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THE DEVELOPMENT OF AMERICAN NUCLEAR STRATEGY  
IN THE COLD WAR

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## **ABSTRACT**

American nuclear strategy underwent several major phases of development, and I will examine the development of American nuclear strategy during the Cold War. I intend to show the interrelatedness of technological advances and policy decisions. I begin with the birth of American nuclear strategy during the Truman Administration. Then, Eisenhower's policy of "massive retaliation" will be examined. This is followed by a chapter on the modes of strategic thought exemplified by the RAND Corporation, and the infiltration of RAND thought into the Kennedy and Johnson administrations via Robert McNamra. The relationship between Détente, nuclear strategy, and nuclear technology composes the fourth chapter. The fifth and final chapter concerns the transformation of nuclear strategy during the Reagan Administration, and concludes with the collapse of the Soviet Union in 1991.

## TABLE OF CONTENTS

Abstract.....	i
Table of Contents.....	ii
Introduction.....	1
Chapter 1.....	3
Chapter 2.....	17
Chapter 3.....	32
Chapter 4.....	53
Chapter 5.....	68
Conclusion.....	85
Bibliography.....	87

## Introduction

When World War I broke out in 1914, every major army in Europe still had large mounted cavalry divisions.<sup>1</sup> Soldiers still rode into the initial battles on horseback. Just a few decades later, at the conclusion of World War II, the United States found itself in possession of bombs that could level entire cities in one quick blow. These massive leaps in technology were happening so fast that it was often difficult for generals and politicians to adapt their strategies fast enough to keep pace. This was the position the United States found itself in at the conclusion of World War II. To further complicate matters, the Cold War standoff with the Soviet Union began almost immediately following the conclusion of World War II in 1945. Over the course of the next forty-five years, nuclear weapons became increasingly powerful and numerous, and an array of American politicians, generals, and all manner of civilians would be tasked with developing strategies to control their use. The purpose of this thesis is to trace the development of American nuclear strategy, and how it was both shaped by and worked to shape the technological development of nuclear weapons. Rather than focusing on mainly on military force configurations or bureaucratic battles, I will instead focus my analysis on the peculiar relationship between nuclear strategy and nuclear technology that developed in America over the course of the Cold War.

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<sup>1</sup> John Ellis, *Cavalry: The History of Mounted Warfare*, (Barnsley, UK: Pen & Sword Books Ltd, 1994), p.174

I will cover the entire course of the Cold War, from its beginnings in the aftermath of World War II to its conclusion in 1991 with the collapse of the Soviet Union. I will also focus solely on American nuclear strategy. While the evolution of Soviet nuclear strategy is fascinating and important, it will only be referenced when it forced the adoption of a specific American strategy or new technology.

I also intend to show that this topic is important outside of the narrow fields of military or Cold War history. The rapid advance of technology is one the main forces that shapes our world. Politics, economics, and every other area of human endeavor have been radically altered as technology has spread and become increasingly more complex. Whether it was the invention of the wheel or the spread of the internet, humans have had to constantly invent new frameworks of understanding to make sense of new technology. These new frameworks of understanding, in turn, point the way towards new technology. I consider nuclear weapons to be the perfect example of this fundamental relationship for several reasons. First, the growth of American nuclear weapons technology and nuclear strategy was extremely well documented due to the overarching importance of the Cold War. Furthermore, the immense destructive power of nuclear weapons forced them be taken extremely seriously by those involved in formulating strategies for the use.

## **Chapter One**

### **The Beginning:**

**1945-1952**

American nuclear strategy developed in fragmented, ad hoc, and often ambiguous ways in the years immediately following the end of World War II as civilian and military leaders attempted to fit these new and radically destructive weapons into a rational and controllable framework. In fact, America did not have anything even remotely resembling a comprehensive policy about the use of its rapidly expanding nuclear arsenal until more than three years after the bombings of Hiroshima and Nagasaki. American decision makers faced two main questions about the bomb in the years 1945-1948. First, it had to be determined if nuclear weapons were to be considered a completely separate category of weapons, or if they could be integrated into standard military operations in the way past technological advances such as the tank and the bomber were. Second, there was the question of who was to control the bomb. It was not immediately clear if the decision to use nuclear weapons should remain solely with the president, be delegated to military commanders like other weapons, or even transferred entirely to a global organization that would be responsible for the world's nuclear material. The decisions made by Harry Truman and his close advisers on these questions during the earliest years

of the Cold War would come to form the basis of all subsequent nuclear strategy in America over the next forty-five years.

The atomic bomb was not immediately considered to be a distinctly different form of weapon. Many military leaders, especially General Curtis LeMay, the architect of the strategic bombing campaign against Japan in World War II and the future commander of the Strategic Air Command (SAC), considered nuclear weapons to be nothing more than “larger conventional weapons” according to Air Force historian Todd White.<sup>2</sup> Indeed, LeMay’s firebombing of Tokyo was just as horribly destructive as the atomic bombings of Hiroshima and Nagasaki had been. Also, in mid-1945, Secretary of War Henry Stimson described the new atomic bomb as being “as legitimate as any other of the deadly explosive weapons of modern war”.<sup>3</sup> Even Winston Churchill, when informed of the power of the earliest atomic bombs remarked that, “We must not stand in the way of improvement.”<sup>4</sup> The idea that the bomb was just one more in a long line of military improvements such as the tank, heavy artillery, automatic weapons, and the airplane was in no way an isolated view at the dawn of the Cold War.

