact about that period was that, by 1967-1968, the quantitative build-up of America's strategic nuclear forces had halted, to be replaced by a new premium on qualitative improvements.<sup>73</sup> This decision obviously reflected the assumption that it was futile to seek superiority, and that the capacity to inflict intolerable damage upon the Soviet Union could be maintained at the current force level.

Less discernible, but equally important, was the decreased emphasis on counterforce. Having first adopted the logic (if not the acronym) of mutually assured destruction, McNamara became concerned that an excessive increase in US counterforce

capability could create Soviet fears of a US first strike, and thus undermine the mutual hostage situation. Together with the new emphasis on countervalue targeting, this concern led him to choose a MIRV design for the new Minuteman III missile that, according to American political scientist Loren B. Thompson, "had limited but not maximum obtainable counterforce potential".<sup>74</sup> Likewise, he cancelled the production of Mark 17, a re-entry vehicle developed for use as a hard target killer on both the Poseidon and Minuteman missiles. In a similar vein, the Pentagon's justification of the MIRV program - the single most important strategic-technological development in the 1960s - shifted from emphasizing its counterforce potential to emphasizing its capability to penetrate Soviet anti-ballistic defense systems. Whether the US military really abandoned the original rationale for wanting MIRV is an open question. What is clear, though, is that the new official justification was fully consistent with the shift in strategy, since the existence of an effective ABM system around the major Soviet cities and industrial centers would undermine the US assured destruction capability.

McNamara's conversion from "flexible response" to "assured destruction" would have a tremendous impact on the course of US nuclear policy for the remaining twenty-five years of the Cold War. The self-imposed quantitative limits for the US strategic forces set in 1966-67 on the basis of his "assured destruction" criterion, would remain intact well into the Reagan presidency. Furthermore, his negative conclusions with regard to both the technological feasibility and stability implications of ballistic missile defense were enshrined in the ABM Treaty of 1972, which not only was adhered to by the Ford and Carter Administrations but also helped to keep Reagan's SDI program within rather strict limits. However, as far as nuclear doctrine and employment policy are concerned, McNamara's debunking of the "counterforce/no-cities" approach had the unintended

consequence of calling off all serious strategic discourse in the United States for almost a decade. As noted by American historian Marc Trachtenberg, after the mid-1960s, nuclear strategy appeared to have hit a dead end.<sup>75</sup> No doubt, the Johnson Administration's official blessing of the mutual hostage relationship was the primary reason for that development. After all, "assured destruction" was founded on the assumption that, in a world free of ballistic missile defense, essential parity in strategic offensive capabilities would *in itself* ensure stability and deter war. Under such circumstances, there hardly any tasks remained for the strategists.

### Escalation control (1974-79)

The fourth significant shift in US nuclear strategy was announced by Nixon's second Secretary of Defense, James R. Schlesinger, in April 1974. Some of the announced changes had been under consideration for almost four years, but nothing substantial came out of Nixon's desire for more strategic options until after the 1972 presidential election.<sup>76</sup> Thus, while it is true that Nixon and his advisers were eager to show that they felt uncomfortable with assured destruction, and occasionally signalled that they wanted to infuse more flexibility into nuclear decisionmaking, little was actually done during their first term beyond these very general declaratory statements. Indeed, when in March 1971 Nixon's first Secretary of Defense Melvin Laird announced a change of nuclear doctrine from Assured Destruction to what he called "Strategic Sufficiency", it was evident that the transformation represented a shift of terminology only, not substance.<sup>77</sup>

Why, then, was the first Nixon Administration so slow in addressing the problems of Assured Destruction?

One reason was the Vietnam War, which absorbed resources and stole political attention from the strategic dilemmas of the US-Soviet relationship. The search for a wider range of options was also hampered by technological restraints, such as lack of sophisticated C<sup>3</sup> capabilities and the highly accurate warheads needed for realistic counterforce operations.<sup>78</sup> Most important, though, was the pace of the Soviet strategic build-up, which made US decisionmakers less concerned about the adequacy of their own strategy than about the prospect of Soviet superiority in offensive nuclear weapons systems. To avoid a shift in the overall strategic balance in favor of the Soviet Union, the Nixon Administration had to choose between two radically different policy options: Either to significantly step up US strategic R&D and production programs in order to nullify recent Soviet achievements, or to attempt to cap the ongoing deployment of new Soviet offensive systems. Since the domestic political situation precluded the first alternative - because of the general anti-militarist sentiments in the US population during the final phases of the Vietnam War, and because of the general economic priorities of the 93rd and 94th Congress - Nixon decided to go for the latter.<sup>79</sup> The principal instrument in this regard was the Strategic Arms Limitation Talks (SALT), which in 1972 led to the signing and ratification of two important bilateral agreements with the Soviet Union: the ABM Treaty and the SALT I "interim" Treaty. I will discuss their content and broader implications later on. What matters most in this context is that the focus on strategic arms control may go a long way toward explaining the absence of doctrinal changes during the first term of the Nixon presidency.

Due to the Watergate scandal, Nixon's second term was almost totally dominated by domestic developments. In the shadow of those, however, the Administration began a thorough review of US nuclear policy. The aim of that review was two-fold: First of all, it represented an attempt to induce, once again, more

operational flexibility and political control into the decision-making process concerned with employment of nuclear weapons. A second objective was to adjust acquisition and deployment policies to the, in a US perspective, worrisome changes taking place in the strategic environment, with detrimental effects on both central and extended deterrence. The US deterrent seemed at risk for at least three reasons: the arrival of true strategic parity between the superpowers; the prospect of US ICBM vulnerability following from an unanticipated early Soviet breakthrough in MIRV technology; and the final collapse of Flexible Response even in the European theater, where Western escalation control capability was rapidly yielding to the Soviet bloc as a consequence of its development of new inter-medium range ballistic missiles (SS-20, SS-21, SS-22), new short-range theater weapons, and the new medium range "Backfire" bomber.<sup>80</sup>

The effort to arrest these negative trends was directed by the new Secretary of Defense, James R. Schlesinger. As a defense analyst at the RAND Corporation in the 1960s, Schlesinger had built up for himself a record as a strong advocate of counterforce targeting and controlled response. The crux of the so-called "Schlesinger Doctrine" was in accordance with that position.<sup>81</sup>

As outlined in the top-secret National Security Decision Memorandum (NSDM)-242 - signed by Nixon in January 1974 and thereafter "leaked" by Schlesinger in suitable portions in his declaratory announcement of the new doctrine - US strategic forces had one paramount task: to deter a nuclear attack on the United States and its allies. On this point there was no disagreement with the priorities made under assured destruction or, for that matter, massive retaliation. What changed in US nuclear policy in the mid-1970s was rather the operational tasks that were to guide the employment of US offensive strategic forces

in a post-deterrence situation. More specifically, NSDM-242 directed that the revised SIOP (designated SIOP-5) should develop plans for attacking *the full spectrum of Soviet and Warsaw Pact forces*, either in a single blow or in a number of increasingly severe strikes that would help to neutralize those elements of the enemy's forces that were considered most threatening in a given political-military context. A second targeting priority was *Soviet postwar recovery assets* - that is, the economic and political infrastructure needed by the Soviet leadership in order to retain power and rebuild Soviet society after a nuclear exchange with the United States. Again emphasis was put on flexibility, so that US policymakers should have the freedom of choosing the kinds of recovery assets which they felt best suited to their political war objectives.<sup>82</sup>

In addition to putting renewed emphasis on the targeting of Soviet military forces and recovery targets, the Nixon Administration gave priority to the development of so-called "limited employment options" that would enable the United States to conduct selected nuclear operations in case of war. On the latter point, the Schlesinger Doctrine more or less echoed the position of the Kennedy Administration in 1961-1963, before McNamara had begun backtracking from flexible response.

However, due to the dramatic changes that had taken place in the strategic environment since the early 1960s, it was not possible simply to adopt all the doctrinal positions and employment priorities of flexible response. Instead, Schlesinger's quest for increased operational flexibility and political control led to the introduction of several new strategic concepts and operational tasks. First of all, he introduced the principle of *escalation control*, which held that the National Command Authorities should be able to execute their favored nuclear options in a controlled fashion throughout a strategic nuclear exchange.



Secondly, NSDM-242 exempted population as such from the targeting lists - a fact that Schlesinger and other official spokesman were careful to stress to the public. Due to the limited number of pure countervalue targets in the SIOP-63, and the large number of civilians that would be killed if only the counterforce options of that plan were executed, the practical importance of this action may not have been very great. But it certainly sent an important symbolic signal to the Western public and Soviet authorities alike.

Thirdly, it determined that certain vital enemy targets - such as oil installations, industrial plants and Soviet centers of political-military control - should be held "hostage to subsequent destruction" for the purpose of intra-war deterrence and intra-war bargaining. The revolutionary idea behind the latter decision was that escalation control meant more than the capability to match and overwhelm your opponent at all conceivable levels of hostility; equally importantly, it presupposed the capability to shield, on a temporary basis, some enemy targets whose survival were deemed crucial to the possibility of negotiating a peaceful settlement of the conflict.

Finally, the Schlesinger Doctrine also included the notion of a *secure reserve force* - that is, an arsenal of practically invincible weapons, notably the SLBMs, that could survive all waves of Soviet attack and give US authorities a superior post-war negotiation position.<sup>83</sup>

These changes were implemented both at the declaratory level and at the employment level (that is, in SIOP-5). At least in that particular sense, the Schlesinger years were characterized by a rare consistency between US strategic doctrine and targeting policy. Paradoxically, the unprecedented openness about US intentions in case of nuclear war confirms that, even for a nuclear "war fighter" like Schlesinger, the immediate political-

strategic value of US nuclear forces far outstripped their potential operational value in any future war. As he later told the author, the chief purpose of his frankness was not to initiate a doctrinal discussion with his Soviet counterparts or to give the war planners in Moscow an easier job, but simply to make the US deterrent more credible. "My primary ambition", the former Secretary of Defense said, was "to manipulate the minds of the Soviets".<sup>84</sup>

That ambition arose from a growing fear within the US national security establishment that the Soviet leaders might not, after all, accept the idea of a strategic stalemate. In the judgement of US experts at the time, the immense increase in Soviet offensive strategic weapons during the late 1960s and early 1970s had brought the Soviet Union to the verge of acquiring a real first-strike capability against the US ICBM force.<sup>85</sup> Against this backdrop, American analysts began to take a second look at the doctrinal statements of Soviet military and political decision-makers, an exercise which brought many of them to the conclusion that Moscow had never accepted the logic of mutual assured destruction (MAD). Instead, Soviet nuclear strategy emerged as a war-fighting strategy, based on the assumption that it was indeed possible to "win" a nuclear war - provided, of course, that one's acquisition, deployment and employment policies were shaped with this dark objective in mind.

If this interpretation of Soviet strategy and weapons programs was correct, then US targeting policy and force posture could be seen as utterly inadequate. At least, this was how Schlesinger and his Pentagon assistants came to look at it. In their view, the new strategic realities made it imperative for the United States to possess counterforce capabilities similar or superior to those emerging on the Soviet side. Moreover, the United States would have to acquire the operational flexibility and control capacity needed for nuclear war-fighting; otherwise, the Soviets would

simply cease to fear the consequences of nuclear war. To bolster the US deterrent, therefore, it was necessary to adopt a nuclear doctrine and force posture that could help to "manipulate the minds of the Soviets" - in other words, to convince them that whatever level of nuclear war-fighting they initiated, they would find that US capabilities surpassed their own.

The Schlesinger Doctrine was an attempt to address the problems raised by the changes in the strategic environment and the assumed asymmetry between US and Soviet nuclear strategy. We have already established that there was a remarkable degree of consistency between the Schlesinger Doctrine and US nuclear employment policy at the time. Now we should ask whether this holds true also with regard to acquisition and deployment policies.

The answer is both yes and no. On the one hand, these Administrations took important steps towards modernizing and augmenting the offensive strategic capabilities of the United States, including its counterforce capability. This was done in part by an extensive MIRVing of the ICBM force - a relatively cheap way of increasing US offensive capabilities without violating the SALT 1 agreement - and in part by funding an R&D program for a new "experimental" ICBM with a radically improved counterforce potential (the Mark 21 or "MX" missile).<sup>86</sup>

The MIRVing of the Minuteman force began in 1970, and continued throughout the Nixon-Ford Administrations. It is noteworthy that this development went on unaffected by the signing of the ABM Treaty, even though McNamara had used the emerging Soviet ABM capability as the principal justification for the MIRV program. That the MIRVing *accelerated* after the ABM problem had been solved, gives further evidence of the shift toward counterforce targeting during the Nixon-Ford

years. All in all, the MIRVing of ICBMs and SLBMs led to a fourfold increase in operational ballistic missile warheads - up from a total of 1,710 in 1970 to more than 7,000 warheads a decade later. In addition, the warheads themselves were made more efficient against hardened targets.<sup>87</sup> These quantitative and qualitative changes were a necessary condition for the more extensive and flexible targeting options developed under the Schlesinger Doctrine.

In similar fashion, the doctrinal emphasis on a secure reserve force was supported by Nixon's prior decision, in early 1972, to approve development and production of a new generation of strategic submarines, the *Trident* class, as well as two alternative ballistic missiles, the Trident I and II, for deployment on the new vessel. Because of the higher yield and accuracy of these weapons systems, especially Trident II, the US SLBM force would for the first time obtain true counterforce strike capability. This meant that the United States, at least in theory, would be able to launch its entire ICBM force and still maintain a secure reserve force capable of executing follow-up attacks against the whole spectrum of Soviet targets, including missile silos and hardened C<sup>3</sup> installations.<sup>88</sup>

The quest for greater flexibility was supported also by several decisions taken in order to strengthen the survivability and offensive capabilities of the strategic bomber force. As early as in 1969, Nixon's first Secretary of Defense, Melvin Laird, cancelled the multi-purpose FB-111 aircraft - McNamara's pet project - whose deployment had been resisted by SAC because of its alleged vulnerability to Soviet air defense. In its place, Laird approved an expensive R&D program for a new, high-performance penetrating bomber, soon to be known as the B-1. The proposed upgrading of the bomber leg was fully consistent with the quest for more flexibility and control. For instance, strategic bombers were commonly regarded as the superior

choice for "search-and-destroy" missions against targets that either survived the preceding ICBM strike or were held in reserve for intra-war deterrence, such as mobile weapons systems and C<sup>3</sup> units. In addition, the capability of the B-52s to penetrate Soviet air defense was enhanced by the deployment of the AGM-69A Short Range Attack Missile (SRAM), which made it possible for the strategic bombers to destroy enemy targets from a 300 km standoff position.<sup>89</sup>

Obviously, follow-up and standoff missions of this sort would be impossible to execute unless a large portion of the strategic bombers were able to survive a Soviet first strike. Thus, Laird also took steps to enhance the invulnerability of the bomber leg. He implemented the so-called *satellite basing program*; this dispersed the SAC force over a much larger number of air bases, thereby increasing the number of targets which a Soviet SLBM attack would have to destroy. Because the number of aircraft stationed at each base went down, satellite basing also helped to increase the speed by which the SAC force could become airborne in an emergency.<sup>90</sup>

And finally, the doctrine of escalation control was supported by a series of decisions aimed at providing US decisionmakers with what Laird described as a "reliable, flexible and survivable command and control system".<sup>91</sup> Among the measures implemented were the *Command Data Buffer System* which reportedly cut re-programming time for the Minuteman force from 36 hours to 25 minutes; the *Fleet Satellite Communications System*, and a new *Advanced Airborne National Command Post*. In sum, these systems made it harder for the Soviets to destroy the political and military command structure of the United States. In consequence, they would help the National Command Authorities to perform their predestined roles even after a Soviet first strike.<sup>92</sup>

The major problem with the Schlesinger Doctrine in terms of consistency was that, at the time it was announced, few of the above-mentioned acquisitions had reached the stage of production, not to mention deployment. Hence, in terms of military hardware, the Doctrine was in many ways premature: it presupposed capabilities that as yet were non-existent. At the same time, it represented a long over-due revision of the assured destruction/strategic sufficiency doctrines, and helped to speed up those improvements on the hardware side necessary to make it a credible alternative to these outdated strategies. Ironically, perhaps, by the time the projected improvements were beginning to materialize, Schlesinger's successors were not only busy refining his doctrine but had also decided that its credibility hinged on further qualitative advances in the supporting hardware.

### The countervailing strategy (1980-1991)

At the declaratory level, US nuclear policy exhibited an extraordinary degree of continuity from 1974 to the end of the Cold War in the early 1990s. The same conclusion seems to hold true also with regard to how, in case of general war, US authorities were planning to employ their nuclear forces. Even though both Carter and Reagan accused their immediate predecessors of having neglected the growth in Soviet nuclear capabilities, neither president initiated any radical changes in US nuclear doctrine and nuclear weapons employment policy. On the contrary, just as the Carter Administration's review of US nuclear strategy led to a confirmation of the Schlesinger Doctrine, the Reagan Administration was quick to adopt the targeting priorities and operational plans of the Carter Administration. Indeed, US strategic nuclear doctrine and employment policy was not to undergo any major revision until *after* George Bush had left office in early 1993.<sup>93</sup>

The quintessence of the doctrines and employment policies of the Carter, Reagan and Bush Administrations was the same as it had been under the second Nixon and Ford Administrations: escalation control. Now referred to as *the countervailing strategy*, official US nuclear strategy continued to stress such crucial elements of the Schlesinger Doctrine as selective strike options and intra-war deterrence. It also confirmed the position that, in order to bolster the US deterrent, it was necessary to establish a credible counterforce capability, a secure strategic reserve force, and a survivable C<sup>3</sup> network. As with the Schlesinger Doctrine, the main tasks of US strategic forces were defined as deterring nuclear war, and, should deterrence fail and war break out, enforcing an early termination of the conflict on terms favorable to the United States. These tasks and objectives were central themes in Presidential Directive (PD)-18 of 24 August 1977, the Carter Administration's major overall statement on US national strategy toward the Soviet Union. They were confirmed and elaborated upon in PD-53 of November 1979, which committed the government to develop telecommunication facilities adequate for maintaining effective political control "during and after any national emergency"; in PD-58 of June 1980 on "Continuity of Government" in a nuclear war; and in PD-59 of July 1980 which defined the Administration's nuclear weapons employment policy.<sup>94</sup>

Rather than defining a new US strategic doctrine, these documents actually helped to refine the strategy of escalation control developed by Schlesinger. In the words of Secretary of Defense Harold Brown, PD-59 did not represent "a radical departure from US strategic policy over the past decade or so." Instead, it restated more clearly "the same essential strategic doctrine [...] in the light of current conditions and current capabilities."<sup>95</sup> What had changed in the past ten years, Brown explained, were Soviet offensive capabilities, Soviet doctrine, and Soviet C<sup>3</sup> capabilities. The capabilities had grown, and the doctrine had

become increasingly focused on what Marshal Ogarkov and other authoritative Soviet sources systematically referred to as "objective possibilities for achieving victory" in a prolonged nuclear war. Faced with these realities, the Carter Administration concluded that the best way to keep the Soviets from believing that they could gain anything from starting a nuclear war - limited or unlimited, short or prolonged - was for the United States to make deadly serious preparations for such scenarios itself.<sup>96</sup>

The crucial challenge was to decide what doctrine, force posture, and C<sup>3</sup> facilities could best enable the United States to get this crucial message through to the Soviet leadership. As Brown saw it, the answer was *to make US doctrine and AED policies more like those of the Soviet Union*. The best way to enhance the credibility of the US nuclear deterrent would be by demonstrating readiness and capability to outclass the Soviets on their own turf - that is, to prevail in a nuclear war.<sup>97</sup>