Harry Truman was, by far, the man most responsible for the widespread adoption of the view that the bomb was something else entirely, and that it could not be used as simply the next technological advance in warfare. Truman was horrified when he learned of the extent of the destruction and the number of civilian casualties caused by the

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<sup>2</sup> U.S. Strategic Nuclear Policy: An Oral History, DVD, 2005.

<sup>3</sup> Henry Stimson and McGeorge Bundy, *On Active Service in Peace and War* (London: Hutchinson, 1948), p. 361

<sup>4</sup> Quoted in Lawrence Freedman, *The Evolution of Nuclear Strategy: Third Edition* (New York: Palgrave, 2003), p.18

bombings of Hiroshima and Nagasaki. He told his Secretary of Commerce Henry Wallace in late-1945 that the thought of using more nuclear weapons was simply “too horrible” to consider.<sup>5</sup> Therefore, Truman took the step of removing the decision to use the bomb from the military, and giving it solely to the president. He was concerned that “some dashing lieutenant colonel” would decide to “drop one” of his own accord.<sup>6</sup> To this end, Truman established the Atomic Energy Commission which placed all of America’s nuclear material under civilian control. Furthermore, the Atomic Energy Act of 1946 enshrined the fact that only the president could make decisions regarding the use of nuclear weapons.<sup>7</sup> It was Harry Truman’s aversion to the bomb that prevented it from being treated as just another military improvement, and the framework he created to prevent nuclear decisions from being made by anyone other than the president remained in place throughout the Cold War, and persists to the present day.

Truman was so horrified by the destructive power of the bomb that he attempted to abolish them through the international management and control of nuclear material. Between 1945 and 1947, numerous proposals were made as to how this goal might have been accomplished. Truman settled upon the recommendations contained in the Acheson-Lilienthal Report which was produced by a committee chaired by future Secretary of State Dean Acheson and David Lilienthal, the chair of the Atomic Energy Commission<sup>8</sup>. Their report laid out a system of international control of nuclear materials

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<sup>5</sup> Harry S. Truman, *Off The Record: The Private Papers of Harry S. Truman*, Robert H. Ferrell, ed. (New York: Harper and Row, 1980), p. 99

<sup>6</sup> James Forrestal. *The Forrestal Diaries*, Walter Mills, ed. (New York: Viking, 1951), p. 458

<sup>7</sup> John Lewis Gaddis *The Cold War* (New York: Penguin, 2005), p. 24

<sup>8</sup> Joseph Cirincione *Bomb Scare* (New York: Columbia University Press, 2007), p. 17

that was designed to prevent further nuclear proliferation. A new international agency would provide assistance to nations seeking nuclear power while all of the fissile material would remain the property of the agency. Truman was willing to turn over the entire American nuclear stockpile to international control as long as other nations did the same. The plan, renamed the Baruch Plan when sent to the United Nations, was consistently rejected by the Soviet Union. Truman, however, continued to push for international atomic control, and this remained United States' only official policy on the future of nuclear weapons until as late as the summer of 1948.<sup>9</sup>

Truman was able to continue with his hope for a world without nuclear weapons for over three years mainly because of the atomic monopoly held by the United States. In 1948, less than a year before the Soviet Union tested its first atomic bomb, the Soviets were between eight and fifteen years away from having a nuclear capability.<sup>10</sup> Furthermore, neither the United States nor the Soviet Union yet possessed bombers with enough range to effectively strike the other. The American B-29 had a practical operating radius of between 1600 and 1800 miles, making the delivery of nuclear weapons against the Soviet Union in the event of a war quite difficult as in air refueling had not yet been perfected. Therefore, Truman was able to indulge in this quest to end the atomic age without much objection. Truman's desire to hand over all matters nuclear to an international organization, the lack of reliable delivery systems, and the anticipation of a fairly long period of American nuclear monopoly combined to reduce the emphasis

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<sup>9</sup> Barton J. Bernstein, "The Quest for Security: American Foreign Policy and International Control of the Atomic Bomb, 1942-1946," *The Journal of American History*, Volume 60 (March 1974), pp. 1003-104

<sup>10</sup> CIA Memorandum for the President, "Estimate of the Status of the Russian Atomic Energy Project," 6 July 1948. <<http://www.atomicarchive.com/Docs/Hydrogen/Soviet.shtml>>

placed on the bomb in the earliest years of the Cold War. For example, George Kennan, the architect of containment, made no mention of nuclear weapons at all in either his “long telegram” or the famous “X” article in *Foreign Affairs* in July 1947.<sup>11</sup> Indeed, Kennan would remain skeptical of nuclear weapons throughout his life.

Truman was forced to seriously consider the potential use of the atomic bomb against the Soviet Union during the Berlin Blockade which began in June 1948. Aware that the United States and its allies were severely outnumbered in terms of conventional forces by the Soviet Union, Truman was forced to order the Joint Chiefs of Staff to begin drawing up war plans which made use of the bomb. The United States had roughly fifty complete and ready to use nuclear devices in its stockpile in June 1948.<sup>12</sup> This was obviously far from enough to defeat the Soviet Union in the event of full scale war, but Truman believed that the shock power of the bomb could end conflict much as it had shocked the Japanese into surrender in World War II. This Joint Emergency War Plan, codenamed HALFMOON, and delivered to the President in the summer of 1948 by the Joint Chiefs of Staff recommended the early use of nuclear weapons delivered by the soon to be completed Convair B-36 “Peacemaker” bomber as a counter to Soviet conventional superiority<sup>13</sup>. Truman was initially reluctant to adopt such an aggressive plan, but James Forrestal, the Secretary of Defense, ordered the Joint Chiefs to continue with these plans anyway. Truman would eventually approve an ambiguous and unclear

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<sup>11</sup> X. “The Sources of Soviet Conduct.” *Foreign Affairs* 25, no. 4 (July 1947), pp. 566–582.

<sup>12</sup> David Alan Rosenberg, “U.S. Nuclear Stockpile, 1945 to 1950,” *The Bulletin of the Atomic Scientists*, Volume 38 (May 1982), p. 28

<sup>13</sup> Harry R. Borowski, “Air Force Atomic Capability from V-J Day to the Berlin Blockade--Potential or Real?” *Military Affairs*, Vol. 44, No. 3 (Oct., 1980), pp. 105-110

plan for the future use of nuclear weapons in the fall of 1948 known as NSC-30. It stated that the military must “plan accordingly” and be ready to use “all appropriate means available”, but it reaffirmed that atomic bombs could only be authorized for use by the President, and only when “he considers such a decision to be required.”<sup>14</sup>

The Berlin Blockade of 1948 was resolved without resorting to war, nuclear or otherwise. However, Truman’s hope for abolishing nuclear weapons was finally destroyed in August 1949, when the Soviet Union, with assistance from British and American spies such as the physicist Klaus Fuchs, broke the American atomic monopoly by testing its own atomic weapon, codenamed Joe-1 after Joseph Stalin by the Central Intelligence Agency. This took American intelligence by complete surprise, and introduced a radical, new level of uncertainty into the United States’ war plans. In the wake of the Soviet test, Truman admitted to his chief military and foreign policy advisers that international control was no longer a possible outcome, and that the United States must now work to be the “strongest in atomic weapons.”<sup>15</sup> In an astounding reversal, Truman immediately authorized funding for the research and development of the controversial hydrogen bomb, often referred to at the time as the ‘super’ bomb. Unlike the atomic bomb which used fission (the splitting of uranium or plutonium atoms), the hydrogen bomb utilized the fusion of hydrogen isotopes (deuterium or tritium) to release many times more energy than was possible with a fission device. George Kennan and

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<sup>14</sup> NSC-30, United States Policy on Atomic Warfare, U.S. Department of State, *Foreign Relations of the United States 1948, Vol. I, General: The United Nations* (Washington, D.C.: U.S. Government Printing Office, 1976), pp. 624-628

<sup>15</sup> Quoted in Richard Rhodes, *Dark Sun: The Making of the Hydrogen Bomb*, (New York: Touchstone, 1995), p.383

Robert Oppenheimer were the most prominent critics of the H-bomb program, but their arguments were largely ignored by the political and military elites who had been deeply shaken by the Soviet test.<sup>16</sup> Once the Soviet Union became a nuclear power, little incentive could be found to not pursue the next breakthrough. The Cold War arms race had begun.

With the abrupt change brought about by Truman after the first Soviet test, a new comprehensive national security strategy was ordered in January 1950. Known as NSC-68, it was the product of sections of both the Department of State and Department of Defense working under Paul Nitze. Nitze had replaced Kennan as the head of the State Department's Policy Planning Staff, and had been one of the first Americans on the ground at Hiroshima after the bomb was dropped.<sup>17</sup> Unlike his predecessor Kennan, who was never willing to make the atomic bomb a feature of containment, Nitze was strongly in favor of incorporating nuclear weapons into American plans for containing Soviet and Communist expansion. NSC-68 touched on all areas of the Cold War, including the need to aid allies and increase conventional forces. Indeed, NSC-68 saw the function of nuclear weapons as buying the United States time while it increased its conventional military forces to equal the Soviet Union. However, it did help to establish some of the basics of American nuclear strategy. First, NSC-68 recognized the deterrent possibilities of nuclear weapons. According to Nitze and his committee, the Soviet Union would be willing to attempt a surprise first strike on America with atomic weapons only if it could

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<sup>16</sup> David Alan Rosenberg, "American Atomic Strategy and the Hydrogen Bomb Decision," *The Journal of American History*, Volume 66 (June 1979), p. 79

<sup>17</sup> Paul Nitze, *From Hiroshima to Glastnost* (New York: Grove, 1989) p. 36

establish a “decisive superiority” in that area.<sup>18</sup> The overall purpose of NSC-68 was to argue that vastly more money needed to be spent on defense. President Truman, while reluctant to spend so much on the military, became convinced of the necessity of NSC-68’s recommendations after the start of the Korean War. Truman also began a massive buildup of conventional forces in Western Europe in line with the recommendations made in NSC-68.

The Korean War firmly convinced President Truman of the necessity to treat nuclear weapons as a last resort rather than the first resort to end conflict that some of his advisers such as James Forrestal had once envisioned.<sup>19</sup> Truman found that his moral aversion to the early use of nuclear weapons was supported by conventional build up that he had begun. Furthermore, there was a widespread fear throughout the upper echelons of the Department of State and Department of Defense that the North Korean invasion of South Korea was actually a diversion for a Soviet invasion of Western Europe. The American nuclear stockpile was still quite small in 1950, and therefore, the nuclear option was removed from nearly the beginning of the Korean War as the stockpile was held in reserve to defend Europe from Soviet aggression.<sup>20</sup>

President Truman never lost his deep seated dislike of nuclear weapons, but during his administration they grew rapidly both in terms of stockpile size and individual

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<sup>18</sup> NSC-68, "United States Objectives and Programs for National Security," April 14, 1950  
<[http://www.trumanlibrary.org/whistlestop/study\\_collections/coldwar/documents/sectioned.php?documentid=10-1&pagenumber=1&groupid=1](http://www.trumanlibrary.org/whistlestop/study_collections/coldwar/documents/sectioned.php?documentid=10-1&pagenumber=1&groupid=1)>