Moreover, Soviet leaders were more likely to be deterred if they learned that the United States was aiming part of its strategic forces at targets crucial to their own ability to retain power after the shooting had stopped. In Brown's words, "whatever it is that the Soviet leadership counts as most important to it, would be threatened and [...] destroyed" by US forces in the event of nuclear war. As examples of such first-priority assets, Brown mentioned Soviet industry, population centers, military forces, and - as the only novel target category - centers of political-military decisionmaking.<sup>98</sup> The latter category was included on the first-priority target list under the assumption that, more than anything else, the Soviet leadership feared the destruction of institutions and communication networks necessary for maintaining the Communist Party's control of the USSR.<sup>99</sup>



Another novelty in PD-59, not explicitly mentioned by Brown, was that US strategic nuclear forces would be aimed also at forward-based Soviet conventional forces. According to General William Odom, who in his capacity as military adviser to Zbigniew Brzezinski wrote most of PD-59, the aim was to destroy some particularly valuable units of these forces in the initial stage of a military conflict. As he later told this author, the underlying idea was that the Soviet leaders would be much more sensitive to such assaults on their military "base", in the marxist sense of the word, than to the firing of, say, a nuclear warning shot high above the ground at some remote place far away from the actual fighting.<sup>100</sup>

The tasks and priorities identified in PD-59 were conscientiously echoed in the Carter Administration's targeting plans. For instance, the 1980 Single Integrated Operation Plan, SIOP-5D, identified more than 700 "political" targets - including party headquarters, government administrative centers, and underground shelters for key Soviet officials. By placing this target category at the top of the priority list, Carter's war planners took a major step towards enabling the US president to engage in a protracted limited nuclear war with the Soviet Union. The second most important target category was Soviet strategic nuclear systems; approximately 2,000 such targets were listed, including 1,400 ICBM silos. In third place, to help make possible the attack against the non-strategic military base, a total of more than 3,000 airfields, Red Army divisions, supply depots, and logistic centers were picked out for possible destruction.<sup>101</sup>

Despite their vociferous criticism of Carter's defense policies during the 1980 presidential campaign, Ronald Reagan and his advisers soon discovered that they had few disagreements with their predecessor on nuclear policy matters. In October 1981, President Reagan approved two important National Security Decision Directives, NSDD-12 and NSDD-13, that confirmed

the principal tasks, priorities, and doctrinal conclusions of PD-53 and PD-59. Reagan's endorsement of the countervailing strategy was evidenced also by the content of the new Nuclear Weapons Employment Policy (NUWEP-82), signed by his first Secretary of Defense, Caspar Weinberger, in July 1982. No parts of this document have yet been made public, but it is widely believed to have reiterated the content of SIOP-5D.<sup>102</sup>

Apparently, there were only a few significant differences between the doctrines and nuclear weapons employment policies of the Carter and Reagan-Bush Administrations. Starting with the doctrines, the years 1981-1992 saw a marked renaissance of the notion of the 1950s and early 1960s that it would be possible for the United States to win a nuclear war. In contrast to PD-59, which rejected the possibility of such a victory and, in Brown's words, only sought to convince the Soviets that they, too, were deprived that possibility, the official position of the Reagan-Bush Administrations was that the United States must obtain the capability of *prevailing* in a nuclear war - that is, winning. Closely related to this, the Reagan Administration also endorsed the possibility of a *protracted nuclear conflict* between the superpowers, and asked Congress for money to build strategic forces and C<sup>3</sup> networks that could be trusted to function in a prolonged nuclear war of up to 180 days.<sup>103</sup>

As for the possible employment of nuclear weapons, the SIOPs of the Reagan and Bush Administrations (SIOP-5F to -6F) differed from the last Carter SIOP (SIOP-5E) in allocating far more weapons for the tasks of destroying Soviet mobile targets (especially SS-20s, SS-24s and SS-25s) and hardened Soviet leadership bunkers. Some 4,000 relocatable targets and more than 1,500 leadership targets are reported to have been included in the first version of SIOP-6.<sup>104</sup> Both of these target categories were consistent with the new doctrinal emphasis on protracted nuclear war-fighting.

These differences should not be exaggerated, however. Rather than representing a sharp break with the past, the Reagan Administration's talk of victory and protracted nuclear war in many ways brought the countervailing strategy to its logical conclusion. After all, the basic principal of that strategy had been that, in order to deter the Soviets, the US should always demonstrate the same war-fighting capabilities as the Soviets themselves were demonstrating. As long as the Soviet military and political leadership appeared to operate on the assumption that victory was possible, even in a protracted nuclear conflict, it followed that US authorities should adopt the same position, only with more potent strategic forces in reserve. Thus, in the end, the principal difference between the Reagan and the Carter Administrations' versions of the countervailing strategy was that the former was more ambitious on the part of the United States. Whereas Carter had operated on the basis of a slight over-all US edge in strategic forces,<sup>105</sup> Reagan apparently believed in the possibility of moving ahead from that favorable position toward a situation of US strategic superiority.<sup>106</sup>

In all likelihood, the Reagan Administration's quest for strategic superiority was the major causal factor behind its excessive build-up of US conventional and strategic nuclear forces, particularly in 1981-1984. But again we should note that the build-up had been started by Carter, and that most of the new strategic capabilities of the 1980s were a result of decisions made *before* Reagan took office. For instance, such crucial decisions as to produce and deploy the MX missile, the Trident submarine, and the nuclear-capable Air-Launched Cruise Missile (ACLM) for the B-52 bomber force were all made in 1977-79. Together, they resulted in a significant modernization of all three legs of the strategic triad. In this way, the United States was able both to maintain an assured destruction capability, and - thanks to the MX and Trident programs - to enhance substantially its counterforce capability. In addition, bombs and

warheads more capable of penetrating hardened Soviet targets were developed and deployed. Carter also approved R&D funding for the "stealth" aircraft program, an effort which eventually led to the production of the B-2 bomber. In similar fashion, Carter was responsible for the highly controversial decision to deploy new inter-medium range tactical nuclear missiles in Western Europe, the Pershing II and the ground-launched cruise missile (GLCM). In order to increase the operational flexibility and the overall military capability of the West, Carter also put pressure on the European NATO countries to commit themselves to a 3% annual real growth in defense spending.<sup>107</sup>

These achievements do not mean that there were no differences in the strategic defense modernization programs of the Carter and Reagan Administrations, however. Besides the latter's willingness to spend *more* money on almost every program, there were in particular three noteworthy differences:

The first was that Reagan revised his predecessor's decision of June 1977 *not* to produce the B-1 bomber. A number of factors had helped Carter to reach that conclusion, but, in the last analysis, the cancellation was based on his doubts about the penetrating bomber mission. Given the constant improvement of Soviet air defense capabilities, Carter accepted the judgement of many civilian experts that it would be increasingly difficult for a large, low-altitude aircraft like the B-1 bomber to reach its targets. Carter decided instead to spend the taxpayers' money on a more cost-effective and, as he saw it, more "technically sweet" weapons system: the ALCM. Not only was it far less expensive to develop and deploy, it was also thought to be far more capable of penetrating Soviet air defense. In combination with the B-52s, which would be used as standoff platforms, ALCMs were intended to guarantee a powerful and survivable strategic bomber force in another ten to twenty years.<sup>108</sup>

Reagan's decision to re-start the B-1 program may to some extent be explained in terms of bureaucratic politics and the political momentum created by his own campaign promises. However, it was consistent also with the modifications that his Administration initiated with regard to doctrine and employment policy. If the aim was superiority - real or apparent - it made good sense to deploy a weapon that would force the Soviets to put more of its scarce resources into defensive rather than offensive capabilities.<sup>109</sup> When added to the B-52 force, the higher speed and much better low-altitude performance of the B-1 aircraft (or, more accurately, the B-1b "stealth" version of it) would enhance the operational flexibility of US strategic forces. These characteristics were particularly relevant in light of the doctrinal emphasis on prevailing in a protracted nuclear conflict. Under such planning directives, the potential value of a re-targetable penetrating bomber force with a short escape time seemed much more obvious than it had under the scenarios contemplated by the Carter Administration. In similar fashion, acceleration of B-2 "stealth" bomber production was logical in light of the high priority which SIOP-6 attached to destruction of relocatable targets and hardened leadership bunkers.<sup>110</sup>

Having approved plans to build and deploy a total of 100 B-1b and 132 B-2 bombers, with a price-tag of respectively \$35 and \$80 billion per program,<sup>111</sup> Reagan went on to modernize the sea-based component of the triad by accelerating development of the counterforce-capable Trident II (D-5) SLBM.<sup>112</sup> He also decided to equip US attack submarines and surface vessels with nuclear-tipped sea-launched cruise missiles (SLCMs)<sup>113</sup> - an acquisition program that, in turn, led to the adoption of the highly controversial "maritime strategy" for offensive war-fighting operations in the Norwegian and Barent Seas.

The motives for these decisions may have been multiple, but it is tempting to see them primarily as rational choices emerging

from a more general determination to enhance escalation control and regain what we might call marginal strategic superiority. What complicates the picture, though, is that the Reagan Administration was so slow in making up its mind about the MX program. If first priority were given to the task of threatening Soviet strategic forces and hardened military-political C<sup>3</sup> centers, the logical next step would be to ensure a swift deployment of the MX, since nothing could do more to enhance the US counterforce capability. Instead, the Reagan Administration abandoned the so-called "multiple protective shelter" (MPS) basing mode chosen by the Carter Administration,\* claiming that, despite its huge costs, it could not protect the ICBM force from a Soviet first strike. Lacking a clear alternative concept, the Administration thereafter spent the next two years analyzing other basing modes - a costly process which certainly did little to close the window of vulnerability. After the Administration's initial preference for a so-called "dense pack" basing mode had encountered massive opposition in the Congress,\*\* Reagan in April 1983 decided instead to halve the

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\* The MPS system involved a force of 200 MX missiles, each of which would be randomly shifted around on a closed circuit of 23 hardened protective shelters. The logic of this "shell game" was that, if the missiles were successfully disguised, the Soviet Union would have to target and destroy all 23 shelters in order to be sure of eliminating the single MX on any given circuit.

\*\* According to this plan, the MX missiles would be placed in densely packed fields, but with sufficient spacing between the silos so that each attacking warhead could destroy no more than two silos. On the basis of the assumption that the dust raised by one attacking warhead would produce a cloud through which subsequent warheads could not pass for some time (the so-called "fratricide" effect), the supporters of the system argued that the destruction of one silo would thus protect its siblings. Critics argued that it was too risky to base the survivability of the MX force on the fratricide phenomenon, which was poorly understood scientifically and practically untested.

proposed MX force, down to 100 missiles, and place it in the old Minuteman silos.<sup>114</sup>

Thus, the end result came very close to the original proposal of the Nixon-Ford Administrations. Unfortunately, the basic flaw with the original plan - that a ten-warhead missile in a fixed silo was "a fat and easy target" for MIRVed Soviet SS-18s and SS-19s<sup>115</sup> - had not been addressed. Quite the opposite, the Scowcroft Commission which Reagan organized to assess the adequacy of the US strategic force posture and modernization programs, concluded that the vulnerability of the land-based leg of the triad could not be fixed through any of the suggested mobile basing modes. Instead of wasting money on such basing systems, therefore, the Report proposed that, for the future, the United States would have to rely even more heavily on its SLBM programs. In addition, it recommended development of a small, single-head and highly accurate ICBM to be deployed in "more than one mode" no later than 1993.<sup>116</sup>

Reagan's predicament with the MX program had several reasons, the most fundamental being that his Administration was not perfectly honest in its official justification of the system. In the late 1970s and early 1980s, people like Paul Nitze, Richard Perle, and Caspar Weinberger were promoting MX deployment as a necessary counterweight to the threat of the Soviet heavy ICBMs - in other words, as a means to close the alleged "window of opportunity". This justification forced them to put premium on the system's basing mode, since placing new advanced MX missiles in old fixed Minuteman silos would do nothing to solve the vulnerability problem. In reality, however, their primary reason for supporting MX deployment was the system's offensive capabilities: the speed, accuracy, throw-weight, and advanced ten-warhead re-entry vehicles that would provide the United States with a superior land-based counter-force weapon. The prominence of this motive was revealed by

the Administration's decision, in early 1983, to deploy 100 MX missiles in old Minuteman silos. By then, two blue-ribbon panels had searched in vain for an alternative basing mode to the "race track" system proposed by Carter, which had become politically unsalable for economic and ecological reasons. Both panels concluded that there was, in effect, no basing mode option that could possibly solve the ICBM vulnerability problem. That the Administration not only accepted this conclusion, but also decided to deploy the MX irrespective of its inability to close the "window of opportunity", clearly confirms that the overriding motive was of another kind. In the words of General Brent Scowcroft, who headed the last of the two blue-ribbon panels, the ultimate intent behind the deployment decision was "to shore up deterrence" by conveying to the Soviets "our capacity to go after their theoretically vulnerable land-based missile force. It is that which the acquisition of the MX missile provides to the United States."<sup>117</sup>

Albeit a logical necessity, this shift of official rationale was not very helpful in gathering congressional support for the MX program, which by then was estimated to cost American tax payers no less than \$20 billion. Interestingly, this failure to solve the vulnerability problem seemed to frustrate the president as well. Apparently, Reagan had never felt comfortable with the notion of limited nuclear war-fighting nor with the threat of massive retaliation.<sup>118</sup> It was no accident, therefore, that the decision to deploy the MX, without adding anything to enhance the survivability of the ICBM force, coincided with a dramatic presidential initiative in the area of strategic defense: the SDI proposal of March 1983. Thus, once the MX decision was made in early 1983, Reagan's quest for security in the nuclear age began moving rapidly away from deterrence through acquisition of superior offensive forces towards arms reductions and revolutionary concepts of ballistic missile defense.



This resulting shift of focus from offense to defense leads us to our next topic: the role of strategic arms control and strategic defense in US nuclear policy during the Cold War.

## ***The evolution of US policy on strategic arms control and ballistic missile defense***

As the offensive capabilities of the Soviet Union began growing in the 1950s and 1960s, the United States came to rely increasingly on *strategic arms control* as an instrument for maintaining a favorable, or at least stable, balance of forces. To a large extent, that meant using arms control for the purpose of preventing the development or restricting the deployment of Soviet strategic weapons systems which Washington perceived as being particularly threatening or destabilizing.

Here we must recall the distinction between arms control and disarmament. Whereas these concepts were often used synonymously in the pre-nuclear age, and even in the late 1940s and early 1950s, they were refined and made more analytically precise in the late 1950s, particularly by those US defense intellectuals who claimed that national security could best be obtained by measures that enhanced strategic stability vis-à-vis the Soviet Union. Since then, it has become a standard phrase that arms control and disarmament are concerned with the same subject - weapons and arms races - but not necessarily with the same object. Proponents of nuclear disarmament generally regard arms as a root cause of war, and therefore support arms reductions as part of a process intended to lead, ultimately, to the elimination of the principal means of international violence: offensive weapons. Because of their indiscriminate and genocidal nature, nuclear weapons quickly became their first-priority target - indeed, many advocates of nuclear disarmament claimed, and continue to claim, that these weapons are illegal and immoral in themselves, and therefore should be banned by international law. In sum, proponents of nuclear disarmament tend to seek nuclear arms reduction for its own sake, not as a means of any other policy objective. In contrast, the US arms

control "school" that emerged in the early 1960s, with Thomas C. Schelling and Morton H. Halperin as its leading spokesmen, saw nuclear arms control as an instrument of traditional diplomacy and security policy. In their view, its principal objective was to help to stabilize US relations with the Communist rival states so as to reduce the risk of uncontrolled arms racing and military aggression. The aim was not arms reduction for its own sake; on the contrary, Schelling and his followers were firmly committed to deterrence, and saw nuclear weapons as crucial instruments also in that respect. What they wanted, then, was to use strategic arms control as an instrument that could help in maintaining the mutual hostage situation (the superior form of deterrence, in their view), reduce the costs of the strategic arms race, and, most importantly, enhance international stability.<sup>119</sup>

Strategic arms control, therefore, was never a particular liberal enterprise in the United States. Its chief advocates were the "owls" - moderate internationalists in both major parties with a realist approach to the problems of international politics and the Cold War. However, also typical "doves" and "hawks" could at times come out strongly in favor of arms control, but then "arms control" usually was seen as an instrument either of disarmament or US military resurgence.<sup>120</sup> To a large degree, the domestic controversy over US arms control policies in the 1970s and 1980s can be seen as a clash between these three fundamentally different approaches to the issue.

Either for domestic political reasons or because it was thought technologically feasible to offset at least a part of the offensive capabilities of the Soviet Union, US policymakers also made occasional attempts at developing an American capability for *strategic defense*. This was done in two different, though perfectly compatible, ways. The first was to invest resources in *civilian* and other so-called *passive* defense systems, like blast

and fallout shelters for the urban populations. A second, and technologically more demanding task, was to develop *active* strategic defense systems - radars, early warning sensors, and anti-aircraft or anti-missile systems capable of intercepting an attack by Soviet strategic forces. The latter objective was always controversial, though, since a breakthrough in active strategic defense technology could easily undermine Soviet self-confidence and, in the worst case, provide incentives for a Soviet first strike prior to the new system's deployment. As with strategic arms control, the interest of US decisionmakers in strategic defense was influenced by various factors - ranging from humanitarian concerns on behalf of the urban populations, to ambitions of finding a reliable way of neutralizing the Soviet offensive threat, thereby retaining a lost or threatened US strategic superiority.

### Pre-MAD: High jumps, low fences. Truman, Eisenhower, and Kennedy

For a brief period in 1945-46, the Truman Administration appeared seriously interested in reaching an agreement with the Soviet Union on international atomic energy control, including provisions that would ultimately give the Atomic Energy Authority of the United Nations a monopoly on nuclear weapons. The US proposal, put forward in the Baruch Plan of June 1946, presented a scheme for a gradual transfer of US atomic energy "secrets" to the UN. Provided that all other nations refrained from starting their own nuclear weapons program, the United States would - after a transition period of 7-12 years - place its entire nuclear weapons stockpile under UN custody.<sup>121</sup>

The sincerity of this proposal has been a matter of historical debate. On the other hand, all sources seem to indicate that the

Soviets, on their part, never seriously contemplated *any* scheme for international control that would deny them the right to develop the same capabilities that had already been developed by the United States. The Baruch Plan was totally unacceptable to Moscow. Instead, Soviet authorities proposed an alternative plan in which the United States, as a necessary first step, would dismantle its entire nuclear weapons stockpile and sign an international treaty outlawing all development, production of nuclear weapons. As a consequence of these incompatible positions, the UN negotiations broke down in late 1946.<sup>122</sup>

The Truman Administration reacted to this development by giving more priority to its nuclear weapons program. As Truman told a group of congressional leaders in July 1949, "since we can't obtain international control, we must be strongest in atomic weapons".<sup>123</sup> What changed this exclusive focusing on the offensive dimension of the US nuclear deterrent, was the successful Soviet nuclear weapons test in September that year. Whereas policymakers and experts like George F. Kennan and J. Robert Oppenheimer recommended that the United States should use the opportunity to make a last attempt in favor of nuclear disarmament, Truman's first response to the new Soviet threat was to order a crash program for developing a hydrogen or "super" bomb.<sup>124</sup> In less than a year, however, this and other efforts to enhance US offensive nuclear capabilities were supplemented with measures to enhance the protection of American society against a Soviet nuclear attack.<sup>125</sup> With this particular purpose in mind, and acting upon recommendations from the Air Force and the National Security Council (NSC), Truman in November 1950 established the Air Defense Command. Immediately thereafter, his Administration negotiated an agreement with Canada that allowed the United States to deploy a northern-facing early warning radar system on Canadian territory. Construction work on the so-called Pinetree Line started in early 1951.