<sup>19</sup> David Alan Rosenberg, "The Origins of Overkill: Nuclear Weapons and American Strategy, 1945-1960," *International Security*, Vol. 7, No. 4 (Spring 1983), p. 14

<sup>20</sup> David Reese, *Korea: The Limited War*. (New York: St Martin's 1964). p.22

weapon strength over the last four years of his administration. By the time he left office in 1952, the United States was mass producing bombs that could yield 500 kilotons compared to the 10 kiloton yield of the Hiroshima and Nagasaki bombs<sup>21</sup>. The B-52, the first truly long range bomber capable of striking deep within the Soviet Union, also made its first test flights in 1952. The crises of the Berlin Blockade and the Korean War combined with the unexpectedly quick acquisition of atomic capabilities by the Soviet Union forced him to make a number of unpleasant decisions.

While the ultimate decision to use the bomb was the President's alone, the actual war planning and target selection was made the responsibility of a small contingent within the newly independent Air Force known as the Strategic Air Command (SAC). Created in 1946 and headed by General Curtis LeMay, the great innovator of strategic bombing in World War II, beginning in 1948, SAC operated as a quasi-autonomous unit within the military, and was responsible for the establishing bulk of American nuclear strategy during the Truman years. SAC bypassed the rest of the Air Force and submitted its annual budget requests directly to the Joint Chiefs of Staff.<sup>22</sup> Essentially, LeMay and SAC were charged with working out the intricacies of fighting, and winning, a nuclear war with the Soviet Union when the very idea of nuclear war had just come into existence.

With only the vague and often contradictory instructions from the President, the National Security Council, and the Joint Chiefs of Staff, the war planners at SAC were

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<sup>21</sup> "Operation Ivy" <<http://nuclearweaponarchive.org/Usa/Tests/Ivy.html>>

<sup>22</sup> William S. Borgiasz, *The Strategic Air Command: Evolution and Consolidation of Nuclear Forces, 1945-1955*. (Westport, CT: Praeger, 1996), p.11

left to proceed on a mostly ad hoc basis prior to the outbreak of the Korean War. The early years of SAC war planning were characterized just as much by technological limitations as they were by the lack of clear policy objectives. The earliest atomic bombs were incredibly large, weighing around 10,000 pounds, and were stored in two separate pieces because safety systems had not yet been developed. Assembling these bombs required thirty-nine men, and took over two days to complete. Furthermore, B-29 bombers had to have their bomb bays specially modified to accommodate such a massive weapon, and SAC was able acquire fewer than thirty of these modified B-29's by the summer of 1948.<sup>23</sup> These technological and logistical factors severely limited the options open to American war planners throughout the Truman years.

The geography of the Soviet Union also posed a unique and significant challenge to the early American war planners. The Soviet Union was immense, and vast expanses were completely unknown to the American military. The U2 high altitude spy plane did not make its first flight until 1955, and the closed nature of the Soviet Union made the selection of targets extremely difficult for SAC planners. They found themselves often relying on maps that pre-dated World War II. Lacking the most basic intelligence meant that American bombers would have to penetrate Soviet airspace en route to their targets at night without anything resembling adequate radar coverage.<sup>24</sup> The task of identifying targets within the Soviet Union was an unprecedented challenge, and the likelihood of

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<sup>23</sup> David Alan Rosenberg, "The Origins of Overkill: Nuclear Weapons and American Strategy, 1945-1960," *International Security*, Vol. 7, No. 4 (Spring 1983), p. 15

<sup>24</sup> David Alan Rosenberg, "U.S. Nuclear Stockpile, 1945 to 1950," *The Bulletin of the Atomic Scientists*, Volume 38 (May 1982), p. 29

bombers being able to reach them successfully and return was extremely low.

Nevertheless, SAC was able to assemble an ever growing list of targets that expanded with the size of the stockpile.

The experience of mass terror bombing in World War II definitively shaped the targeting decisions made by the earliest American atomic war planners. Curtis LeMay had designed the area bombardment campaigns which devastated Japan over the final months of the war. When Japan continued to refuse to surrender even though the war was clearly lost, General LeMay was put in charge of an all-out air attack on Tokyo and other major Japanese cities. LeMay's bombers remorselessly attacked the mostly wood cities with incendiary bombs which caused massive firestorms and horrific civilian casualties. The decision to use atomic bombs against the civilian cities of Hiroshima and Nagasaki grew directly from the conventional terror bombing campaigns. General Leslie Groves, the director of the Manhattan Project, in making the decision to use the atomic bombs against cities rather than attempting to target military or industrial capacities, stated that the goal was to "adversely affect the will of the Japanese people to continue the war."<sup>25</sup> Likewise, Henry Stimson, who made the final selection of Hiroshima and Nagasaki out of a list of possible target cities, wrote that the aim of the atomic bombings was to inflict a "tremendous shock" on Japan in order to convince the Japanese military commanders that the United States possessed the "power to destroy the Empire."<sup>26</sup>

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<sup>25</sup> Leslie Groves, *Now It Can Be Told: The Story of the Manhattan Project* (New York: Harper, 1962), p.267

<sup>26</sup> Henry Stimson and McGeorge Bundy, *On Active Service in Peace and War* (London: Hutchinson, 1948), p. 373

That Japan did, in fact, surrender quickly after the use of the atomic bombs proved to SAC war planners that targeting Soviet cities was the best way to win a future war. In the years of the American nuclear monopoly, SAC anticipated that even a small number of atomic bombs, such as the twenty in existence by the end of 1946, unleashed on major population centers such as Moscow could neutralize Soviet conventional superiority.<sup>27</sup> The decision to target cities was made easier by the fact that the Soviet petroleum refining industry was located almost entirely within relatively few cities. By striking these cities, SAC argued, the Soviet war machine would be crippled while retaining the psychological ‘horror’ impact of the bomb. However, the primary objective of nuclear war remained the destruction of Soviet will rather than Soviet industrial, political, or even military capacities. Truman’s unease with the atomic bomb meant that SAC was left to proceed with war planning on its own, and the experience of strategic bombing in World War II definitively shaped the

As the atomic stockpile grew, so did the SAC target list. The first American nuclear war plan drafted against the Soviet Union, codenamed BROILER, called for the targeting of twenty-four Soviet cities with thirty-four atomic bombs. This was expanded to the use of fifty bombs on twenty cities in the HALFMOON war plan, which was the first plan for nuclear war with the Soviet Union to be embraced and accepted by President Truman, and finally one 133 bombs on seventy cities in war plan TROJAN, the last atomic war plan of the monopoly era, approved by the Joint Chiefs in December

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<sup>27</sup> David Alan Rosenberg, "U.S. Nuclear Stockpile, 1945 to 1950," *The Bulletin of the Atomic Scientists*, Volume 38 (May 1982), p. 26

1948.<sup>28</sup> In each plan, despite the ever expanding lists of targets, the goal of inflicting psychological terror remained unchanged. The experience of Hiroshima and Nagasaki was so powerful that targeting anything but population centers was not even seriously considered until after the Soviet Union broke the atomic monopoly.

Even after the Soviet Union became a nuclear power, there was little consideration given to the possibility of using atomic bombs against the Red Army. Indeed, the first war plan devised after the first Soviet test made only limited concessions to the idea that atomic bombs could be used as anything other than horror weapons. The plan, codenamed OFFTACKLE, called for the use of 292 bombs against 104 Soviet targets while retaining a second strike stockpile of 72 weapons was adopted in late 1949.<sup>29</sup> The retention of a sizable nuclear arsenal after the first strike was certainly the result of the new Soviet atomic capability, but the selection of cities as the sole targets remained in place.

By the end of the Truman Administration, it had been quite definitely settled that the American nuclear arsenals only real role was to deter Soviet aggression against the United States and its allies in Western Europe. Truman was completely unwilling to consider the use of nuclear weapons except under the most dire of circumstances. He only approved the development of high yield thermonuclear weapons after the Soviet Union tested its first nuclear device. Truman was largely willing to let American nuclear

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<sup>28</sup> David Alan Rosenberg, "American Atomic Strategy and the Hydrogen Bomb Decision," *The Journal of American History*, Volume 66 (June 1979), pp. 68-71

<sup>29</sup> David Alan Rosenberg, "The Origins of Overkill: Nuclear Weapons and American Strategy, 1945-1960," *International Security*, Vol. 7, No. 4 (Spring 1983), p. 17

technology stagnate, and only seriously approved the development of new bombers to stay just slightly ahead of the Soviet Union.

## Chapter Two

### Massive Retaliation

1952-1960

General Dwight D. Eisenhower, the former Supreme Commander of Allied Forces in Europe during World War II, was elected the 34<sup>th</sup> president of the United States on November 4, 1952 in a landslide victory over Democrat Adlai Stevenson. Eisenhower's sweeping victory was quickly interpreted as a "mandate for change", particularly in the areas of national security and defense.<sup>30</sup> During his campaign, Eisenhower had criticized the Truman administration's policies in three main areas. First, Eisenhower promised that, if elected, he would quickly resolve the unpopular Korean War which had devolved into a stalemate by the fall of 1952. Second, Eisenhower and his fellow Republicans charged Truman and the Democrats of being weak in the fight against the Soviet Union and global communism. Eisenhower's third criticism of Truman and the Democrats was of their fiscal policy. Eisenhower promised to cut the federal budget, and to restore fiscal stability to the United States. These three critiques resonated with American voters, and they overwhelmingly elected Eisenhower, breaking the Democrats' twenty year hold on the White House.<sup>31</sup>

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<sup>30</sup> Dwight D. Eisenhower, *Mandate for Change, 1953-1956* (Garden City, N.Y.: Doubleday and Co., 1963)

<sup>31</sup> John Lewis Gaddis, *Strategies of Containment*, (New York: Oxford, 2005), p.127

After his victory, Eisenhower was faced with a dilemma: how was he to cut the federal budget, especially the defense budget, while simultaneously pursuing a “policy of boldness” in foreign affairs that would not only contain Soviet expansion, but would actually reverse the trend in America’s favor?<sup>32</sup> Eisenhower found answers to these questions in the person of John Foster Dulles. Dulles was, by the time of Eisenhower’s election, the leading foreign policy “wise man” of the Republican Party. Dulles came from a prominent political family: both John W. Foster, his grandfather, and his uncle, Robert Lansing, had previously served as Secretary of State, and his younger brother, Allen Welsh Dulles, would become the director of the Central Intelligence Agency. John Foster Dulles had originally been a powerful Wall Street lawyer before entering politics. He served as Thomas E. Dewey’s chief foreign policy adviser during both the 1944 and 1948 presidential elections. After Truman’s upset defeat of Dewey, Dulles wrote a book, titled *War or Peace* and released in 1950, which was highly critical of the Truman Administration and its handling of the Soviet threat. He was the logical choice for Secretary of State, and Eisenhower officially announced that Dulles would indeed be his choice to head the Department of State three weeks after his victory.