The efficacy of that first active nuclear defense system was soon questioned, however. In the summer of 1952, an MIT study group strongly recommended that it be replaced by a technologically more advanced system, which the MIT experts assessed could prevent some 85-95% of the attacking Soviet bombers from reaching their targets. On the basis of this and similar evaluations from the National Security Resources Board, Truman marked the very last day of 1952 by signing an executive order calling for the earliest possible construction of a three-tier continental air defense system. It consisted of a so-called Distant Early Warning (DEW) Line - a radar network within the Arctic circle meant to detect the incoming strategic bombers hours before they could reach US territory - and two additional perimeters of warning and control sensors to sort out the threat and help the Strategic Defense Command to vector interceptors that would meet the attackers and destroy them.<sup>126</sup>

In sum, the Truman years were characterized by an initial, but short-lived quest for international control and nuclear disarmament, followed by a more durable attempt at building US security on its monopoly on nuclear weapons. When the monopoly ended, the Truman Administration tried to maintain the credibility of the US deterrent in two complementary ways: First of all by further increasing the offensive capability of US nuclear forces, and, secondly, by decreasing US vulnerability to nuclear attack by means of active strategic defense measures.

Throughout its eight years in office, the Eisenhower Administration did not depart significantly from the arms control and strategic defense policies implemented by its predecessor after the Soviet a-bomb test. Eisenhower fully shared Truman's negative assessment of the prospects for international control of nuclear weapons, and thought that the intensity of the Cold War precluded any serious consideration of a bilateral US-Soviet arms control agreement. Thus, except for some propagandistic

calls for "universal disarmament" and a round of inclusive talks on a possible comprehensive test ban - which, by the way, were motivated by medical and ecological rather than strategic concerns - no important nuclear arms control initiatives were made during the Eisenhower years.<sup>127</sup> Instead, both super-powers may actually have felt that they had more to lose than to gain from engaging in serious arms control talks at that time. The US side because it enjoyed such a comfortable lead in almost any important strategic category, and had based its national security policy on the assumption of nuclear superiority. The Soviets either because they actually believed that they were beginning to close the gap, or because they feared that arms control negotiations would disclose the shallowness of many of their recent technological achievements.

Strategic defense, however, was another matter. In short, Eisenhower upheld the commitment to continental air defense that had been made by Truman in 1950-52. Despite the tremendous costs involved, "Ike" promptly affirmed his predecessor's decision to deploy the DEW line system, and helped to ensure funding for it until the Soviet Sputnik launch in October 1957 killed much of its rationale. But the prospect of a Soviet ballistic missile capability did *not* diminish Eisenhower's commitment to strategic defense. What happened was rather that its focus shifted from continental air defense against Soviet bombers, to the much more demanding task of ballistic missile defense (BMD).

Research on a reliable BMD system had actually begun in earnest two years earlier, as an offshoot of the Army's surface-to-air missile (SAM) program. In 1956, the Army's third generation SAM, the Nike-Zeus, had been selected by the Pentagon for the task of defending US strategic targets against attacking Soviet ballistic missiles - so-called "point defense" responsibility. On the same occasion, the more demanding task

of providing a reliable "area defense" - that is, defense of urban centers and other countervalue targets - was assigned to the Air Force. Since nobody had much faith in the possibility of area defense, this arrangement came as a serious setback for the Air Force and its prestigious SAM system, the Wizard. However, this was something the service managed to live with as long as the main national effort remained in the field of continental air defense against Soviet strategic bombers, a responsibility practically monopolized by the Air Defense Command. The Sputnik shock changed that equation, however: primarily because it decreased the importance of continental air defense, but also because it initiated a series of political decisions that were to channel vast R&D funds into work on ballistic missile defense. Moreover, the post-Sputnik hysteria in American society soon led to a strong political demand for an *integrated* BMD system, one which could provide both "point defense" and "area defense" capabilities. To its lasting dismay, the Air Force lost the ensuing inter-service battle with the Army over that new important assignment. In January 1958, Secretary of Defense Neil H. McElroy announced that the integrated national BMD effort would build upon the Army's Nike-Zeus missile.<sup>128</sup>

Further impetus for a more vigorous BMD program was provided by the Gaither Commission, a blue-ribbon panel which Eisenhower had appointed in early 1957 to study the requirements for civil defense. Its top-secret report *Deterrence and Survival in the Nuclear Age*, submitted to the President a month after the Sputnik launch, called for a strong national effort to protect both the American population and the SAC force against the emerging Soviet ICBM threat. Otherwise, the report concluded, both the US deterrent and survival were at risk.<sup>129</sup>

To a large extent, Eisenhower followed the Committee's recommendations for improving strategic bomber survivability. He was much less willing to follow its advice concerning civil



defense. For instance, he did not provide the recommended funding for a nation-wide fallout shelter program - a bit odd, perhaps, since it was precisely that topic he had asked the commission to address in the first place. But, as we have already seen, the reason was fairly simple: effective strategic defense was not affordable. Even if Eisenhower had a sincere interest in the subject and seriously felt that civil defense mattered for the overall strategic balance, he would not put the US economy in jeopardy to obtain what seemed to represent only a marginal improvement of the population's security. According to the Gaither Committee's assessment, the measures needed for a reliable and reasonable BMD system would cost no less than \$25 billion over the first five years. The measures recommended for improving the offensive capabilities of the US strategic forces were, in comparison, estimated to cost \$19 billion over the same period.<sup>130</sup>

All in all, it appears that Eisenhower's commitment to strategic defense was less strong than his commitment to a balanced budget. It is also true that he gave much higher priority to the development of active "area defense" capabilities - which would improve the defense of military installations as well - than to passive or civil defense capabilities like blast and fallout shelters. Given his budgetary conservatism, his declared commitment to the strategy of massive destruction, and his sound assessment of the overall military balance (Eisenhower never accepted the idea that the Soviets were about to catch up with or surpass the United States in offensive nuclear capabilities), this was hardly a surprising choice. With a military doctrine and national security policy that for years had rested almost exclusively on the existence of an overwhelming US superiority in offensive nuclear forces, it would have made little sense not to make protection of those forces the principal assignment for the BMD program.

John F. Kennedy's victory in the 1960 presidential election did not result in anything more than a limited modification of this policy. However, given the new Administration's emphasis on flexibility, control, and damage limitation, it was only logical that it would upgrade the role of civil defense. The Administration's experts, many of whom had been assisting the Gaither Commission, had figured out that even a modest civil defense program could help to save 10-15 million American lives in the initial stage of a nuclear war. On the basis of that premise, funding for a national fallout shelter program figured high in the Defense Budgets of FY 1962 and FY 1963. To Kennedy this made sense also for other than humanitarian reasons - for instance, as a means of countering criticism that flexible response represented a lowering of the nuclear threshold. A more effective civil defense system, the Administration argued, would actually mean a hedge against a possible breakdown in deterrence since it indirectly decreased the offensive capability of the Soviet forces, particularly their countervalue capability. In turn, this could help to push Soviet war planners toward accepting and mirroring the new US counterforce/no cities strategy, thus enhancing strategic stability as well.<sup>131</sup>

Against this backdrop, it is perhaps surprising that the Kennedy Administration did so little to push deployment of the Nike-Zeus system, since that, too, was intended to mitigate the effects of a Soviet nuclear attack. However, McNamara never trusted the quality of that system. Generally skeptical about the notion of anti-ballistic missiles (ABMs), he was particularly negative to the Nike-Zeus, which he simply did not believe would work according to plan. His skepticism had several reasons - some were related to the operational limitations of the Nike-Zeus missiles; others to the extreme vulnerability of the early-warning radar network, and some to the system's ability to function in an intensely radioactive environment (a problem that American scientists were just starting to address).

For all these reasons, the inadequacy of the Nike-Zeus became a matter of increasing concern to McNamara in 1962-63. By then, the Army was getting ready to deploy the system and was pushing hard for his approval of a grandiose plan that would have resulted in the mass deployment of 7,000 missiles around 27 US cities. In McNamara's view there was in this plan an unacceptable mismatch between economic costs and likely benefits in terms of national security. Having resisted the building pressure for an early deployment of a national BMD system from his first day in office, McNamara on these grounds canceled the Nike-Zeus program in early 1963. As a compensation, he asked the Army to develop a more advanced system, termed "Nike-X", that could meet the strategic needs and technological challenges of the 1970s.<sup>132</sup>

The Kennedy years saw the signing of the Limited Test Ban Treaty of 1963,<sup>\*</sup> and brought some more serious attention to the issue of strategic arms control. The Administration repeated its predecessor's propagandistic call for general and complete disarmament (GCD), and actually signed a joint statement of principle with the Soviet Union to that effect in September 1961; it also demonstrated a new realism and sincerity in these issues. At home, Kennedy created the Arms Control and Disarmament Agency, which in the 1970s would become the leading intra-government sponsor of arms control. At the level

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\* The three original signatories of the LTB Treaty (the USA, the USSR, and the UK) committed themselves not to undertake any tests of nuclear weapons or nuclear devices in the atmosphere. Underground testing was not prohibited, however. The LTBT was never intended as an instrument of arms control; other motives, especially concerning the medical hazard caused by the atmospheric tests, were more crucial. Thus, whereas the Treaty was important from an environmental perspective, it had little effect on the military programs of the nuclear weapon states.

of diplomacy, Kennedy also used the McCloy-Zorin talks, which produced the joint GCD statement, to obtain official Soviet acceptance of the principle that GCD should be obtained in fully verifiable stages. This was an important development which, at least to the US side, helped to move strategic arms control from the realm of fantasy to the anteroom of high politics.<sup>133</sup> However, while it appears that the Cuban missile crisis helped to make both Kennedy and Khrushchev more sympathetic to the notion of strategic arms control,<sup>134</sup> neither of them came up with any concrete or official proposals in this regard during their brief remaining time in power. The explanation is obvious. Even the frightening experience of the Cuban missile crisis could not annul the strong subjective interest both sides felt in completing their own ongoing strategic weapons programs.

In sum, the pre-MAD period was characterized by an ambitious build-up in offensive forces complemented with a serious but relatively less ambitious attempt to neutralize the increasing threat posed by the offensive nuclear forces of the other side. The bedrock rationale for this "hitting high, fencing low" policy was that, in a situation of clear US superiority, a Soviet first strike would be a very unlikely event. Since the current US strategy for nuclear war was based on the assumption that the United States would strike the first blow - either to pre-empt an anticipated or to retaliate a preceding Soviet *conventional* attack on Western Europe or US overseas bases - there were good prospects that even a limited strategic defense capability could handle the second strike threat then posed by the surviving Soviet forces. Similarly, it was thought that there was little to gain from strategic arms control as long as the strategic balance was overwhelmingly favorable to the United States. Lacking today's advanced means of verification, it simply seemed too hazardous to base the security of the United States on an unenforceable control regime rather than a superior nuclear deterrent. As we shall see, both of these assumptions were

radically altered by the advent of a secure Soviet retaliatory capability in the early 1960s.

## **MAD: Many swords, few shields. Johnson, Nixon, and Ford**

In contrast to the modest revisions implemented by the Kennedy Administration, McNamara's retreat from flexible response and damage limitation in favor of assured destruction were to have significant and long-lasting implications for US arms control policy and BMD programs. In broad terms, the shift of doctrine in 1963-64 had two important implications: It eroded almost completely the rationale for ballistic missile defense, especially for protection of population centers; and it lessened the incentive for maintaining US superiority in strategic weapons. In due time, the two parallel processes would find their fulfillment, in the ABM Treaty and SALT 1 "Interim" Treaty, respectively.

By 1963-64, McNamara had come to the conclusion that the intrinsic advantage of offense over defense in nuclear war made it extremely hard to justify deployment of BMD systems. No system had yet been designed that could not be easily overwhelmed by minor increases in the quantitative or qualitative capabilities of the enemy's offensive forces. As he explained to Johnson in a secret memorandum of December 1964, "our damage limiting problem is their assured destruction problem and our assured destruction problem is their damage limiting problem".<sup>135</sup> The deployment of Soviet SLBMs was a case in point. Whereas the "layered defense" concept of the new Nike-X system appeared reasonably promising as long as it was meant to deal only with the threat of land-based ballistic missiles (ICBMs), its operational tasks increased far beyond capacity as soon as the SLBM threat was brought into the equation, primarily because of the much shorter warning time.<sup>136</sup>

But there was more than technological constraints involved in this development. Equally important was McNamara's growing conviction that *even a smoothly-functioning BMD system was a bad thing*, because it would undermine the mutual hostage situation. The logic was that the development of an effective anti-ballistic missile system - by either the USA or the USSR - would give rise to fears on the opposite side that its deterrent was about to be rendered useless and impotent. Under such destabilizing circumstances, McNamara argued, the inferior state could be tempted to opt for a pre-emptive first strike. Thus, rather than doing anything that could conceivably push Moscow in that direction, McNamara decided that the United States would be better served by helping to increase Soviet self-confidence in the strategic sphere - not by letting the Soviet Union increase its relative offensive strength vis-à-vis the United States, but by negotiating a mutual agreement to *renounce* BMD development of any kind. In that way, each superpower would leave itself open to attack by the other. In McNamara's judgment, this mutual increase in vulnerability had a positive side in that neither of the parties needed to fear that its retaliatory capability was at risk. The net result would be enhanced stability.<sup>137</sup>

Despite his reservations, McNamara could not halt the growing momentum in favor of BMD development. One reason was that he and his advisers were at odds with the military leadership as well as with a strong majority of the lawmakers at Capitol Hill. Caught between these contesting groups, President Johnson was unable to give his Secretary of Defense the support he needed to stand up against domestic-bureaucratic pressure. A second factor was that the Army had now managed to overcome many of the initial deficiencies of the Nike-X program, making it harder for McNamara to resist its deployment on technical grounds. Finally, McNamara's task was rendered practically impossible when, in November 1966, the Soviets started mass

deployment of the so-called *Galosh* ABM system around Moscow. Unimpressed by what he learned about the system from his intelligence sources, McNamara was confident that ongoing improvements in US offensive forces, such as the Poseidon and MIRV programs, would more than negate Soviet ABM efforts. But *Galosh* proved to be to America's BMD programs what Sputnik had been to her ICBM programs: a call for swift and bold decisions. Pressed by the JCS and the NSC, Johnson and McNamara soon agreed to start production of an updated version of the Nike-X system called *Sentinel*.<sup>138</sup>

The *Sentinel* decision was extraordinary in at least two ways. First of all, it included an invitation to Moscow to start negotiations on a complete ban on BMD systems, and committed the United States not to start deploying the system until either the Soviet Union had declined the offer to negotiate the system away or the negotiations had proved fruitless. Even more remarkable, McNamara had redefined the operational tasks of *Sentinel* so that they differed rather dramatically from those of the Nike-Zeus and Nike-X systems. Rather than trying to protect US cities against a Soviet ICBM attack - a task which McNamara found unfeasible as well as destabilizing - *Sentinel* was assigned two less demanding responsibilities. The first was to defend US "hard" targets against what McNamara called a "sophisticated threat" - that is, a massive attack by a Soviet ICBM force equipped with multiple warheads and electronic penetration aids. The second was to protect US "soft" targets, or cities, from the "primitive threat" of a small-scale ICBM attack by China.<sup>139</sup>

Thus, on paper at least, *Sentinel* would provide both "point defense" and "area defense". But since the latter assignment applied only to the remote possibility of nuclear war with China, it was clear that the Administration's ambitions in this regard were limited. Thus, even if McNamara apparently had made a

major concession to the military when he approved Sentinel production, he had redefined its operational tasks in such a way that it would not seriously undermine the emerging mutual hostage relationship with the Soviet Union. Even better, from McNamara's perspective, the Sentinel decision might be instrumental in bringing the Soviets around to accept his own position on the issue of ballistic missile defense. If Moscow could be persuaded to agree on a reciprocal ban on ABM systems, MAD would be immensely strengthened.

The Johnson presidency saw a major shift also in US policy on strategic arms control. For the first time, Washington now signalled willingness to take part in *bilateral* negotiations with the Soviet Union. Johnson's first initiative on the matter - a proposal in 1964 to freeze all existing strategic force levels on both side - was hard to take seriously, though, designed as it was to preserve indefinitely an otherwise fast-eroding US superiority. But in the next two or three years, McNamara and his aides went through a Copernican revolution in their views on arms control. Rather than seeing it as a way to stop negative trends in the strategic competition with the Soviet Union, they began to acknowledge that the Soviets had legitimate security concerns, too, which had to be acknowledged in order to reach a mutually acceptable arms control agreement. Moreover, these decisionmakers were gradually coming to accept what is often called the "mechanistic" interpretation of the arms race - that is, the view that there is no one in particular to blame for it, and that the race was driven primarily by "technological momentum" and/or international "action-reaction" phenomena.<sup>140</sup> Finally, McNamara also took the position that, in a situation of impending strategic parity, strategic arms control could play a crucial role in minimizing the likelihood of nuclear war. Inspired by an important RAND study on the subject, the Secretary of Defense began to argue in favor of a comprehensive bilateral arms control agreement with the Soviets, to



be based on the principles of parity and reciprocity. As mentioned, the Sentinel decision was used as an opportunity to invite Moscow to the negotiation table.<sup>141</sup>

The Soviet leadership accepted the invitation, and the joint decision to start arms control negotiations was announced in July 1968, on the occasion of the signing of the Non-Proliferation Treaty. However, the upcoming talks would soon be put on the back burner by two unforeseen developments: the Soviet invasion of Czechoslovakia in August 1968, and the election of Richard Nixon as president two months later.