Eisenhower and Dulles immediately began to plan a massive overhaul of American national security and defense policy. 1953, the first year of the Eisenhower Administration, was spent reviewing existing policies, configuring the bureaucracy, and

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<sup>32</sup> Townsend Hoopes, *The Devil and John Foster Dulles* (Boston, Mass.: Little, Brown and Co., 1973), pp. 199-201

engaging in internal debates.<sup>33</sup> Eisenhower, in an attempt to streamline national security policy making, created a new position: the Special Assistant to the President for National Security Affairs, commonly called the National Security Adviser, and Robert Cutler, a prominent banker and attorney, was appointed to fill the new role. The position of National Security Adviser has remained a permanent part of the American national security system, and Eisenhower's creation of the position concentrated long term strategic planning and decision making within the Executive Branch where it would remain.<sup>34</sup> Once the bureaucracy was streamlined and properly configured, Eisenhower and Dulles began to seriously organize their grand strategy.

It would not be until almost a year after his inauguration that Eisenhower and Dulles would begin to publically enunciate their new defense policy. Eisenhower began to unveil the new American defense posture in his State of the Union Address delivered on January 7, 1954. It was immediately apparent that Eisenhower's policy on the use of nuclear weapons was radically different from that of his predecessor. Whereas Truman saw the use of nuclear weapons as a last resort, Eisenhower announced that it would be his policy to rely on America's nuclear stockpile as the first line of defense against Soviet aggression. During the introduction to the section of his speech that dealt with foreign policy, Eisenhower announced to Congress, the American public, and, most importantly, the Soviet leadership that he would use America's "massive capability to strike back" in

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<sup>33</sup> Samuel F. Wells, "The Origins of Massive Retaliation" *Political Science Quarterly*, Vol. 96, No. 1 (Spring, 1981), p.36

<sup>34</sup> David Alan Rosenberg, "The Origins of Overkill: Nuclear Weapons and American Strategy, 1945-1960," *International Security*, Vol. 7, No. 4 (Spring 1983), p. 54

the event of any Soviet aggression even if that aggression did not rise to the level of a direct attack upon America.<sup>35</sup> He also linked this reliance on nuclear weapons for the nation's defense with a policy of fiscal conservatism. By shifting the emphasis from large conventional forces occupying costly foreign bases to the much smaller force required to deliver a full nuclear strike against the Soviet Union, Eisenhower planned to save the United States billions of dollars per year even while continuing to invest heavily in cutting edge nuclear technologies such as ever more powerful bombs, long range missiles, and small, tactical nuclear weapons that could be deployed on a battlefield. Eisenhower was able to present these savings to Congress and the public two weeks after his State of the Union Address when he unveiled the budget for the fiscal year 1955 that cut defense spending to \$31.5 billion, down almost \$10 billion from Truman's last budget two years earlier.<sup>36</sup> From this budget came the moniker of the "New Look" which came to be used as an overarching name for Eisenhower's national security strategy.

John Foster Dulles was assigned the task of explaining the Eisenhower Administration's nuclear strategy, and how it fit into the New Look in greater detail. He began by delivering a remarkably bombastic speech to the Council on Foreign Relations in New York City on January 12, 1954, just five days after Eisenhower had debuted the New Look. Dulles's speech, entitled "The Evolution of Foreign Policy", focused on the deterrent properties of nuclear weapons, and how these deterrent properties could be

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<sup>35</sup> "Annual Message to the Congress on the State of the Union," in *Public Papers of the Presidents of the United States*, Dwight D. Eisenhower, 1954 (Washington, D.C.: Government Printing Office, 1960), pp. 6-8

<sup>36</sup> Samuel F. Wells, "The Origins of Massive Retaliation" *Political Science Quarterly*, Vol. 96, No. 1 (Spring, 1981), p.33

harnessed by the United States to prevent the continued expansion of communism around the world. Dulles declared that it was now the official policy of the Eisenhower Administration to respond to aggression by the “Communist world” (Dulles was of the belief that all communist movements were ultimately the puppets of the Soviet Union) with a “massive retaliatory power” that would take place “by means and at places of our choosing.”<sup>37</sup> With this speech, the term massive retaliation became permanently linked to John Foster Dulles and the New Look. Essentially, Dulles wanted to throw the Soviet Union into uncertainty by refusing to specify at what level of aggression would trigger an all-out American nuclear strike. This was a deliberate attempt to shift the strategic balance back into America’s favor with the threat of a critical first strike. Dulles believed that the Truman policy of containment was weak because it was an essentially defensive doctrine that allowed the Soviet Union to dictate the time and place of conflicts (such as in Korea), so massive retaliation was designed to reverse this role by allowing the United States to regain the offensive upper hand by threatening nuclear retaliation to even a relatively small conventional attack.

Dulles further refined the doctrine of massive retaliation in an article written for *Foreign Affairs* that was published in April 1954. Entitled “A Policy for Security and Peace”, it was less strident in tone than his speech to the Council on Foreign Relations in January, but nevertheless reaffirmed the core assumptions behind the policy of massive retaliation. Dulles maintained that the United States was absolutely willing to use nuclear weapons in situations that did not rise to the level of total war or a full scale Soviet

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<sup>37</sup> John Foster Dulles, “The Evolution of Foreign Policy,” Department of State Bulletin 30 (25 January 1954), pp. 107-110.

invasion of Western Europe. However, he maintained that massive retaliation, as a policy, did not mean that the United States would necessarily launch a full scale nuclear assault under all circumstances of aggression, but would instead consider the use of sub-strategic nuclear weapons. Dulles was particularly interested in the possibilities of tactical nuclear weapons, such as atomic artillery shells, which could be used in situations where the wholesale destruction of cities was not considered appropriate.<sup>38</sup> However, Dulles's attempts to scale back some of the more apocalyptic implications of massive retaliation were less than successful. The lasting image of John Foster Dulles and massive retaliation was that America was ready, willing, and able to respond to minimal communist provocations with an all-out nuclear assault on the cities of the Soviet Union.

While John Foster Dulles's rhetoric shaped the public image of the Eisenhower Administration's nuclear strategy, the actual plans for a nuclear attack on the Soviet Union were, of course, developed in complete secrecy. The commitment to use nuclear weapons as a first resort in a wide variety of possible situations became official policy in late-1953 when Eisenhower approved NSC-162/2 which stated that the United States would "consider nuclear weapons as available for use as other munitions."<sup>39</sup> The first war plan developed by SAC after the adoption of NSC-162/2 was finished in March 1954, and it called for the use of 735 bombers that would attack simultaneously in a

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<sup>38</sup> John Foster Dulles, "Policy for Security and Peace," *Foreign Affairs* (April 1954), pp. 353-64.

<sup>39</sup> NSC 162/2, Review of Basic National Security Policy, October 30, 1953  
<<http://www.fas.org/irp/offdocs/nsc-hst/nsc-162-2.pdf>>

“single, massive blow”.<sup>40</sup> Not only did SAC have the benefit of incorporating the new, but rapidly expanding stockpile of much lighter yet much more powerful hydrogen bombs into its war plans, but bomber technology was finally catching up to weapon technology. The B-52, which made use of eight cutting edge turbojet engines, was nearly ready to enter mass production. The B-52, which would compose the entirety of SAC’s strategic bomber fleet by 1958, had a combat radius of over 3,000 miles while travelling at a speed of 550 miles per hour.<sup>41</sup> The United States finally had the capability to reliably and effectively strike deep within the Soviet Union, and this was immediately promoted by SAC as the ability to inflict a strike that would end a war before it even began. LeMay and the SAC war planners were convinced that they could not only destroy the majority of Soviet cities, but also take out their bomber fleet, severely reduce their industrial capacity, and decapitate their political leadership in one strike. The SAC plan was adopted by Eisenhower and the Joint Chiefs of Staff, and was made the official Joint Strategic Capabilities Plan for the upcoming fiscal year. There was virtually no discussion of what would happen if American bombers did not successfully destroy all of the Soviet nuclear equipped bomber fleet.

However, the Soviet Union was, of course, making rapid technological advances of its own. The agency charged with monitoring the progress of the Soviet nuclear program was the Science Advisory Committee of the Office of Defense Mobilization

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<sup>40</sup> David Alan Rosenberg, "The Origins of Overkill: Nuclear Weapons and American Strategy, 1945-1960," *International Security*, Vol. 7, No. 4 (Spring 1983), p. 36

<sup>41</sup> "B-52 Stratofortress." *National Museum of the United States Air Force*. <<http://www.af.mil/information/factsheets/factsheet.asp?id=83>>

(ODM), an independent agency within the Executive Office of the President (EOP). President Eisenhower, concerned about the lack of consideration being given to Soviet technological gains by SAC, ordered ODM, in March 1954, to begin work on a report to the National Security Council which would address his concerns on the issue. James R. Killian, Jr., the president of the Massachusetts Institute of Technology, was selected to chair the study, and the committee was named the Technological Capabilities Panel.<sup>42</sup>

Their report, officially named "Meeting the Threat of Surprise Attack", but typically referred to as the Killian Report, was delivered to Eisenhower and the National Security Council in February 1955. The report concluded that the Soviet Union was in the possession of enough nuclear weapons and long range bombers to severely damage the United States, and that SAC air bases were incredibly vulnerable to a surprise attack. Furthermore, it was concluded that SAC had overestimated its own ability to knock out Soviet retaliatory capability in one massive strike. American vulnerability was predicted to only increase as the Soviets caught up to the United States in terms of bomber range and high powered thermonuclear weapons. Killian and his committee saw the United States as maintaining strategic superiority for only the next three-five years.<sup>43</sup>

The Killian Report made a number of recommendations as to how Eisenhower should act in order to maintain strategic superiority while limiting the threat posed by the ever expanding Soviet nuclear capability. First, it was urgently recommended that the

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<sup>42</sup> James R. Killian, Jr., *Sputniks, Scientists, and Eisenhower*, (Cambridge, Mass.: The MIT Press, 1977), pp. 68-71.

<sup>43</sup> "Meeting the Threat of Surprise Attack," The Report to the President by the Technological Capabilities Panel of the Science Advisory Committee, Office of Defense Mobilization, February 14, 1955 <<http://www.gwu.edu/~nsarchiv/nukevault/ebb332/doc01a.pdf>>

SAC bomber force be dispersed to as many separate bases as possible to limit the damage inflicted in a surprise Soviet attack. This was simply a stop gap measure, and that the only true solution to this problem was to significantly increase early warning detection. That way, SAC could have their bombers in the air before the Soviet bombers reached their targets. By far the most important recommendation contained within the Killian report was that the United States need to transition from bombers to missiles as quickly as possible. It was predicted that whichever nation was to acquire and deploy intercontinental ballistic missiles (ICBMs) in significant numbers first would hold the strategic upper hand through at least the 1960's. Eisenhower was impressed by the forward thinking displayed in the report, and ordered a drastic increase in funding and support for the fledgling American ballistic missile program.