In the long run, Nixon's victory in the 1968 presidential election probably meant a shortcut on the road toward a strategic arms control agreement - if not for other reasons, because his strong conservative credentials made him less vulnerable to charges from the political right that he was "soft on Communism". Initially, however, his Administration appeared less committed to arms control than its Democratic predecessor - primarily because Nixon began his first term by putting immense pressure on Congress to approve his funding requests for the *Safeguard* system (Nixon's name for Sentinel) and the just recently disclosed MIRV program. But it would be a mistake to see these appropriation requests as the starting shot for a comprehensive re-armament effort. What Nixon and his National Security Adviser Henry A. Kissinger wanted was not so much to increase US strategic capabilities as to strengthen the US position in the strategic arms control negotiations in which they, sooner rather than later, were determined to get involved.<sup>142</sup>

The first Nixon Administration's interest in strategic arms control was motivated by at least three factors: First of all, it saw strategic arms control as a means to reduce the inflationary growth in the defense budget (the obvious alternative - scaling down the US military involvement in Vietnam - was even more

controversial and uncertain). Secondly, they hoped to use the SALT process as a door-opener for more general détente. A third, and more concealed motive, was to arrest what they saw as various negative trends in the strategic relationship with the Soviet Union. As Kissinger explains in his memoirs: "We needed the agreement if we wanted to catch up in offensive weapons."<sup>143</sup>

Negotiations began in November 1969, and continued for the next two and half years. To the surprise of the US side, it soon became clear that Moscow was more ready to accept severe restrictions on ABM development than it was to accept limitations on its offensive weapons programs. Apparently, the Soviets were already frustrated about the technical shortcomings of the Galosh ABM system, and feared that, if deployed, the Safeguard would give the Americans a firm lead in the field of "point defense" (for economic and other reasons, Nixon had decided to drop the more exotic notion of area defense against a Chinese ICBM attack). As far as offensive weapons systems were concerned, the situation was almost the opposite: Here, trends were either going Moscow's way, and should therefore be allowed to continue unchecked, or the United States enjoyed a qualitative lead which the Soviets needed time to catch up with, as in the sphere of multiple independent re-entry vehicles (MIRV).<sup>144</sup>

The end result was the SALT 1 agreement of May 1972, which consisted of two separate parts: A treaty of "unlimited duration" banning extensive ABM deployment, and a so-called "Interim Agreement" of five year duration which essentially froze the offensive strategic arsenals of both superpowers at their existing levels. When ratified by the US Senate in October 1972, the SALT 1 Treaty permitted the parties to adopt the following force postures:

	USA	USSR
ABM systems	2 <sup>*</sup>	2 <sup>**</sup>
ICBM launchers	1,054	1,618
SLBM launchers	656	950 <sup>***</sup>

The greater Soviet numbers in ICBM and SLBM launchers reflected numerical leads in these categories at the time of the signing of the Treaty. Even among those Senators who supported the Treaty, these asymmetries caused a lot of criticism. As a result, the Senate passed a resolution in the fall of 1972 - sponsored by Senator Henry "Scoop" Jackson (Dem., WA) - which prohibited ratification of any follow-up SALT agreement unless it embodied the principle of "essential equivalence".<sup>145</sup> Despite these negative contemporary assessments, it is clear that the Interim Agreement also had some features rather appealing to the United States. For one thing, it left out strategic bombers - a category in which the United States still held a clear superiority. Moreover, it put no restrictions on the number of warheads. Since the Americans at this time were far ahead in MIRV technology, this meant that they could increase their already substantial lead in number of deliverable warheads

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\* One year later, in 1973, the parties modified the agreement so that each side would be allowed to retain only a single site located either around its capital or at an ICBM site. The USA chose to place its only Safeguard network around the Grand Forks Minuteman site in North Dakota, but the deployment was never completed.

\*\* The Soviet Union had to remove several Galosh units in order to comply with this ceiling, maintaining only one area defense system around Moscow and one point defense system close to an ICBM site halfway between the capital and Leningrad.

\*\*\* The actual Soviet strength at the time of signing was 740 SLBM launchers on 56 submarines. However, claiming to have 210 additional SLBM launchers on six submarines under construction, the Soviets were allowed to deploy these as well. As a compensation, the United States was permitted to trade 54 outmoded Titan ICBMs for a similar number of modern SLBMs.

simply by MIRVing those SLBMs and ICBMs allowed to the United States under the Treaty. Finally, whereas the Treaty put no limitations on ongoing or planned US modernization programs, it did prohibit the Soviets from increasing the number of launchers for heavy ICBMs, which at that time counted 308 units. This was an important concession, since the heavy ICBM (the SS-9 and its successor SS-18) was considered the most threatening and potentially destabilizing of all Soviet weapons systems.<sup>146</sup>

Categorizing the first Nixon Administration's policies on arms control and missile defense is difficult. On the one hand, there were many similarities between these policies and those of the Johnson Administration - among other things, the ABM Treaty and the willingness to accept quantitative limits on US offensive capabilities were both in line with McNamara's objectives in 1967-68, and thus fully compatible with MAD. In his memoirs, Nixon confirmed this when writing that the principal effect of the ABM Treaty was "to make permanent the concept of deterrence through 'mutual terror'".<sup>147</sup> The same goes for Nixon's transformation from an advocate of re-establishing US strategic superiority, a position he held as late as in the 1968 presidential campaign, to his adoption shortly afterwards of the notion of strategic parity - or *sufficiency*, as the reborn "MAD-vocate" preferred to call it.<sup>148</sup> Kissinger's turnabout was no less remarkable. Starting out as a believer in "meaningful superiority", he had begun, since the mid-1950s, to realize that at some point in the not-too-distant future, "superiority was going to become next to impossible to obtain". Technological developments would help to lead the superpowers towards "a kind of parity which would make absolute war impossible", he later stated.<sup>149</sup> Using another phrase that could have been borrowed from McNamara's MAD vocabulary, he defended the SALT 1 Treaty with the argument that it represented "a major contribution to strategic stability".<sup>150</sup> By the time of the

Vladivostok summit, he had little left for the notion of strategic superiority. "What do you do with superiority?", he wondered. "What does it mean? What value is it?"<sup>151</sup>

In apparent contradiction to all this, the retrospective accounts of both Kissinger and Nixon have emphasized how difficult the US strategic position was in the early 1970s. Both men claim that the ABM and SALT 1 Treaties were necessary conditions for all subsequent US American attempts at restoring a more favorable balance. However that might be, this explanation is at least consistent with the overall trend in the first Nixon Administration's modernization programs, which by 1972 showed clear signs of moving *away* from the dominant MAD philosophy of the late 1960s towards the counterforce-escalation control posture soon to be epitomized by the Schlesinger Doctrine.

The safest conclusion is probably that the first Nixon Administration represented a transition period. Both MAD and post-MAD concepts were operating side by side, occasionally resulting in a self-contradictory policy.

The MAD decade was definitely coming to an end by 1973-74, however. As we have seen, the beginning of Schlesinger's tenure as Secretary of Defense marked a crucial departure from the past, especially in nuclear doctrine and employment policies. These changes had implications also for US arms control policy in the same period. Most importantly, perhaps, the gap between the military services, the JCS, and the Department of Defense on the one hand, and the NSC and the State Department on the other, increased dramatically on several issues highly relevant for negotiations on the follow-up agreement to SALT 1. Representatives of the military generally insisted either on avoiding restrictions on US offensive weapons systems that their MAD-prone civilian colleagues were ready to regulate, or on

imposing much harsher restrictions on offensive Soviet systems than Kissinger and his followers thought necessary or obtainable. Cases in point are the disagreements over the cruise missile (basically a US asset) and the Soviet heavy missiles. Schlesinger and the US military wanted as few restrictions on the cruise missile as possible, but were pushing hard for reductions in the SS-9 and SS-18 force. Conversely, Kissinger was more willing to compromise on the cruise missile, and to tolerate no better than a freeze in the number of heavy missiles. The problem of how to categorize the Soviet Backfire bomber - as a medium range or strategic aircraft - splitted the US side roughly along the same line of division, with Kissinger willing to accept the first alternative and the JCS insisting on the second.<sup>152</sup>

The Vladivostok Agreement, signed by President Ford and General Secretary of the Soviet Communist Party Leonid Brezhnev in November 1974, reflected these controversies. Trying to satisfy the Senate's call for symmetrical parity, the Agreement defined a set of aggregate strategic force limits that were to apply equally to the strategic forces of either side. The superpowers were allowed to deploy a total of 2,400 strategic launchers each. That figure included ICBMs, SLBMs as well as strategic bombers (one bomber = one launcher), but it was up to each country to determine the exact numerical distribution among the three legs of the triad. In addition, the Agreement put a sub-limit on MIRVed missiles, restricting that category to 1,320 for each side.<sup>153</sup> The Soviets were allowed to maintain their existing 308 heavy missiles, but could not increase that number. Cruise missiles and the Backfire were not mentioned in the Agreement, with a tacit understanding that these weapons systems would be dealt with in a follow-up treaty.

Kissinger had his way on the Backfire and heavy missiles, but had to yield to Schlesinger on the cruise missile. Thus, it is

probably correct to see the Vladivostok Agreement as a *double compromise* - one between the United States and the Soviet Union, another between the contesting advocates of MAD versus escalation control within the US government. As far as strategic arms control and BMD were concerned, the Ford presidency thus appears as the last stage in the transition period between MAD and post-MAD policies. In these two areas, US policy was still dominated by MAD, but increasingly influenced also by the concepts of the Schlesinger Doctrine.

Summing up, then, the MAD decade was characterized by general consensus among political and military decisionmakers that the national security of the United States had become inseparably linked to the preservation of its mutual hostage relationship with the Soviet Union. To preserve MAD, two things were required: First of all, both parties had to refrain from taking defensive actions that, intentionally or unintentionally, could put the opponent's retaliatory capabilities at risk. Secondly, even if the race in offensive strategic weapons should be halted and brought under control so as to lessen the danger of accidental war and destabilizing technological developments, both sides also needed to maintain enough offensive forces to ensure that their capability to impose intolerable damage upon each other could not be nullified by a disarming counterforce first strike. In terms of arms control and strategic defense, the "many swords, few shields" policy of the late 1960s and early 1970s manifested itself in the ABM Treaty and the SALT 1 "Interim" Agreement, which basically froze the strategic forces at their current levels without attempting to reduce the offensive power of either side. The rationale of this policy was built on the assumption that the "objective" reality of the mutual hostage situation would impose itself on the Soviet leaders and make them accept the logic of assured destruction. When domestic critics of MAD began to question this

assumption, both the SALT process and the ABM Treaty became hotly disputed topics in the United States.

## Post-MAD: Earthly fears, heavenly shelters. Carter, Reagan, and Bush

The move away from MAD was accelerated under President Jimmy Carter; but again, with one significant exception, the development was less explicit and radical in arms control and BMD than in other areas of US nuclear policy. It would be up to Carter's Republican successor, Ronald Reagan, to adopt strong anti-MAD positions also in these two spheres. As we shall see, however, the seeds of many of these positions had been sown during the Carter years. In historical perspective, it is clear that the similarities between the arms control and BMD policies of the Carter and the Reagan-Bush Administrations were numerous, and generally more striking than the differences.

In what ways were their policies alike?

One obvious similarity was their common *quest for comprehensive reductions in the offensive strategic forces of both sides*. The rationale behind this position was very simple. According to the conservative arms control school so influential in the late 1970s, the SALT 1 Treaty and the Vladivostok Agreement had only helped to stabilize the arms race and reduce some of the political tensions between the contesting parties. But enhancing what experts call *arms race stability* and *political stability* were not enough. Indeed, such stability could be dangerous for the West unless supplemented with so-called *first-strike* or *crisis stability* - that is, unless the arms control process led to agreements that would reduce the incentive on either side for initiating a nuclear war, even in times of acute international crisis. As seen by these experts, first-strike stability could most



effectively be obtained by adopting measures that would deprive both superpowers of their most potent first-strike weapons: without these, the temptation to opt for pre-emption or a preventive first strike would be reduced to a minimum. Thus, it became a standing goal for the conservative arms control experts to impose substantial reductions in the first-strike capabilities of the Soviet Union, particularly its heavy missiles.<sup>154</sup>

This was exactly what Carter hoped to obtain with his controversial "deep cuts" proposal of March 1977. During the presidential campaign of 1976, Carter had made it clear that he wished to reach an early SALT 2 treaty based on the principles of the Vladivostok Agreement - essentially a freeze on existing aggregate force levels - and then move quickly on to what he referred to as real arms *reductions*. He confirmed this position as late as in February 1977, both publicly and in private communications with Brezhnev.<sup>155</sup> However, for reasons that are still far from clear, Carter suddenly changed his mind on the issue, deciding instead to put the Vladivostok accord aside and push for substantial reductions in offensive strategic forces.

By all indications, the resulting "deep cuts" proposal of March 1977 was a result of three influences. The most important, of course, was Carter's strong personal qualms about nuclear weapons, and his correspondingly high ambitions concerning dramatic reductions in nuclear forces.

Another critical influence was represented by Senator Jackson, with whom Carter at first had a close relationship. As the sponsor of the "essential equivalence" amendment to the bill that ratified the SALT 1 Treaty, Senator Jackson was undoubtedly the most influential congressional spokesman for the conservative arms control school. In late 1976, he and his principal military adviser, Richard Perle, had helped to organize the Committee on the Present Danger, which immediately became

the leading forum for conservative criticism of MAD-inspired defense and arms control policies. Sharing many of Jackson's views, and hoping to win the support of his conservative constituencies, Carter was eager to recruit Jackson as a major partisan of the Administration's defense policies. He could hardly hope to achieve that, however, unless he addressed the problem which Jackson and his colleagues in the Committee on the Present Danger referred to as "the window of opportunity" - the alleged vulnerability of the US Minuteman force to a disarming Soviet first strike. The only way to close that window, they argued, was by making the Soviets reduce their counterforce capabilities: in plain English that meant to make them accept deep cuts in their arsenal of heavy missiles. In a 30-page memorandum to the President, Perle and Jackson put forward an impressive set of arguments in favor of abandoning the Vladivostok Agreement in favor of deep cuts - most of which Carter appears to have accepted.<sup>156</sup>

And lastly, deep cuts were supported by the US military and important segments of the national security bureaucracy in Washington. The JCS liked the proposal chiefly because it addressed what they, for years, had regarded as the major threat to US security, namely the Soviet Union's growing superiority in land-based ballistic missiles. But they may also have calculated that the proposal would be rejected by the Soviets, and that this would cause a negotiations impasse which could be used to improve the US strategic position. In a similar way, National Security Adviser Zbigniew Brzezinski and his staff saw deep cuts as a rational position because it would lead either to an arms control agreement favorable to the United States, or to a breakdown in the negotiations that would prove to the American people that the Soviets were not seriously interested in arms control.<sup>157</sup>

The "deep cuts" proposal of March 1977 called for a sharp reduction in aggregate strategic force levels - down from 2,400 launchers on each side in the Vladivostok Agreement to something in the range of 1,800-2,000. Within this total, there would be two sub-ceilings of 550 MIRVed ICBMs and 550-650 MIRVed SLBMs. Moreover, the Soviets would have to reduce their heavy missile force from 308 to 150 units. They would also have to forego any plans for converting the Backfire into a full-fledged strategic bomber. As a compensation, the United States suggested a ban on all new ICBMs - a provision that would kill its own MX program - and a 2,500 km across-the-board limit on cruise missiles. The latter concession was easy to offer, since none of the services had any plans of developing a cruise missile with range longer than that. Cancelling the MX program was a much bolder proposal, but as long as the Soviets would have to pay for it by destroying half of their heavy missiles, it seemed a good bargain.<sup>158</sup>

Historians will probably never agree on how to characterize the "deep cuts" proposal: whether it was fair, visionary, naive, unrealistic, one-sided, insincere, or simply years ahead of its time. At any rate, the Soviets flatly rejected it, telling Secretary of State Cyrus Vance that there would be no SALT 2 agreement unless it could be built directly on the Vladivostok accord. After considering this ultimatum for a month or two, the Americans finally gave in. In late May 1977, the two sides decided to get the SALT 2 negotiations back on track again. For two more years, they wrestled with the problem, only to end up with an agreement that bore striking similarities to the Vladivostok deal. Signed by Carter and Brezhnev in June 1979, the SALT 2 Agreement imposed an equal overall ceiling of 2,250 strategic delivery systems for both parties, including a sublimit of 1,320 on the combined number of MIRVed ICBMs, SLBMs, and ALCM-carrying strategic bombers (the sum of MIRVed ICBMs and SLBMs not to exceed 1,200). Each side could deploy a

maximum of 820 MIRVed ICBMs, none of which should be emplaced on mobile launchers. The Soviet Union maintained its 308 heavy missiles, whereas the United States was allowed to deploy ALCMs within the 2,500 km range. As for ground- and sea-based cruise missiles, their maximum range was set to 600 km.<sup>159</sup>

The SALT 2 Agreement was never ratified by the US Senate, but its provisions were faithfully adhered to by both the Soviet Union and the United States well into the second Reagan Administration. All the same, it is possible to argue that the agreement had a less profound and lasting influence on US nuclear policy than the abortive "deep cuts" proposal of March 1977. This conclusion rests on the fact that the strategic arms agreements negotiated by the Reagan and Bush Administrations - the START 1 Agreement of July 1991 and the START 2 Agreement of January 1993 - were much more in line with the spirit of the "deep cuts" proposal than the SALT 2 Agreement.<sup>160</sup> Not only did the two START agreements impose deep cuts of their own, leading to successive reductions in the total number of strategic warheads on each side by respectively 30 and 75% (down from 12,500 to 3,500 missile warheads and ALCMs each), and a cut in the aggregate number of strategic delivery vehicles to no more than 1,600 (a 30% reduction from the SALT 2 limit). They also resembled Carter's "deep cuts" proposal in insisting on radical reductions in the number of Soviet heavy missiles. In 1991, after eight years of hard bargaining, Moscow finally agreed to reduce the SS-18 force by 50% (START 1). Eighteen months later, the START 2 Agreement committed Russia - which in the meantime had replaced the Soviet Union at the negotiation table - to give up even the remaining 154 SS-18s over a ten-year period. Finally, as a third similarity, the Reagan-Bush Administrations re-started and finished the process of reducing the numbers of MIRVed ICBMs which Carter, without success, had begun in 1977.

According to START 2, the parties must reduce the number of warheads on MIRVed ICBMs to 1,200 by the year 2000 (Russia would be left with approximately 100-120 MIRVed missiles carrying 6-10 warheads each), and then move on to eliminate this category of weapons completely within the next three years.<sup>161</sup>

From a US perspective, each of these three developments - reductions in the number of warheads and delivery vehicles, in the number of MIRVed ICBMs, and in the number of Soviet heavy missiles - served the same over-all purpose of helping to close the alleged "window of opportunity" that the Soviets had acquired during, or as a result of, the MAD decade. The Carter, Reagan, and Bush years, therefore, marked a significant shift of focus for US arms control negotiators, away from arms control stability and political stability, and towards the more ambitious goal of first-strike stability.

In addition to the quest for comprehensive reductions in the offensive strategic forces of both sides, and the increased first-strike stability resulting from these reductions, the policies of the Carter-Reagan-Bush Administrations resembled each other also in *the priority they attached to the task of strategic defense*. Under Carter, this task was contemplated strictly within the limits of the ABM Treaty, with the focus mainly on passive defense measures like fallout and blast shelters. But the implications were much wider than that. As General William Odom, who served as Brzezinski's military adviser in the NSC, later told the author, "once you say, as we did in PD-41, that civil defense, like *any* type of strategic defense, is part of the overall strategic balance - once you say that, you implicitly have abandoned MAD as a your guiding principle in life".<sup>162</sup>

The abandoning of MAD and increasing emphasis on defense manifested themselves in other ways as well. For instance, the

attention and resources spent on finding a secure basing mode for the MX demonstrated a radically increased concern about US vulnerability to Soviet attack; indeed, the "multiple protective shelter" (MPS) basing mode preferred by the Carter Administration can be seen as an attempt to obtain by passive defense measures what the ABM Treaty made it impossible to obtain by active defense. Secondly, the late 1970s saw the first attempts at redirecting US military-civilian research programs towards so-called "exotic" or "futuristic" technologies, such as directed-beams weapons, which many experts were beginning to see as a promising new avenue in the search for an effective BMD system.<sup>163</sup>

It was this latter effort that was lifted to international fame by President Reagan's "Star Wars" speech on 23 March 1983.<sup>164</sup> By then, it had long since become clear that the Reagan Administration would put unprecedented emphasis on active defense. In its first two years, the Administration had concentrated its efforts on "point defense" systems that could enhance the security of hardened strategic targets, in particular the Minuteman silos then contemplated for the MX. Then, in early 1983, Reagan suddenly decided to broaden the scope of American BMD research to include the "ultimate goal of eliminating the threat posed by nuclear ballistic missiles" - words commonly interpreted as a call for developing a fool-proof defense of US cities and population centers.<sup>165</sup> At the outset, the Strategic Defense Initiative (SDI) was supposed to be carried out "in a manner consistent with [the US] obligations under the ABM Treaty".<sup>166</sup> But that commitment faded over the next two or three years, with governmental officials speaking all the more freely about the possibility of breaking out of the ABM Treaty, if that were necessary to carry out the SDI program. Trying to prepare the US public for such a break-out, the Reagan Administration alternated between issuing charges that the Soviet Union had been violating the Treaty for

years,<sup>167</sup> and claiming that the ABM Treaty had never been intended to ban *research* on space-based area-defense systems of the kind considered under the program.<sup>168</sup> It was wrong, therefore, to perceive the SDI program in its current phase as a violation of the Treaty. Finally, Caspar Weinberger never missed an opportunity to point out that, since the ABM Treaty also called for early *reductions* in offensive strategic weapons, and since the Soviets so far had rejected all US proposals aimed at that goal, no one had any right to complain if the United States began to prepare defensive counter-measures against the excessive offensive forces of the Soviet Union.<sup>169</sup>

After the first year of euphoria, Reagan's SDI advisers became increasingly cautious in their assessment of the program. Accordingly, the President's secret directives on the matter, such as the National Security Decision Directive (NSDD)-119 of 6 January 1984, began to stress the importance of organizing a series of well-structured, long-term R&D programs, rather than a crash program with short-term deployment in mind. In accordance with that decision, the Administration set up a national Strategic Defense Initiative Organization within the Department of Defense, which soon had at its disposal a \$26 billion annual R&D effort within and outside the military services.<sup>170</sup>

Even these huge investments could not save the program, however. By the time Reagan left office, the momentum behind the SDI program had been lost; in part because of the enormous costs and technological difficulties involved, in part also because the rapidly improving US-Soviet relations after Mikhael Gorbachev's rise to power had relieved much of the fear of a Soviet first strike that had underpinned the program in its initial stages. Its original rationale was further weakened in the course of the Bush Administration, when the START 1 and 2 Agreements virtually imposed that shift from an offense-

dominated to a defense-dominated world which Reagan had called for in his "Star Wars" speech. When the first US post-Cold War Administration took office in January 1993, it needed less than six months to revoke the "broad" interpretation of the ABM Treaty offered by the Reagan and Bush Administrations. In contrast to his Republican predecessors, who had read the Treaty to permit development and testing of space-based ABM systems, President Bill Clinton made it clear that he considered the SDI to represent a violation of the letter and spirit of the Treaty, and committed himself to terminating the program.<sup>171</sup>

The post-MAD phase of the Cold War in the USA was characterized by strong public fears of nuclear war; not since the early 1960s had there been such mass demonstrations of grassroots anxiety in Western societies as during the first term of the Reagan presidency. Reagan himself tried to alleviate these very earthly fears of a nuclear Armageddon by offering the vision of a heavenly shelter against the Soviet threat. That the vision collapsed - and probably never was scientifically sound in the first place - may be less important than the fact that it was presented and pursued with such remarkable determination. In historical perspective, SDI may well stand as a symbol of US resurgence in the post-MAD period of the Cold War. In their quest for marginal superiority, US policymakers from Carter to Bush pressed hard for deep cuts in those categories of offensive forces that were considered the most threatening to the United States, notably the Soviet heavy and mobile ICBMs, thereby hoping to enhance first-strike and crisis stability. They also looked for ways and technologies that could help to change the balance between strategic offense and defense in favor of the latter, with Reagan's "Star Wars" program as the ultimate proof of a failed, or at least premature, effort. At any rate, when supplemented with strong efforts in C<sup>3</sup> development, stealth technologies, and increased counterforce capability for both the sea- and ground-based legs of the strategic triad, the arms



control and strategic defense policies of the last three Cold War administrations were instrumental in changing the strategic balance once again in the favor of the United States. If only on the margin, that shift may very well have played a significant role for the peaceful ending of the Cold War. After all, if Wholstetter was right and the US-Soviet balance of terror was indeed a "delicate" one, then such margins were really the most central point.

## ***Conclusion: A continuous search for superiority***

The key argument of this study is that US nuclear policy throughout the Cold War was characterized by a quest for superiority, and that this *Leitmotif* is essential to understanding how US doctrine, AED policies, arms control positions, and strategic defense programs evolved in the dynamic strategic environment of that period. However, "superiority" meant different things at different times, and was intended to serve slightly different goals. It was also sought in different areas of capability, which reflected shifting technological opportunities and shifting Soviet threats.

Beginning with the crucial question of goals, we have seen that when the first discussions started on how the US monopoly in nuclear weapons could serve US national interests, the military and political leaders of the Truman Administration singled out three over-riding goals or functions: to deter Soviet aggression, to secure a rapid and decisive victory in case of war, and to bolster West European morale despite local Soviet superiority in conventional forces. How did each of these goals fare in the next four-and-half decades?

Nothing in the primary and secondary sources consulted for this study suggests any significant changes concerning the first and principal goal. Deterrence remained the chief objective of US nuclear policy throughout the Cold War; an unswerving constant against which all other policy modifications and doctrinal changes have to be measured. The only time when anyone seriously challenged the primacy of deterrence was in the early and mid 1950s, when some military leaders, primarily from the SAC headquarters, raised the possibility of *preventive war*. What triggered their inquiries were several top-secret reports prepared by the NSC and various military agencies in 1952-53, identifying passive and active strategic defense as "the Achilles

heel of [US] national security".<sup>172</sup> Whereas the State Department, the Pentagon, the JCS, and the President all reacted to these reports by putting more emphasis on programs that could enhance the strategic defense capabilities of the United States, and make it harder for Soviet bombers to strike against US targets, a small minority of officers recommended a radically different solution. Arguing that by 1954-1955 the USA would become vulnerable to a surprise atomic attack by Soviet forces and that strategic defense could never be sufficiently effective under such circumstances, they concluded that the only way to ensure that US nuclear power would be able to influence the outcome of a future Soviet-American war was by striking first, before a single Soviet strategic bomber had left the ground. This view never won general acceptance, however, even though Eisenhower as late as March 1959 wondered aloud whether it would not be in the US interest to "start fighting now" instead of "waiting to go quietly down the drain".<sup>173</sup> When in a more serious mood, Eisenhower always stressed that preventive war would both violate national tradition and be practically impossible to execute by a democratic state,<sup>174</sup> a position apparently shared by the vast majority of his military and political advisers.<sup>175</sup> By early 1955, the Eisenhower Administration revised its basic national security policy in light of the emergence of a Soviet "*net* capability to strike a crippling blow at the United States". Even with this radical change in the strategic environment, the Administration confirmed the principal objective of US nuclear policy as it had been defined by its predecessor in 1946-48, during the time of US monopoly: the central aim was still "to deter the Communists from use of their military power".<sup>176</sup> None of Eisenhower's successors seem ever to have departed from that overriding goal.

The situation is less clear with regard to the second and third objectives. All US administrations seem to have shared the position of the Eisenhower Administration that, in addition to

detering Soviet aggression, it was a major aim of the US strategic forces to keep the nation prepared to "cope successfully with general war" should it ever be forced upon the United States.<sup>177</sup> Likewise, none of their successors seem seriously to have questioned the conclusion of the Truman and Eisenhower Administrations, that the strength of the US strategic and other nuclear forces could help, in a crucial way, "in maintaining the morale and will of the free world to resist aggression".<sup>178</sup>

However, despite general consensus about the content of these goals, there were important nuances in how successive administrations set about to obtaining them.

In the pre-MAD era, US authorities clearly hoped for a swift and decisive military victory should there be a breakdown in central or extended deterrence. At the outset of the Cold War, American decisionmakers hoped that its nuclear monopoly would ensure a US victory regardless of how and where war broke out. By 1950, that optimism was gone, and as Soviet offensive capabilities continued to grow - adding thermonuclear bombs, long-range bombers, and ballistic missiles to an already impressive conventional and nuclear arsenal - it became increasingly clear that the outcome of a conflict would be decided by the *timing* of the US nuclear offensive. Having rejected the notion of preventive war, the Eisenhower Administration never ruled out the possibility of nuclear *pre-emption*, however.\* With a recognized Soviet capability to destroy American cities and other vital assets with its offensive nuclear forces, preemption was really the only realistic way in which the United States could fulfill its "determination to prevail if general war eventuates".<sup>179</sup> As Eisenhower himself interpreted the

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\* Nuclear "preemption" refers to a massive nuclear first strike based on solid evidence of an imminent Soviet attack. In contemporary discourse, the same phenomenon is now often referred to as a "launch-on-warning" strategy.

ruling of NSC 5602/1 on this matter, "any war in which Russian troops were involved directly against United States forces" would be general war, and in any such situation he would order SAC in the air "as soon as he found out that Russian troops were on the move." When Army Chief of Staff, General Taylor, protested that this launch-on-warning strategy would be suicidal in a situation of mutual deterrence, the President brushed him aside, lecturing that in case of any hostile Soviet action, immediate and massive retaliation would be the "key to survival".<sup>180</sup> Since the scenario discussed was a conventional Soviet attack on US forward-based forces, "retaliation" in this case was simply another word for "pre-emption".

The Kennedy Administration fully shared the objective of US victory should deterrence fail and general war break out. However, with the undeniable threat of thermonuclear-capable Soviet ICBMs, victory - in any meaningful interpretation of the word - could be achieved only if the fighting were kept at levels below a cataclysmic full-spectrum employment of nuclear forces. More specifically, it was hoped that a forceful demonstration of clear US superiority at all levels of limited nuclear war-fighting would persuade the Soviet leadership to surrender, or at least to end the fighting on terms favorable to the United States. Thus, Flexible Response was intended not only to bolster deterrence, but also to provide guidance for how the United States and its allies could prevail in a general war against an enemy that was considered inferior, but still capable of inflicting intolerable damage upon the Western world.

More than anything else, it was the collapse of the latter aspiration that paved the way for Assured Destruction. What happened was basically that McNamara and his advisers lost faith in the possibility of winning a nuclear war. This had to do partly with the growth of Soviet offensive capabilities, and partly with the lack of defensive countermeasures. The late

1950s and early 1960s were not so much a matter of alleged bomber or missile gaps, as of *a general, and rapidly widening "technology gap" between strategic offense and defense*. US authorities responded to the resulting mutual hostage situation by putting even more emphasis on *avoiding* nuclear war. The means applied were revolutionary in the sense that they, in various ways, transcended the traditional instruments of deterrence. Rather than trying to deter Soviet aggression exclusively by means of superior strategic forces, the Johnson and Nixon Administrations sought to compensate for the loss of meaningful superiority through arms control and other bilateral agreements that they hoped would increase arms race stability and political stability, thus making a general war with the Soviet Union increasingly unlikely. The flip side of all this was that fewer efforts were being made at contemplating ways of assuring US victory, should this "deterrence-plus" stability break down. Hence the notion discussed above, of strategy hitting a dead end under MAD.

It would be mistaken to assume that the revival of strategy in the mid-1970s meant that US policymakers had regained the confidence in victory in a general war that had been so characteristic of the pre-MAD era. Quite the opposite, there appears to have been no disagreement about the utterly destructive consequences of such a war for the United States and its allies. Neither did the spokesmen of the Ford, Carter, Reagan and Bush Administrations sound particularly optimistic about the possibility of limited nuclear conflict - Harold Brown, in particular, stressed that he doubted whether it would be possible to keep even the most limited exchanges from escalating into an all-out nuclear war.<sup>181</sup> What happened was rather that, with the continued quantitative and qualitative growth in Soviet strategic power in the 1970s and early 1980s, US decisionmakers were reminded of Wholstetter's earlier warning that the balance of terror is not automatic, but delicate.

To James R. Schlesinger, this delicacy was first of all connected with the credibility of the US extended deterrent. Because of the essential equivalence in central strategic forces, he never feared a large-scale Soviet first strike against the United States; on this point, he had no quarrel with McNamara. What he worried about, though, was that *because of that parity*, Moscow could for the first time be tempted to take aggressive action against Western Europe or other contested areas of vital importance to the United States, calculating that the possibility of a massive Soviet nuclear response would so unnerve Washington that it would back away from taking serious military counter-measures. The major objective of the Schlesinger Doctrine was to convince the Soviet leadership that there existed no such "window of opportunity" in Western Europe in the shadow of MAD. Rather than putting the US President in a situation in which he might have to choose between general war or local surrender, Schlesinger wanted to present the opposite side with the option of a *localized* American nuclear response to its local acts of aggression. Hence, the doctrine's emphasis on developing C<sup>3</sup> and tactical nuclear weapons capabilities to enforce favorable outcomes of limited nuclear conflicts. In this respect, the Schlesinger Doctrine also represented a revival of the third general goal of US nuclear policy: to bolster Western morale in the face of local Soviet superiority.<sup>182</sup>

What happened in the late 1970s and early 1980s was primarily that Soviet offensive capabilities continued to grow, in absolute as well as relative terms. The deployment of the SS-20, which began in 1977, nullified whatever there was left of Western nuclear superiority in the European theater, thereby adding further weight to the conventional advantages already held by the Warsaw Pact. In the strategic realm, the introduction of MIRVable third-generation Soviet ICBMs, and the SS-18 "heavy" missile in particular, created fears among American analysts and politicians that the US Minuteman force was

serious at risk. No doubt, the remote but theoretical possibility of a Soviet "out-of-the-blue" first strike against the US ICBM silos was well exploited of by the military services and other organizations with a stake in US defense production. However, this fact should not allow us to dismiss the sincerity of those who feared the political and military consequences of a shift in the strategic balance, away from essential equivalence and toward partial Soviet superiority.

According to influential conservative analysts at the time, the "window of opportunity" due to the new Soviet superiority in land-based ballistic missiles would, if unchecked, eventually allow the Soviets to dictate the outcome of almost any bilateral or international conflict. According to this logic, the Schlesinger Doctrine had done no more than to supply the United States with a handful of limited nuclear options, each of which it was hoped would persuade Moscow to stop the fighting in fear of further escalation. But what if the Soviet leaders, with the looming threat of the SS-18s behind their back, simply upped the ante and struck back? In the judgement of Colin S. Gray and Keith Payne, the risk would then be that the United States - having no other credible counter-option than the massive and suicidal first strike - would succumb to the "paralyzing impact of self-deterrence".<sup>183</sup> Limited nuclear options were the tactics of the strong, they argued, but in the mid- and late 1970s, the United States had been unable to maintain its upper end of the strategic balance. With the Soviet Union on the verge of strategic superiority, the material base for the Schlesinger Doctrine had evaporated. The only way out of this dilemma, they concluded, was to increase the US capabilities for *all kinds of conventional and nuclear warfare*, and to work out strategies for their use which would convince Moscow that aggression could never pay. This line of reasoning enjoyed considerable support within the military and national security establishments of both the Carter and Reagan Administrations.<sup>184</sup> Thus, the



revival of strategy in the late 1970s and early 1980s reflected a rather wide-spread conviction that, in the words of Ronald Reagan, the security of the United States was "based on being prepared to meet all threats".<sup>185</sup>

Needless to say, this was an extremely demanding proposition. In a way, it was reminiscent of the "symmetrical" containment strategies of the early 1950s and early 1960s, only that the call for symmetry now applied also to the nuclear-strategic area of competition. Furthermore, Reagan's rearmament programs were based on a totally different economic philosophy and, one might add, a totally different national economic capability. That aside, the 1950, 1961 and 1981 revisions of US basic national security policy had some very similar implications: They all resulted in ambitious R&D and procurement programs for the armed forces, in radical increases in the defense budget, and - as an aggregate effect of all this - a renewed quest for strategic superiority vis-à-vis the Soviet Union.

However, there were crucial qualitative differences between the superiority sought in these three cases. The 1950 rearmament program was a response to a number of perceived negative trends in the East-West relationship, but first of all to the loss of the US monopoly in nuclear weapons. Foreseeing that its "winning weapon" was a wasting asset as a general deterrent of Soviet aggression, the Truman Administration embarked on an ambitious double-track policy aimed at restoring US superiority in both conventional and strategic forces. Together, these efforts were meant to provide the United States with that "preponderance of power" which men like Paul Nitze and Dean Acheson believed was needed to deter, or, if necessary, cope with Soviet aggression at the local as well as strategic level.<sup>186</sup> However, even if the Soviet nuclear test in September 1949 was a watermark in the Cold War, its short-term implications for the strategic balance were mostly symbolic in nature. What is so

remarkable about the 1950 rearmament programs, therefore, is that they - in addition to being infused with anger over the "loss" of China and near-loss of Korea - were propelled basically by an *anticipated* rather than actual loss of strategic superiority. As late as in 1954-1955, the envisioned years of "maximum danger", America's privileged position remained basically intact. The United States was still in a position of "*absolute* superiority", in the sense that, in a general war, it would probably have been capable of completely destroying the Soviet Union without risking irreparable damage to its own society. After 1955, however, the successive deployment of Soviet strategic bombers and development of a Soviet ballistic missile capability made the US position much more precarious.

The build-up initiated as part of the Kennedy Administration's shift to Flexible Response reflected this development. By then the strategic balance was clearly in transformation - not so dramatically as Kennedy had claimed during the 1960 presidential campaign, but parity was on its way as a dark expanding cloud on the horizon. To seek outright superiority would now be a futile exercise. In the age of ballistic missiles the best one could hope for was to preserve what Nixon would later call "strategic sufficiency" - that is, capabilities strong enough to decide, if not dictate, the outcome of any military conflict short of unrestricted nuclear war. To maintain this state of "*essential* superiority", the Kennedy Administration accelerated ongoing modernization programs, made a more determined effort in the area of civil defense, and started upon the long journey toward increased flexibility in and control over nuclear operations.

The build-up of the early 1980s was yet another story. More than anything, it was motivated by a sense of insecurity caused by the Soviet Union's tremendous gains in offensive strategic power during the 1970s. Whereas the Johnson and Nixon Administrations had gone a long way towards accepting the

notion of parity, or "essential equivalence", we must bear in mind that the *actual* strategic balance at the time was still clearly in favor of the United States (whether the edge was clear enough to have any practical military or political importance, is another matter). It was not until the deployment of MIRVable third-generation ICBMs, the Backfire bomber, and SS-20 in the mid- and late 1970s that the Soviet Union achieved true parity in offensive strategic forces. What distinguishes the Carter-Reagan build-up from those of the Truman and Kennedy Administrations, therefore, is that it originated from a situation of lost superiority. As we have seen, none of the post-MAD administrations in the United States seriously believed in the possibility of denying the Soviets true parity in central strategic forces - the question was rather whether it would be possible to deny them "essential superiority". What happened instead was that the United States began to focus more on technologies that could help to assure an American edge in other but closely related areas, such as C<sup>3</sup> facilities, hardened-targets destruction, "stealth" aircraft, cruise missiles, and strategic defense systems. What these achievements added up to was not to reinstall the lost US lead in central strategic capabilities, but to strengthen the relative power of the United States in those areas that would be crucial for the outcome of any limited conventional or nuclear conflict, including protracted counterforce strikes on both sides. Thus, more than trying to retain a situation of absolute or essential superiority, the Carter and Reagan Administrations were looking for ways to regain what we might call superiority on the margin, or "*marginal* superiority".

In sum, US nuclear policy in the Cold War was characterized by a continuous search for superiority. But since the long-term trends in actual strategic capabilities were moving mostly in favor of the Soviet Union - resulting in successive shifts in the overall strategic balance from clear US superiority via "essential equivalence" to true parity - this quest may well be seen as a

defensive undertaking: All in all, it was more a question of keeping what one already had, than of seeking new advantages.

This leads us, finally, to the question of motives and reasons. Leaving out the specific bureaucratic, technological, economic, and political factors that were decisive for the choice of particular weapons systems, what factors can best explain the shifts and continuities in US nuclear policy during the Cold War? In particular, what general causes influenced the search, or searches, for strategic superiority?

As I have argued elsewhere, it is extremely difficult to find historical support for any single-factor theory on the arms-race phenomenon. The only sound methodological approach to the problem is that a number of possible causal factors - technological, economic, political, military, etc. - must be considered in each particular case.<sup>187</sup> This is not to suggest that all factors may have been equally influential at all stages of a particular race. On the contrary, there is always a dynamic interplay between the factors involved which may change their relative importance and explanatory power quite substantially over time.

The US quest for strategic superiority in the Cold War is a case in point. As this study has shown, the overall thrust of US nuclear policy - including acquisition and deployment decisions - was determined by a mix of dynamic factors. Aside from the general ideological and geopolitical conflict with the Soviet Union, and the unfavorable imbalance in conventional military forces in Europe as a particular aspect of that conflict, US nuclear policy in the Cold War was essentially a product of four sets of influences:

The first was the technological momentum within the development of nuclear weapons and their delivery systems. No doubt, the confident belief in the possibility of a continuous US

strategic superiority that characterized the pre-MAD period reflected what US policymakers knew about the actual balance of power at the time. In these years, the number of warheads in the US stockpile went up from 2 "Fat Man" plutonium bombs in 1945 to 29,000 nuclear and thermonuclear warheads of almost thirty different types in 1963.<sup>188</sup> By then, the strategic triad was fully in place, with first-generation ICBMs and SLBMs being deployed at high speed and their follow-up systems already at an advanced stage of development. The B-52 strategic bomber, which in 1958-59 had been completed with its G and H models, would remain the mainstay aircraft of the bomber leg throughout the 1960s and 1970s. No doubt, the tremendous increase in capabilities and options resulting from these technological developments played a constituting role for the nuclear policies of the Truman, Eisenhower, and Kennedy Administrations.

In contrast, the MAD period saw the end of the numerical growth in warheads and delivery systems. Thus, in 1967 the stockpile reached an all-time peak of 32,000 warheads, and the size of the ICBM and SLBM forces was fixed at respectively 1,054 and 656 missiles - numbers never to be exceeded during the Cold War. Whereas important qualitative improvements took place within each leg of the triad, such as deployment of the FB-111 bomber (with SRAMs), conversion of Polaris to Poseidon class submarines, and deployment of Minuteman III ICBMs, none of these shared the revolutionary character of the changes in the preceding decade. Since there was a tremendous growth in *both* quantitative and qualitative capabilities of the Soviet forces in the late 1960s and early 1970s, this combination of numerical stagnation and moderate technological improvements on the US side help to explain why the nuclear policies of the Johnson and Nixon-Ford Administrations were focusing so much on arms race stability and measures that, with Soviet collaboration, could cement the mutual hostage relationship.

The late 1970s and 1980s marked a revival of technological dynamism. In the area of strategic offense, US capabilities were increased by the deployment of new weapons systems like the air-, sea, and ground-launched cruise missiles, the "stealth" aircraft, and MIRVed ICBMs and SLBMs. In addition, significant improvements were made in re-entry vehicle technology and warhead production, which greatly enhanced both the accuracy of ballistic missiles and their capability to kill hardened targets. Combined with important advances in C<sup>3</sup> and intelligence capabilities, these technological breakthroughs represented at least a "marginal" revolution in US offensive strategic power. The doctrinal shift in favor of counterforce and protracted nuclear war-fighting options could hardly have taken place without these technological improvements. Likewise, aiming far beyond the current state of the art in a number of sophisticated technologies, Reagan's "Star Wars" program would probably have been unsalable on Capitol Hill had it not been for the significant advances that had been made in micro-electronics, high energy and pulsed power physics, and in related sciences, during the late 1970s and early 1980s.

A second factor of direct importance to the making of US nuclear policy in the Cold War was economy. In short, whereas the technological momentum was crucial in defining what military-strategic *possibilities* were available at any particular time, how US policymakers tried to transform these possibilities into actual capabilities depended heavily on their perceptions of the state of the national economy, as well as on their general notions about budget balancing and the "optimum mix" between private and federal investments. Interestingly, the dramatic increase in nuclear capabilities that characterized the pre-MAD period was *not* based on a common set of economic preferences. What happened in the 1950s and early 1960s was rather that an intensive development of strategic nuclear forces appeared rational from a conservative as well as liberal-expansionist

economic viewpoint. Truman (post-Korea) and Kennedy were both willing to increase, at least temporarily, the level of federal spending for defense in order to maintain overall strategic superiority. Although their military build-ups were designed primarily with the aim of increasing US conventional capabilities, both ended up supporting a large increase in the funding of strategic weapons programs as well - in fact, the relative share that these programs had of the total defense effort reached an all-time high during the Kennedy Administration. In comparison, Eisenhower's position was very different. As Dulles once put it, what he wanted for the United States and its allies was "a maximum deterrent at bearable costs."<sup>189</sup> To be true, his years in office saw a steep increase in allocations for nuclear weapons, but it is important to note that, unlike the Truman and Kennedy buildups, this boom in funding for defense was *not* part of a general expansion of US military programs. Quite the opposite, the growth took place because investment in strategic weapons systems were thought of as a way to bring *down* the total level of military spending.

The MAD years were characterized first by a diversion of military funds into the Vietnam War, and thereafter by an effort to check the growth which that involvement caused in defense spending. Both policies implied a less vigorous development of the strategic forces than might otherwise have been the case. To the fiscally conservative Nixon and Ford Administrations, the perceived necessity of *reducing* the defense budget probably served as an extra incentive for strategic arms control - the cheapest way, they hoped, of halting the negative trend in the strategic balance.

Carter was the first fiscal conservative Democratic candidate to win the presidency since Franklin D. Roosevelt in 1932 (that the latter soon emerged as an all-time big spender, is another story). One of Carter's applause lines in the 1976 presidential campaign

was that he would be "trimming away the fat" in the defense budget so that the USA could have a lean, supple and muscular defense.<sup>190</sup> Even though his promise to reduce the total spending for defense by \$5-7 billion was soon converted into a call for a 3% annual increase, his fiscal conservatism undoubtedly made him a very cautious spender. More than anything, he was against spending billions of dollars on strategic weapons systems that he considered to be either of questionable military value or so expensive that their deployment could not be justified regardless of their projected capabilities. As we have seen, Carter's search for the most *cost-effective* alternative was a major factor in his decision to cancel the prestigious B-1 bomber program. Budgetary concerns also played a role in his decisions to close the production line for the Minuteman ICBMs, and to slow down both the MX and Trident programs. Thus, whereas Carter came out strongly in favor of modernizing the strategic forces, his economic philosophy - as well as the unexpected high inflation in 1977-78 - made him careful not to overload the federal budget in general and the defense budget in particular. All in all, more than influencing the content and direction of his nuclear policy, Carter's view on the economy played a decisive role for the size and pace of his strategic weapons modernization programs.

The same can be said about Ronald Reagan, but with almost the opposite result: his economic philosophy made him support a dramatic increase in the defense budget. The Reagan military buildup no doubt was motivated by political and strategic concerns. However, his peculiar economic philosophy - nicknamed "Reaganomics" by friends, "trickle-down economics" by foes - played an important role as well. Exactly as tax reductions for the rich were supposed to induce a growth in private spending that, due to an anticipated expansion of the overall economic base, would benefit the lower-income tax payers as well, so were the dramatic increases in defense



spending supposed to trigger growth and reduce unemployment in key industrial sectors that, eventually, would spark off growth in the national economy as a whole. In the words of one observer, Reagan was "the first military Keynesian"; a politician who tried "spending his way out of the recession" of the early 1980s.<sup>191</sup> The reference to Keynes is, of course, less relevant for the Reagan Administration's economic policy in general, but it certainly hits the nail on the head as far as its defense programs are concerned. As Caspar Weinberger put it in his Fiscal Year 1983 Report to Congress, in which he asked for support to Pentagon's \$1.7 trillion five year defense plan, "fears that the defense budget of this Administration will strain the American economy are unfounded. [...] Defense spending, like other Federal spending, produces something which contributes to the people's welfare."<sup>192</sup>

As we all know, things did not work out exactly that way. In the early 1990s, when president Bush administered a substantial reduction in defense spending, part of the reason was the urgent necessity of stopping the enormous federal deficit caused by the military buildup of his predecessor.<sup>193</sup> Although Bush, in deference to Reagan, justified the cuts as part of the "peace dividend" made available by the reduced Soviet threat, it was clear from the very beginning of his term that he favored a more traditional conservative economic policy. As he put it in his inaugural address, the United States had "more will than wallet" - an observation he honored by proposing a defense budget which contained only an inflation adjustment and no real growth. He also revised his predecessors 1990-1994 Five Year Defense Plan, scaling down the assumed annual increase in defense spending from 2% to 1-2% after inflation.<sup>194</sup> This did not hurt the strategic forces programs in any disproportionate way, however. On the contrary, within the total reductions, funding for strategic forces were subjected to smaller cuts than those for general purpose and tactical nuclear forces.<sup>195</sup>

In sum, economic considerations influenced US nuclear policy in various important ways: as part of the rationale for giving higher priority to nuclear than conventional forces (early Truman and Eisenhower); as justification for a buildup of *all* forces, including strategic ones (post-1950 Truman, Kennedy, and Reagan); and, alternatively, as an incentive for a less vigorous expansion of strategic capabilities (Johnson, Nixon, Ford, Carter, and Bush). It is noteworthy, however, that until the final disintegration of the Soviet Union in 1991, no US administration ever used economic arguments for justifying a net *reduction* in their strategic weapons programs.

A third factor influencing the evolution of US nuclear policy in the Cold War was inter-service rivalry. The sources consulted for this study suggest that this particular bureaucratic factor may have been less important in the MAD and post-MAD periods than in the pre-MAD period (1945-63). After the mid 1960s, there is really no parallel to the way in which the fight between the services for operational assignments, R&D funds, procurement contracts, and deployment responsibilities were influencing US nuclear doctrine as well as AED policies in the Truman and Eisenhower years. Part of the explanation is that some of the incentives for such intra-service competition disappeared when the success of the Polaris program finally allowed the Navy to play an independent and increasingly important strategic role. Thus, from the early 1960s onwards, *both* the Navy and the Air Force were in favor of a general expansion and modernization of the strategic forces. Naturally, there were occasional resurrections of old rivalries also in this regard - the Navy's attempt at using the deadlock over the MX basing mode to propel its own Trident II program through Congress is but one example.<sup>196</sup> However, the general trend was that inter-service rivalry became a less important influence than the joint influence provided by the JCS and its assisting bodies.

Another, closely related reason for this development was that, in the late 1950s, SAC not only lost its monopoly on the strategic nuclear mission in war, but was also deprived of its supreme responsibility for preparing the target lists and operational plans for that mission. The establishment of the Joint Strategic Target Planning Staff in 1960 was an important instrument in this coordination effort, which gradually - through the National Strategic Target List and the SIOP - helped to integrate otherwise conflicting influences from the Navy and Air Force into US strategic war planning. All in all, it appears that the late 1950s and early 1960s represented a watershed after which the main impact of the military services on US nuclear policy was provided for by joint actions and pressures, rather than by independent initiatives at the rival services' expense. While impossible to prove, it is not unlikely that this development played a crucial role in maintaining the high share that the strategic weapons programs held of the total defense effort, especially in R&D.<sup>197</sup>

A fourth major influence that had great impact on the evolution of US nuclear policy throughout this period was Soviet nuclear strategy and capabilities - or, rather, how these were perceived by US authorities. In the pre-MAD period, US decisionmakers were permanently worried about the growth in Soviet military capabilities, which they generally saw as hard evidence of aggressive intentions. Every new Soviet achievement in the strategic nuclear weapons field, from the first atomic test in the fall of 1949 to the Sputnik launch in October 1957, triggered a new wave of public and government concern that the Soviet Union was about to catch up with or surpass the United States in offensive strategic capabilities.

The Soviet successes no doubt made it easier for successive US administrations to maintain the growth in US R&D and procurement programs. Less obvious, but equally important,

they also had crucial influence on US nuclear doctrine and nuclear weapons employment policies. Without the growing nuclear capabilities of the Soviet Union, the Bravo mission would never have gained the preeminence it had in US nuclear war planning in the 1950s. Moreover, Soviet offensive strength was instrumental in shaping the "everything-at-once" makeup of the strategic war plans developed under the Atomic Blitz and Massive Retaliation strategies. In a similar vein, the shift to Flexible Response cannot be fully understood unless one takes into account how the growth in Soviet strategic power in the preceding years was perceived by Kennedy and his advisers. More than anything, it was the increased American vulnerability to Soviet nuclear aggression that convinced them that Massive Retaliation had to be replaced by a more credible strategy.

In the pre-MAD period, US decisionmakers were primarily concerned with Soviet nuclear capabilities, less so with how the Soviets were likely to employ their weapons in case deterrence should break down. This was natural, one might say, since the dominant expectation was that the US superiority in nuclear weapons would ensure a swift and favorable outcome of any general war between the superpowers. However, the focus and concern of these decisionmakers changed dramatically during the next decades as the US lead in offensive strategic forces was diminishing and the Soviet Union obtained "essential equivalence". By the early 1970s, when that equivalence had been firmly established, it was evident that US decisionmakers were becoming increasingly preoccupied with what their opponents were thinking and planning in regard to the possible employment of Soviet nuclear forces in a limited or a general war with the West.

This is not to say that capabilities were disregarded: they were not. For instance, it was the dramatic growth in Soviet strategic forces that had brought McNamara to the conclusion that

strategic defense was a lost case and that, for the future, the key to US security would be to cap the arms race in order to stabilize the mutual hostage situation. Likewise, the perception of an emerging Soviet edge in land-based ballistic missiles was an essential part of the equation that led the first Nixon Administration to sign the SALT 1 Treaty. However, both within and outside government influential voices were heard questioning the assumption that the Soviet leadership actually shared the dominant US perception that MAD made war unwinnable, and therefore utterly irrational as well. Instead, they argued, evidence suggested that the Soviet military was in fact preparing itself for fighting and winning wars with the West, regardless of whether any or both sides should decide to cross the nuclear threshold.

It was precisely this perception of a professional Soviet interest in nuclear war-fighting options that helped to revive US nuclear strategy in the mid 1970s. Having reached a dead end some ten years earlier, as part of the general sanctification of MAD, US nuclear strategists and war planners once again started to think seriously about whether and how it would be possible for the United States to ensure a favorable outcome in military confrontations with the Soviet Union short of general war. This revival of nuclear strategy, started *in spe* under Schlesinger but rapidly brought to maturity during the Carter and Reagan Administrations, should therefore be seen primarily as an action-reaction phenomenon. Not only was it triggered by what influential US decisionmakers believed was happening on the Soviet side. Equally important, US policymakers were hoping that this copycat approach to nuclear strategy would help to strengthen the US deterrent. According to their line of reasoning, the United States could check whatever aggressive ambitions the Soviets had by building superior capabilities in exactly those marginal areas that were likely to tip the balance in any local and/or limited nuclear war. This task, they thought,

could be fulfilled by taking full advantage of the US superior technology base, especially its significant leads in micro-electronics, advanced materials, computer and sensor technologies. In accordance with this prescription, the 1980s were characterized by an immense US effort at developing the "smart weapons", C<sup>3</sup> and intelligence capabilities needed to persuade Soviet decisionmakers that whatever limited nuclear war scenarios they might be contemplating, they would find themselves with inferior forces and fewer options than the United States. In short, the countervailing strategy was intended to deter Soviet aggression both by copying Soviet nuclear strategy, and, at the same time, by outclassing those Soviet forces that were assigned for the possible implementation of that strategy. While they were still seriously concerned about the growth of Soviet capabilities in central strategic forces, it seems that in the post-MAD period US decisionmakers became increasingly pre-occupied with Soviet strategic concepts and Soviet post-deterrence scenarios. Apparently, their interpretation of what the Soviets were up to in this respect had a correspondingly increasing influence upon the making of US nuclear policy.

On the basis of these conclusions about how technological developments, economic considerations, inter-service rivalry, and Soviet actions were influencing US nuclear policy in the Cold War, what can be said about the general character of that policy?

One important characteristic was the *gradual shift from an almost "autistic" to an increasingly reactive policy*. In a sense, the Baruch Plan for international atomic energy control as well as the early US nuclear strategies (Atomic Blitz and Massive Retaliation) were all fundamentally insensitive to Soviet fears, strategies, and capabilities - it was as if US decisionmakers believed that their overwhelming superiority in nuclear strategic forces would enable them to dictate the rules of the game for

both nuclear disarmament and nuclear war. This "autistic" approach became more and more problematic as Soviet capabilities increased in the late 1950s and early 1960s. Flexible Response and Assured Destruction represented an important break in this respect: despite other differences, both acknowledged that the credibility of US nuclear policy could only be maintained by giving increased attention to what was going on the other side.

However, whereas the McNamara years saw an increasing US willingness to mold its nuclear policy in accordance with ongoing or anticipated changes in Soviet capabilities, there was no parallel growth of receptiveness in regard to Soviet doctrine and likely targeting philosophy. This was precisely what the Schlesinger Doctrine brought into the equation. Both Escalation Control and the Countervailing Strategy was characterized by an unprecedented willingness to register, analyze, and counter Soviet strategic options, operational plans, and war-fighting capabilities. The increased US emphasis on C<sup>3</sup> and counter-force capabilities provides further evidence of the same trend. A similar development can be registered in US arms control positions as well - from a rather narrow focus on arms control and political stability in the MAD years, toward the much more ambitious tasks of first strike and crisis stability under Carter, Reagan, and Bush. Whereas both Johnson's 1964 "freeze" proposal and Nixon-Ford's SALT I proposals reflected a growing US concern with Soviet offensive capabilities, the strategic arms control positions of their successors reflected a wider set of concerns as well as ambitions: fearing that the Soviet leadership was less inhibited in terms of surpassing the nuclear threshold, the Carter, Reagan, and Bush administrations saw arms control as an instrument by which they could promote changes in the Soviet strategic force posture that would decrease its suitability for the kinds of aggressive nuclear operations

which US decisionmakers thought the Soviets would be most likely to contemplate in a crisis.

Another, and closely related, feature that emerges from this study is that, despite the generally comfortable military position of the United States, its nuclear policy was basically *defensive* in character. The defensiveness was displayed in three ways: First, premium was always put on deterrence - even when they searched for war-fighting capabilities, US decisionmakers were primarily looking for ways to keep their opponents from initiating hostilities that could escalate to a limited or general nuclear war. Secondly, when major changes were being made in US nuclear policy, it regularly turned out to be in response to real or anticipated changes in Soviet strategic capabilities, or in Soviet nuclear strategy - at least, this was how most of the changes were explained and justified by US officials. Thirdly, strategic defense always figured high in the total US military RDT&E\* effort: the historical proportion average for the Cold War period was 16%. In comparison, "naval warfare" averaged 14% of total RDT&E, "land warfare" 13%, "air warfare" 13%, and "strategic warfare" 43%.<sup>198</sup> While there were significant variations in these proportions over time, it is important to note that, in an historical perspective, the huge investments in this field during the Reagan years were far from unique. For instance, when Caspar Weinberger asked the Congress for a total of \$2.05 billion to SDI-related R&D in FY 1985, he was careful to point out that during the 1950s the United States had spent more than \$100 billion (in 1984 dollars) on strategic defense.<sup>199</sup> Although McNamara was right that, in terms of deterrence and stability, there are at least two sides to strategic defense, there is no evidence in available sources that the administrations that pushed hardest to increase US capabilities

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\* RDT&E = Research, development, test and evaluation.



in this field - the Eisenhower and Reagan administrations - did so for other than defensive reasons.

On the other hand, and this may sound as a paradox, the defensiveness of US nuclear policy went hand in hand with *a continuous quest for strategic superiority*. There is a very simple explanation for this puzzle: as long as a particular country's relative power is in decline, it might fight successfully to maintain its lead but still feel on the defensive. In brief terms, this was very much what was happening with the US-Soviet strategic balance during the Cold War. The United States was moving steadily downwards - sliding in successive steps from positions of "absolute" through "essential" to "marginal" superiority - but never abandoned its ambition to solidify or even improve the current balance. As Carter's Presidential Directive 18 on "US National Strategy" put it, to deter Soviet aggression and counterbalance adverse Soviet influence in Europe and other key areas, the United States would maintain an overall strategic balance between itself and the Soviet Union "*at least as favorable as that that now exists.*"<sup>200</sup>

The way to maintain or improve the current strategic balance was always to draw on America's comparative advantages: her stronger economy and superior technological capabilities. Thus, a fourth general characteristic of US nuclear policy in the Cold War was the emphasis put on *qualitative, rather than quantitative, improvements* in the US strategic position vis-à-vis the Soviet Union. Evidence of this is found in the enormous investments that were made in R&D for nuclear weapons systems. In the Cold War years, the US Department of Defense spent an average 43% of its total research, development, test and evaluation sources on programs related to "Strategic Warfare". In comparison, the *procurement* proportion average for "Nuclear Forces" in the same period was only 15%.<sup>201</sup> Thus, it appears that the US nuclear weapons buildup was an extremely research

intensive business, in which a disproportionate amount of the total procurement costs was spent at the drawing board and in the test laboratories. The search for qualitative gains was reflected in other ways as well. For instance, US arms control positions appear to have been more influenced by how US decisionmakers perceived the qualitative than the quantitative aspects of the strategic balance. From the very beginning of the US-Soviet strategic arms control talks, a pattern emerged which showed that the US was far more concerned to maintain its lead in cutting edge technologies - such as MIRV, cruise missiles, or "star wars"-related technologies - than to use any of these assets as bargaining chips to obtain additional quantitative cuts in offensive Soviet weaponry. In practical terms, this meant that US arms control negotiators were more inclined to make concessions on numbers than on technologies, while the opposite had been true of their Soviet counterparts (who at least were eager to restrict qualitative improvements in areas where they found it difficult to compete).

The fall of the Soviet Union left the United States as the only superpower on the scene. Even in military terms it is now clearly in a much stronger position than any of its potential enemies. This means that, in the future, the defensive character of US nuclear policy may be less striking than in the past. On the other hand, there is no reason to believe that it will call off its successful search for strategic superiority: the importance of military power may be decreasing worldwide to the benefit of economic and various kinds of "soft" power, but not to an extent which would make strategic superiority an irrelevant asset for a country with global interests. As before, it is every reason to expect that the key to US superiority will be found in its unique combination of economic-industrial and technological capabilities. On the threshold to a new historical era, Pentagon officials particularly stressed the crucial importance of maintaining a superior technology base. Looking ahead, into the

post-Cold War world, an official Pentagon report concluded: "Future US military superiority and our capability to deter attack depends on our continued ability to identify and support military important technologies and quickly field technologically advanced weapon systems. Currently, no country is ahead of the United States in any overall area of technology."<sup>202</sup>

Indeed, despite continuous and exhaustive Soviet efforts at catching up the US lead, this statement could, with equal accuracy, have been issued by *any* US administration throughout the Cold War. That fact certainly helps to explain why the "delicate" strategic balance of the Cold War always remained favorable to the United States and its allies.

## Notes

1. Gaddis, *The Long Peace*, pp. 104-146; *idem*, *The United States and the End of the Cold War*, pp. 105-118.
2. Mueller, pp. 55-79.
3. Bruce R. Russett, "The Alleged Role of Nuclear Weapons in Controlling the Soviet-American 'Enduring Rivalry,' and in the Future". Paper presented at the War and Peace Conference, Rjukan, Norway, 16-18 June 1993.
4. Dan Smith, "The Uselessness and the Role of Nuclear Weapons: An Exercise in Pseudo-Problems and Disconnection." Paper presented at the War and Peace Conference, Rjukan, Norway, 16-18 June 1993.
5. There is nothing original in this classification, and the literature is rich in alternative terms for basically the same categories. The particular scheme used here is borrowed from a recently declassified, originally top-secret interagency analysis of US nuclear policy conducted by the Carter Administration. PRM-10, "Military Strategy and Force Posture Review: Final Report", August 1977, p. 33. Sanitized version available at the National Security Archives, Washington, DC (hereafter, NSA).
6. For a presentation of the major arms race-theory schools, see Gleditsch & Njølstad, eds., *Arms Races: Political and Technological Dynamics*.
7. For an early conclusion to this effect, see the so-called Clifford-Elsey Report, "American Relations with the Soviet Union: A Report to the President by the Special Counsel to the President", 24 September 1946, reproduced in Etzold & Gaddis, eds., p. 66.
8. Joint Strategic Survey Committee, "Statement of the Effect of Atomic Weapons on National Security and Organization", 31 March 1946, "Atomic" Series, (8-15-45), Sec. 2, USJCS, Military Branch, National Archives, Washington, DC (hereafter NA).
9. Herken, *The Winning Weapon*, p. 267.
10. Memorandum by the Secretary of the Army (Royall) to the National Security Council, "United States Policy on Atomic Warfare", 19 May 1948, *FRUS*, Vol. I, 1948, pp. 572-573.
11. NSC-30, "United States Policy on Atomic Warfare", 10 September 1948, *FRUS*, Vol. I, 1948, pp. 624-629. The report was approved by the NSC on 16 September 1948.
12. *Ibid.*, footnote 1.
13. This is consistent with his attitude to the atomic bomb operations against Japan during the Second World War. Truman never questioned the legitimacy of the targets preferred by the military planners, and it was only when Secretary of War Stimson protested that Truman decided to remove Kyoto, the old imperial capital, from the target list.

14. Herken, *The Winning Weapon*, p. 263.
15. Cochran, Arkin & Hoenig, p. 15.
16. Cochran, Arkin & Hoenig, pp. 7; Freedman, p. 64; Rosenberg, "US Nuclear Stockpile, 1945 to 1951", pp. 29-30; Thompson, p. 111.
17. Rosenberg, pp. 16-17; Thompson, p. 112.
18. At first, SAC was strongly opposed to diverting its attention and resources to tactical missions, and argued that it was much more cost-effective to use nuclear weapons against industrial and other strategic targets deep behind the tactical battlefield. It was only when the Navy and the non-strategic components of the Air Force threatened to take this tactical mission upon themselves, that SAC volunteered to do it on its own. Freedman, pp. 68-69; Thompson, p. 113.
19. Bundy, p. 231; Rosenberg, p. 23; Thompson, p. 111.
20. Presented in April 1950, NSC-68 was an extremely influential interagency report on US objectives and program for national security. It provided the conceptual and ideological basis for the Administration's new and more militaristic policy toward the Soviet Union after the outbreak of the Korean War. NSC-68, "A Report to the President Pursuant to the President's Directive of January 31, 1950", 7 April 1950, *FRUS*, Vol. 1, pp. 237-292.
21. Memo, Executive Secretary of the NSC (Lay) to the SecState, SecDef, Chairman of the AEC, Director of Defense Mobilization, "Expansion of Fissionable Materials Production", 17 January 1952, President's Secretary's Files, Harry S. Truman Library (hereafter, HSTL).
22. NSC-68, *op.cit.*, particularly pp. 266-292; for an account of the war plans, see Rosenberg, "The Origin of Overkill", pp. 17-21; and Thompson, pp. 92-110.
23. This task was given first priority in the emergency war plans as from August 1950. JCS 2056/57, 12 August 1950, with subsequent decision, 15 August 1950, CCS 373.11 (12-14-48), Sec. 2, JCS, Military Branch, NA.
24. This objective was formally codified in NSC-57, approved in August 1949. Herken, *The Winning Weapon*, p. 301.
25. Herken, *The Winning Weapon*, p. 301.
26. JCS 2056/7, 12 August 1950, with subsequent decision of 15 August 1950, CCS 373.11 (12-14-48), Section 2, JCS, Military Branch, NA.
27. John Foster Dulles, "The Evolution of Foreign Policy", 12 January 1954, *Department of State Bulletin*, Vol. 30, (25 January 1954), pp. 107-110.
28. Wells, p. 34.
29. According to Wells, "the evidence is unmistakable that Eisenhower and his associates intended to use nuclear weapons in military situations short of total war". Wells, p. 37.

30. The new targeting policy was codified in NSC-162/2, which was approved as the basis for US war planning in November-December 1953. Wells, pp. 44-46.
31. Gaddis, *Strategies of Containment*, p. 147.
32. In addition to having shared each of these three assumptions, Eisenhower is reported to have adopted the New Look because it fitted with his interpretation of the current developments in Korea. In his best judgment, what had compelled the North Koreans to attend the armistice talks was his threat in April 1953 to escalate the war, if necessary by nuclear attacks against North Korean and Chinese economic and military targets. Thompson, pp. 129-130.
33. Cochran, Arkin & Hoenig, pp. 7-8, 15.
34. Glenn H. Snyder, "The 'New Look' of 1953", pp. 425-451 in Shilling, ed.
35. Thompson, p. 125.
36. For a contemporary and very influential criticism along these lines, see Wholstetter, especially pp. 217-229 (pp. 149-161 in Bobbitt, Freedman & Treverton, eds.).
37. Rosenberg, pp. 35-50, 66; Thompson, pp. 205-206.
38. The money was used, i.a., to disperse SAC bombers to a larger number of bases; place a portion of them on fifteen-minute ground alert; develop a warning system for incoming ballistic missiles, and accelerate the Polaris program. Thompson, pp. 202-203.
39. Thompson, p. 206.
40. Rosenberg, pp. 34-39, 64-65; Thompson, pp. 145, 211.
41. Cochran, Arkin & Hoenig, p. 15; Rosenberg, p. 23. The term "nuclear warheads" usually refers to all operational bombs, re-entry vehicles, and missiles in the strategic triad.
42. Bundy, pp. 321-322; Rosenberg, pp. 61-65; Thompson, pp. 209-211.
43. Thomas Powers, "Choosing a Strategy for World War III", *Atlantic Monthly*, November 1982, p. 92.
44. Rosenberg, pp. 53-65.
45. Rosenberg, pp. 59-60.
46. Eisenhower's disillusionment with the counterforce option is documented in Rosenberg, pp. 62-63.
47. Quoted in Bundy, p. 321.

48. Rosenberg, p. 62. This way of reasoning sounded as an echo of RAND strategist Bernard Brodie's writings at the time. For instance, Brodie argued in his *Strategy in the Missile Age* (1959) that "for the sake of deterrence before hostilities, the enemy must expect us to be vindictive and irrational if he attacks us." Quoted in Trachtenberg, p. 33.
49. Quoted from JFK's first message to Congress on US defense policy, March 1961. Gaddis, *Strategies of Containment*, p. 214.
50. Gaddis, *Strategies of Containment*, p. 214.
51. Thompson, pp. 223-224.
52. Ball, p. 10; Rosenberg, p. 68; Thompson, pp. 235-236.
53. Freedman, pp. 234-239.
54. Ball, p. 11.
55. Bundy, p. 354.
56. Wholstetter, pp. 217-222 (pp. 149-154 in Bobbitt, Freedman & Treverton, eds.).
57. Bundy, p. 352; Thompson, pp. 229-230.
58. Brown, pp. 219-226.
59. Treverton, "From No Cities to Stable Vulnerability", p. 193 in Bobbitt, Freedman & Treverton, eds.
60. Thompson, pp. 230, 289.
61. As Marshal V.D. Sokolovsky, a leading Soviet strategist, wrote at the time: "A strategy which contemplates attaining victory through the destruction of the armed forces cannot stem from the idea of a 'retaliatory' blow; it stems from preventive action and the achievement of surprise." Quoted in Freedman, p. 239.
62. The "defense is bad" argument was developed in the early 1960s by the two liberal American nuclear physicists Jack Ruina and Murray Gell-Mann. Gregory F. Treverton, "From No Cities to Stable Vulnerability", p. 200 in Bobbitt, Freedman & Treverton, eds.
63. Ball, p. 13; Freedman, p. 243.
64. Ball, p. 13; Freedman, pp. 305-306..
65. Treverton, pp. 192-194 in Bobbitt, Freedman & Treverton, eds.
66. Statement before the Defense Subcommittee of the House Appropriations Committee in February 1963, as quoted by Thompson, pp. 247-248.
67. McNamara's increasing disillusion with strategic defense is accounted for by Freedman, pp. 249-253.

68. McNamara, *Fiscal Year 1969-1973 Defense Program and the 1969 Defense Budget*, p. 54.
69. Ball, pp. 10-13.
70. McNamara, *Fiscal Year 1969-1973 Defense Program and the 1969 Defense Budget*, pp. 47-48.
71. Ball, p. 14.
72. Ball, pp. 14-15; Freedman, pp. 245-246; Thompson, p. 283.
73. Cochran, Arkin & Hoenig, pp. 15; Thompson, pp. 314-316.
74. Thompson, pp. 312-314.
75. Trachtenberg, p. 44.
76. Ball, pp. 17-19.
77. Bobbitt argues that the only significant difference between the two was that the targeting options under Strategic Sufficiency were somewhat more massive. Bobbitt, "Selective Options and Limited Responses, 1974-83", p. 338 in Bobbitt, Freedman & Treverton, eds.
78. Freedman, pp. 375-382; Thompson, pp. 392-393.
79. Garthoff, pp. 69-76, 127-133.
80. Bobbitt, pp. 339-343.
81. Freedman, pp. 377-379.
82. Ball, pp. 18-20; Thompson, pp. 450-460.
83. Ball, p. 19; Freedman, pp. 377-382; Garthoff, pp. 417-418; Thompson, pp. 450-457.
84. Interview with James R. Schlesinger, 17 June 1993, Rjukan, Norway.
85. This fear was based on two parallel developments: The first was the numerical increase in Soviet ICBMs. By 1972, the Soviet Union had deployed 1,618 land-based strategic missiles against the US ICBM force of 1,054 missiles; a 50% lead that was preserved by the SALT I Treaty. What really sparked American fears of a growing Soviet first-strike capability was the discovery, in late 1973, that the Soviets were beginning to deploy their third-generation ICBMs -- the SS-17, SS-18, and SS-19s -- which not only had much higher throw-weight than their predecessors, but also proved MIRVable. The early Soviet catch-up in MIRV technology had not been anticipated by US experts, and was seen by many as evidence of hostile intentions. Thompson, pp. 437-439.
86. Thompson, pp. 396-408, 431-436.



87. Thompson, p. 434. In the same period, the total number of nuclear warheads and bombs in the US stockpile went *down* from approximately 27,000 to 25,000, which illustrates the declining importance of the strategic bomber force. Cochran, Arkin & Hoenig, p. 15.
88. An instructive account of this aspect of the Trident II program is given by Spinardi, particularly pp. 172-184.
89. Thompson, pp. 431-436.
90. Thompson, p. 401.
91. Laird, *National Security Strategy of Realistic Deterrence*, p. 74.
92. Thompson, pp. 402-407.
93. It was not until October 1993 that the Clinton Administration's Secretary of Defense, Les Aspin, ordered a comprehensive review of US nuclear doctrine and employment policy. By all indication, the official presidential directive which governed the targeting and employment of US strategic forces in war had not been updated since 1981. "Nuclear Arms Doctrine to Be Reviewed: Comprehensive Evaluation Will Be First Since the End of Cold War", *The Washington Post*, 19 October, 1993, p. A18.
94. PD-18, "US National Strategy", 24 August 1977; PD-53, "National Security Telecommunications Policy", 15 November 1979; PD-58, "Continuity of Government", June 1980; PD-59, "Nuclear Weapons Employment Policy", 25 July 1980; available in partly declassified versions at the National Security Archive, Washington, DC
95. Statement by the Secretary of Defense (Brown) Before the Senate Foreign Relations Committee, 16 September 1980, *American Foreign Policy: Basic Documents, 1977-1980*, p. 146.
96. *Ibid.*, p. 147.
97. According to Thompson, Brown argued that, if the Soviets really believed in war-fighting, then the "most potent deterrent America could possess was a capacity to engage and win nuclear war", regardless of its length and proportions. Thompson, pp. 499-500.
98. Statement by Secretary of Defense (Brown) Before the Senate Foreign Relations Committee, *op.cit.*, p. 147.
99. Ball, pp. 21-24, 31; Thompson, p. 497.
100. Interview with William Odom, General (Ret.) USA, 22 October 1993, Washington, DC
101. Ball, pp. 23-24; Thompson, pp. 501-502.
102. Ball, p. 35.
103. Ball & Toth, p. 68; Thompson, pp. 530-531.

104. Ball & Toth, pp. 72-77.

105. In Carter's assessment, the United States retained "important advantages" in its balanced strategic nuclear capability, even though the Soviet Union's quantitative build-up had given her "functional equivalence in strategic forces with the United States". Address by the President (Carter) at Wake Forest University, 17 March 1978, *American Foreign Policy: Basic Documents, 1977-1980*, p. 21. See also, Address by the Secretary of Defense (Brown) Before the Annual National Convention of the American Legion, 22 August 1978, *ibid.*, pp. 116-119, in which Brown claimed that the United States had the "decisive margin" necessary to win a future war.

106. The Reagan Administration's official goal of prevailing in a nuclear war and being able "to force the Soviet Union to seek earliest termination of hostilities on terms favorable to the United States" appears, implicitly at least, to have presupposed some form of superiority. Weinberger, *The 1984-88 Five Year Defense Plan*, October 1982, The Department of Defense, Washington, DC. As quoted in Thompson, p. 530.

107. Garthoff, pp. 597, 791, 798-800, 849-859.

108. "The President's News Conference of June 30, 1977;" *Public Papers of the Presidents: Jimmy Carter*. 1977, Book Two, p. 1199. Washington, DC, 1978: Government Printing Office; Carter, *Keeping Faith*, p. 82; "Talking Points", undated (June 1977); Handwriting [sic] Files, Box 35, "6/30/77 [1]" folder, the Jimmy Carter Library, Atlanta, GA.

109. Brown, *Flying Blind*, pp. 268-281.

110. Ball & Toth, pp. 79-80.

111. Arkin, Handler, Morrissey & Walsh, pp. 105-106.

112. Spinardi, p. 179; Thompson, pp. 508-509.

113. Cochran, Arkin & Hoenig, pp. 246-248.

114. Statement by the President (Reagan), 19 April 1983, *American Foreign Policy: Current Documents, 1983*, pp. 68-70. Washington, DC, 1985: Department of State. Reagan's decision was essentially based on the recommendations of the Scowcroft Report.

115. The expression is borrowed from Bundy, p. 563.

116. *The Report of the President's Commission On Strategic Forces (The Scowcroft Report)*, 11 April 1983, printed in Bobbitt, Freedman & Treverton, pp. 477-510 (see particularly pp. 503-505).

117. Cited in Herken, *Counsels of War*, p. 334.

118. Gaddis, "The Unexpected Ronald Reagan", pp. 119-132 in Gaddis, *The United States and the End of the Cold War*.

119. This paragraph draws on Tarr, pp. 40-45; and Schelling & Halperin, *Strategy and Arms Control: Acceptable and Unacceptable Challenges*.

120. Joseph S. Nye, Jr., Graham T. Allison & Albert Carnesale, "Analytic Conclusions: Hawks, Doves, and Owls;" Chapter 8 in Allison, Carnesale & Nye, Jr., eds.
121. The history of the Baruch Plan is described in Gerber (1982) and Njølstad (1987).
122. Batyuk, "The Baruch Plan and Russia"; Gerber, especially pp. 91-95.
123. Statement by the President (Truman) at a Meeting at Blair House, 14 July 1949, *FRUS*, 1949, Vol. I, pp. 481-482.
124. The h-bomb decision is analyzed in Njølstad, "Learning from History? Case Studies and the Limits to Theory-Building", pp. 220-246 in Gleditsch & Njølstad, eds.
125. NSC-68, *op.cit.*, pp. 266-267, 285.
126. Thompson, p. 117.
127. Bundy, pp. 305-334; Gaddis, *Strategies of Containment*, pp. 191-193; Jensen, pp. 152-154.
128. Freedman, pp. 165-166; Thompson, pp. 169-179.
129. Talbott, *The Master of the Game: Paul Nitze and the Nuclear Peace*, pp. 66-68.
130. Thompson, pp. 179-180.
131. Thompson, pp. 265-271.
132. Thompson, pp. 273-281.
133. Jensen, pp. 155-156.
134. See, for instance, Khrushchev's confidential messages to JFK of 30 October, 11 November, and 12 December 1962, pp. 62-73, 82-88, and 110-116 in *Back From the Brink: Cuban Missile Crisis Correspondence Between John F. Kennedy and Nikita S. Khrushchev*, Special Edition of *Problems of Communism*, Spring 1992.
135. Quoted in Bundy, p. 547.
136. Thompson, pp. 334-335.
137. Charlton, pp. 4-5; Freedman, pp. 251-253; Thompson, pp. 337-338.
138. Thompson, pp. 339-351.
139. Thompson, pp. 351-354.
140. Speech by the Secretary of Defense (McNamara), 18 September 1967, printed in Bobbitt, Freedman & Treverton, eds., pp. 267-282. See also Charlton, pp. 9-11; Freedman, pp. 254-255.

141. Freedman, pp. 355-356; Thompson, pp. 346-349.
142. As early as 6 March 1969, Nixon directed the "preparation of a US position for possible strategic arms limitation talks with the Soviet Union", and asked the interagency study group to forward its conclusions by 15 May that year. National Security Study Memorandum (NSSM)-28, "Preparation of US Position for Possible Strategic Arms Limitation Talks", 6 March 1969, NSC Files, National Archives, Washington, DC
143. Kissinger, p. 1245.
144. The best account of the SALT 1 negotiations is still Garthoff, pp. 127-198.
145. The so-called Jackson amendment (not to be confused with the Jackson-Vanik amendment to the US Foreign Trade Law of 1974) urged the President "to seek a future treaty that, inter alia, would not limit the United States to levels of intercontinental strategic forces inferior to the limits provided for the Soviet Union". Whereas in its formal language the amendment was not binding to the president, it was a strong warning that no SALT 2 treaty would be ratified unless this minimum requirement was met. Bundy, p. 554.
146. Gaddis, *Strategies of Containment*, p. 324; Jensen, pp. 153-189.
147. Nixon, p. 617.
148. Bundy, p. 554.
149. Kissinger interview in Charlton, pp. 33-34.
150. Statement to the Senate Committee on Foreign Relations, September 19, 1974, *The Department of State Bulletin*, Vol. 71, (October 14, 1974), pp. 512-513.
151. Statement Before the Senate Committee on Foreign Relations, fall 1974, as quoted in Schulzinger, p. 173.
152. Garthoff, pp. 540-543; Rowny, pp. 64-92.
153. Brzezinski, p. 163.
154. Talbott, *The Master of the Game*, pp. 142-147; Tarr, pp. 60-63.
155. "Conference on Nuclear Energy", address by Jimmy Carter on Nuclear Energy and World Order at the United Nations, New York City, 13 May 1976, *The Presidential Campaign 1976. Volume One, Part One: Carter*, p. 188. Washington, DC, 1978: Government Printing Office; "The Inaugural Address of President Carter", 20 January 1977; *Public Papers of the Presidents: Jimmy Carter*, 1977, Book I, pp. 1-3. Washington, DC, 1977: Government Printing Office; Brzezinski, pp. 151-157.
156. Caldwell, pp. 39-42.
157. Brzezinski, pp. 160-162; Talbott, *Endgame*, pp. 46-62.

158. Talbott, *Endgame*, p. 61-62.

159. Jensen, pp. 182-186.

160. It goes without saying that the deal to abolish all intercontinental nuclear forces on both sides, which Reagan and Gorbachev were close to striking at the Reykjavik summit in October 1986, fitted perfectly with this general, albeit more cautious and piecemeal trend toward deep cuts. For an instructive account of the Reykjavik discussions see Oberdorfer, pp. 155-209.

161. Besides the enormous cost of maintaining the ageing SS-18 force, this development was probably caused by the troublesome facts that a large portion of the missiles were deployed outside Russian territory (in Kazakhstan) and that the only production plant was situated outside Russia (in Ukraine). Clark, pp. 65-70.

162. Interview with General (Ret.) William Odom, Washington, DC, 21 November 1993. Odom was referring to Presidential Directive-41, "Civil Defense", 29 September 1978. The directive was preceded by PRM-32 on the same subject. Brzezinski's formal request for that study defined its purpose as "to analyze the strategic implications of civil defense programs in the United States and the Soviet Union, and to determine what changes, if any, should be made in current US policies related to civil defense questions." PRM-32, "Civil Defense", 30 September 1977, NSA.

163. Kaku & Axelrod, pp. 244-248; Schroeder, pp. 248-249; Talbott, *The Master of the Game*, p. 239.

164. Address by the President (Reagan), 23 March 1983, *American Foreign Policy: Current Documents, 1983*, pp. 56-62.

165. National Security Decision Directive on "Ballistic Missile Defense Research and Development", 23 March 1993, *ibid.*, p. 63.

166. National Security Decision Directive on "Ballistic Missile Defense Research and Development", 23 March 1993, *ibid.*, p. 63.

167. Letter from President Reagan to the Speaker of the House of Representatives (O'Neill), 10 October, 1984, and attached "Report to the Congress Prepared by the General Advisory Committee on Arms Control and Disarmament", October 1984, *American Foreign Policy: Current Documents, 1984*, pp. 110-117. Washington, DC, 1986: Department of State.

168. An instructive analysis of the Reagan Administration's "broad" interpretation of the ABM Treaty, and of Paul Nitze's crucial role in the formulation of that position, is presented by Talbott, *The Master of the Game*, pp. 231-249.

169. Address by the Secretary of Defense (Weinberger), 19 December 1984, *ibid.*, pp. 74-78. See also interview with Weinberger in Charlton, p. 98.

170. Thompson, *ibid.*, pp. 540-541.

171. *Newsbrief*, Programme for Promoting Nuclear Non-Proliferation, No. 23, 3rd Quarter 1993, p. 7.

172. The reports were summarized in this way in a memorandum on continental defense by Carlton Savage of the Policy Planning Staff, 10 February 1953, *FRUS*, 1952-1954, Vol. II, Part I, pp. 231-234.

173. Quoted in Trachtenberg, p. 145.

174. On 23 January 1956, Eisenhower noted in his diary that even with an advance warning of up to four weeks, the United States would be virtually defenseless against an all-out Soviet nuclear attack. The US forces would be capable of inflicting three times as much damage in retaliation, wrote the president, but "there was little we could do during the month of warning in the way of dispersal of population, of industries, or of perfecting defenses that would cut down losses. The only possible way of reducing losses would be for us to take the initiative sometime during the assumed month in which we had the warning of an attack and launch a surprise attack against the Soviets." Due to strong popular sentiments against preventive war and the requirement of swift and totally secret congressional action, Eisenhower concluded that "it would appear impossible that any such thing would occur." Ferrell, ed. pp. 311-312.

175. For instance, when the Administration made its first major revision of its basic national security policy since the adoption of NSC 162/2, it concluded that "The United States and its allies must reject the concept of preventive war or acts intended to provoke war." NSC 5501, Basic National Security Policy, 7 January 1955, *FRUS*, 1955-1957, Vol. XIX, p. 33. That position was confirmed by the approval of NSC 5602/1, Basic National Security Policy, 15 March 1956, *ibid.*, p. 248.

176. NSC 5501, Basic National Security Policy, 7 January 1955, *FRUS*, 1955-1957, Vol. XIX, p. 32.

177. *Ibid.*

178. *Ibid.*, p. 33.

179. NSC 5602/1, *op.cit.*, p. 248. On this point, see also Freedman, pp. 123-127; Trachtenberg, pp. 146-147.

180. Quoted in Rosenberg, p. 42.

181. See his testimony before the Senate Foreign Relations Committee, 16 September 1980. Printed in *American Foreign Policy: Basic Documents, 1977-1980*, p. 146.

182. Bobbitt, "Selective Options and Limited Responses, 1974-1983", especially pp. 339-343, in Bobbitt, Freedman & Treverton, eds.

183. Gray & Payne, especially p. 466 (as reprinted in Bobbitt, Freedman & Treverton, eds.).

184. Based on information gathered from an interview with General (Ret.) William Odom, 21 October 1993.

185. Address by President Reagan, 23 March 1983, *American Foreign Policy: Current Documents, 1983*, p. 58.
186. Leffler, pp. 323-404.
187. Njolstad, "Learning from History?", *op.cit.*
188. Cochran, Arkin & Hoenig, pp. 7-8.
189. Quoted in Schroeder, p. 83.
190. Statement by Jimmy Carter, 18 September 1976, *The Presidential Campaign 1976. Volume One, Part One: Carter*, p. 696. Washington, DC, 1978: Government Printing Office.
191. Emma Rothschild, "The Philosophy of Reaganism", *The New York Review of Books*, 15 April 1982, quoted in Oye, Lieber & Rothchild, eds., p. 14.
192. Quoted in Oye, Lieber & Rothchild, p. 13.
193. Bush brought the defense budget down from well above \$310 billion in 1989 to \$278 billion in 1992. Dick Cheney, *1991 Joint Military Net Assessment*, pp. 3-3, 3-4.
194. IISS, *Strategic Survey 1988-1989*, p. 63; IISS, *Strategic Survey 1990-1991*, p. 112.
195. *Ibid.*, pp. 3-4, 3-5, 3-6.
196. Spinardi, pp. 179-190.
197. In the years 1945-1990, the nuclear forces held a 15% average share of the total defense procurement expenditures, as compared to 31% for non-strategic ships and 25% for non-strategic aircraft. At the same time, however, the proportion average for research, development, testing and evaluation of strategic weapons systems was 43%, more than the total RDT&E expenditures for land-, sea- and air-based non-strategic weapons systems (37%). In addition, strategic defense held a 16% average share of the total RDT&E effort. Cheney, *1991 Joint Military Net Assessment*, p. 3-3.
198. Cheney, *1991 Joint Military Net Assessment*, p. 3-3.
199. Address by the Secretary of Defense (Weinberger), 19 December 1984, *American Foreign Policy: Current Documents 1984*, p. 72; see also "Strategic Defense Initiative", Department of Defense Fact Sheet, 9 March 1984, *ibid.*, p. 42.
200. PD-18, "US National Strategy", 24 August 1977, sanitized copy from the NSA. Italics added.
201. Cheney, *1991 Joint Military Net Assessment*, p. 3-3.
202. Cheney, *1991 Joint Military Net Assessment*, p. 5-2.

**Appendix I: US nuclear warheads and strategic weapon systems, 1945-1988 (based on Cochran, Arkin & Hoenig).**

Year	Warheads: Numbers and types		Strategic weapons systems
<b>Pre-MAD</b>			
1945	2	Mk-1 ("Little Boy")	B-29
1948	50	Mk-3 ("Fat Man")	B-50
1952	1,000	Mk-4 (first mass produced a-bomb)	B-36 (1949) B-47 (1951)
1954	1,750	Mk-12, Mk-17 (first deliverable h-bomb)	B-52
1959	12,000	W38 (first ICBM warhead)	Atlas ICBM
1960	18,500	W58 (first SLBM warhead)	Polaris SSNB/SLBM Titan I ICBM
1961	23,000		Minuteman I
1962	26,500		Poseidon SSNB
<b>MAD</b>			
1964	31,000		
1967	32,000		FB-111 (bomber)
1970	27,000	W62/Mk-12 (first MIRV class warhead)	Minuteman III (first MIRVed ICBM)
1971	27,000		Poseidon (first MIRVed SLBM)
<b>Post-MAD</b>			
1974	29,000		
1977	26,000		
1980	25,000	W78/Mk-12A (first high-accuracy counterforce warhead)	
1982	25,000		B-52G w/ALCM Trident SSBN w/Trident I SLBM
1986	?	W87/Mk-21 (improved counterforce warhead)	B-1B bomber MX ICBM
1988	?	W87/Mk-5 (first SLBM counterforce warhead)	Trident II SLBM



**Appendix II:** US nuclear doctrines and targeting policies, 1945-1989 (based on Ball; Ball & Toth; Rosenberg; and Thompson).

Year	Nuclear doctrine	Strategic targeting priorities
<b>Pre-MAD</b>		
1948	Atomic Blitz	<i>Bravo</i> mission (Soviet "strategic" military forces); <i>Delta</i> mission (Soviet "strategic" industry); <i>Romeo</i> mission (Soviet tactical forces).
1954	Massive Retaliation NSC 162/2 (October 1953)	<i>Bravo</i> , <i>Delta</i> , <i>Romeo</i> missions in the same order of priority.
1960		SIOP-62 (first SIOP, approved in December 1960, and took effect in January 1961). "Optimum Mix" of <i>Bravo</i> , <i>Delta</i> , <i>Romeo</i> targets. Everything-at-once strategy: No reserves, options, or withholds.
1961-62	Flexible Response	SIOP-63 (approved in early 1962, and took effect in August 1962). The "No cities" version of counterforce strategy. Four "Major Attack Options" (MAOs), plus sub-options and withholds.
<b>MAD</b>		
1964	Assured Destruction	No substantial changes in the SIOP
<b>Post-MAD</b>		
1974	Escalation Control  NSDM-242 (January 1974)	SIOP-5 (approved in late 1975, and taking effect in January 1976) this SIOP represented the first major revision of SIOP-63. Divided into Major, Selective, Limited, and Regional nuclear options, as well as into four target categories: Soviet strategic forces, other military targets, Soviet leadership, and economic-industrial (E/I) targets. Established a Strategic Reserve Force, and a National

Year	Nuclear doctrine	Strategic targeting priorities
1974	Post-MAD	Strategic Target Data Base (NSTDB) with 25,000 targets. Within the E/I category main emphasis on "economic recovery targets" in order to ensure the "most favorable" postwar outcome to the US.
1980	The Countervailing Strategy  PD-59 (July 1980)	SIOP-5F (approved in October 1980, and effective from October 1981) put increased emphasis on Soviet leadership (more than 5,000 targets). NSTDB includes 50,000 targets.
1981-83	NSDD-13 (October 1981)	SIOP-6 (effective from October 1983) introduced the notion of "protracted nuclear war". Further increased emphasis on targeting Soviet leadership and so-called "relocatable" military targets (RTs), such as mobile nuclear missiles. The counter-recovery mission was eliminated, which by 1987 had led to a dramatic reduction in the NSTDB to 14,000 targets.
1989  called	NSM-12 (June 1989)	SIOP-6F (effective from October 1989) confirmed the emphasis on destruction of the Soviet leadership, i.e. by introducing so-called "prompt counter-leadership" options. In addition, emphasis on RTs and other Soviet strategic forces. Introduced the notion of "adaptive target planning".

**Appendix III:** US strategic arms control policy and strategic defense initiatives, 1945-1992.

Year	Strategic arms control policy	Strategic defense initiatives
<b>Pre-MAD</b>		
1946	Baruch Plan for international atomic energy control	
1950		"Pinetree line" (continental air defense system)
1952		"DEW line" (three-layer continental air defense system)
1958		the Nike-Zeus, the US Army's surface-to-air missile (SAM), chosen for the integrated national anti-ballistic missile (ABM) program
1961	Joint US-Soviet statement calls for general and complete disarmament in fully verifiable stages	
1963	the USA, the USSR, and the UK sign the Limited Test Ban Treaty	the Nike-Zeus program cancelled in favor of Nike-X
<b>MAD</b>		
1964	Johnson proposes a freeze in all existing US-Soviet strategic forces	
1967	Johnson proposes strategic arms control negotiations with the USSR	US decision to produce and deploy the <i>Sentinel</i> , an upgraded version of Nike-X, for defense against Soviet counterforce and Chinese countervalue attack
1968	Johnson calls off planned SALT negotiations after Soviet invasion of Czechoslovakia	

Year	Strategic arms control policy	Strategic defense initiatives
1974	Vladivostok Agreement signed by Ford and Brezhnev	US cancels deployment of the single <i>Safeguard</i> system it is allowed under the ABM Treaty

#### Post-MAD

1969	Nixon signals US willingness to start SALT negotiations	<i>Sentinel</i> becomes <i>Safeguard</i> (ABM system against Soviet counterforce attack only)
1972	ABM Treaty & SALT 1 "Interim" Treaty signed by Nixon and Brezhnev	
1977	Carter's "Deep Cuts" proposal	
1979	SALT 2 Treaty signed by Carter and Brezhnev	
1980	Carter asks Congress to postpone ratification of the SALT 2 Treaty	
1982	Reagan proposes START negotiations aimed at deep cuts in strategic missile warheads and throw-weights	
1983		Reagan presents his Strategic Defense Initiative (SDI)
1986	Reagan and Gorbachev close to agree on a 100% reduction in ICBMs and SLBMs within a period of ten years	
1991	START 1 Treaty signed by Bush and Gorbachev	
1992	START 2 Treaty signed by Bush and Yeltsin	

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## **In Search of Superiority**

US Nuclear Policy in the Cold War

*Olav Njølstad*

**INSTITUTT FOR  
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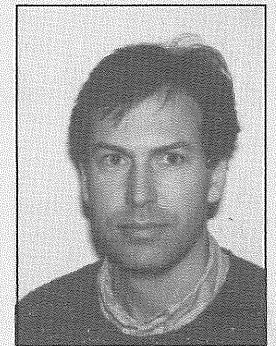
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*In Search of Superiority: US Nuclear Policy  
in the Cold War*

What role did the strategic nuclear weapons have in US policy towards the Soviet Union during the Cold War?

This study argues that even though US nuclear policy was defensive in nature - its chief objective being to deter Soviet aggression - it nevertheless represented a deliberate and almost permanent quest for strategic superiority. More than anything, this paradoxical situation resulted from two factors: the steady growth in Soviet strategic capabilities, and the firm belief among US decisionmakers that, given the "delicacy" of the balance of terror, even marginal advantages were crucial for maintaining the peace.



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