The concerns and fears expressed in the Killian Report about the rapidity of Soviet technological progress seemed to be confirmed when, in November 1955, the Soviets detonated their first two-stage thermonuclear device. With an estimated yield of 1.6 megatons, the Soviet Union's nuclear stockpile was now roughly on par with that of the United States. With this, the Eisenhower Administration found itself, in the words of historian David Alan Rosenberg, "confronting an enemy which it could virtually destroy, but could not effectively disarm."<sup>44</sup> Eisenhower was left without many options. ICBMs were still several years away from being ready for production and deployment, so

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<sup>44</sup> David Alan Rosenberg, "The Origins of Overkill: Nuclear Weapons and American Strategy, 1945-1960," *International Security*, Vol. 7, No. 4 (Spring 1983), p. 41

Eisenhower did the only thing he felt he could and ordered the expansion of B-52 production from 17 to 20 per month.<sup>45</sup>

The ICBM issue reached its peak in the fall of 1957. On October 4, 1957, the Soviet Union launched *Sputnik I*, the first artificial earth satellite, into orbit with an R-7 Semyorka rocket. Suddenly, it became clear to the entire world that the Soviet Union had simultaneously beaten the United States in the race to build the first ICBM as well as put the first man made satellite into orbit. American citizens could even track the progress *Sputnik* made across the sky with their radios; the satellite emitted a faint but steady *beep* that could be picked up with ordinary consumer radios. It seemed to many that not only had the Soviet Union caught up to the United States in strategic terms, but had, in fact, surpassed the United States. For the first time in the Cold War, it was thought that the United States was operating from a position of inherent strategic weakness. Soon, there was fear of the “missile gap”, the size of the advantage that the Soviet Union held over the United States in both number and sophistication of ICBMs, was the leading topic of discussion among foreign policy experts within the government, academia, and the media.<sup>46</sup> That there was, in fact, no “missile gap” at all would not become widely known until after it had been fully exploited by politicians, particularly the Democrat critics of the administration such as John F. Kennedy. Therefore, while the fear of a “missile gap” was ultimately unfounded, it had marked impact upon the formation of new strategic

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<sup>45</sup> “Department of Defense, Semi Annual Report of the Secretary of Defense, January 1 to June 30, 1957” (Washington, D.C.: U.S. Government Printing Office, 1957), p. 8

<sup>46</sup> Fred Kaplan, *The Wizards of Armageddon* (Stanford CA: Stanford University Press, 1983), p. 287

policies, and for that reason, it must be considered seriously when analyzing the ways in which American nuclear strategy evolved in the late 1950's and early 1960's.

President Eisenhower, in response to the *Sputnik* launch and ensuing panic, renamed the Science Advisory Committee of the ODM the President's Science Advisory Committee, and immediately charged it with developing a report for the National Security Council that addressed the threat posed by the new Soviet ICBMs. Rowan Gaither, a San Francisco lawyer who was the chairman of the board of the Ford Foundation, was chosen to head the committee. Paul Nitze, the architect of NSC-68 during the Truman Administration, was approached by Gaither to draft the committee's report, and immediately accepted.<sup>47</sup>

The report drafted by Nize was presented to Eisenhower on November 7. Officially titled "Deterrence and Survival in the Nuclear Age", the Gaither Report was short, urgent, and "overflowed with a sense of dead".<sup>48</sup> In only twenty-nine pages, Nitze reported that the Soviet Union had enough nuclear material to construct over 1,500 high yield thermonuclear weapons, and would, by 1959-1962, be in possession of enough ICBMs (100 to perhaps as many as 300) to threaten the United States with the possibility of a successful first strike that would disable the vast majority of SAC bombers which would render America unable to retaliate. This conclusion obviously horrified and deeply unsettled Eisenhower and his top advisers.

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<sup>47</sup> Paul Nitze, *From Hiroshima to Glastnost* (New York: Grove, 1989), p. 100

<sup>48</sup> "Deterrence and Survival in the Nuclear Age," Report to the President by the Security Resources Panel of the Science Advisory Committee, 7 November 1957.  
<<http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB139/nitze02.pdf>>

Nitze and his colleagues on the Gaither Committee were only able to deliver a limited number of recommendations to neutralize the threat of a Soviet surprise attack. Like the Killian Report before it, the Gaither Report assigned the highest priority to improving the ability of the SAC bombers. Again, increasing warning time of a Soviet Attack and further dispersion of the bomber fleet was strongly urged. A system of concrete blast shelters that would house SAC's B-52 fleet was also among the Report's recommendations. Also, again much like the Killian Report, the accelerated development of American ballistic missiles was considered imperative.

Eisenhower, while not convinced by the direst predictions of the Gaither Report, did agree with the need to drastically lower SAC response time, as well as the necessity of an America ICBM. To his credit, both of these goals were met before he left office. SAC implemented a complex system of emergency plans whereby bombers could be scrambled, but would not proceed beyond a designated 'fail safe' point without receiving a specific code to continue from SAC ground control. This made it possible to launch bombers at the earliest warning of a possible attack while drastically reducing the chance that a false alarm would result in an unintended nuclear exchange.<sup>49</sup>

The American ballistic missile program also began to show signs of true progress in the aftermath of *Sputnik* and the Gaither Report. The first ballistic missiles to be made available for deployment were the Thor and Jupiter intermediate-range ballistic missiles (IRBMs) were delivered to Air Force bases in Western Europe beginning in early-1959.

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<sup>49</sup> David Alan Rosenberg, "The Origins of Overkill: Nuclear Weapons and American Strategy, 1945-1960," *International Security*, Vol. 7, No. 4 (Spring 1983), p. 50

While not capable of striking the Soviet Union from American soil, they were able to provide at least some form of missile capability when stationed in NATO countries.

They were equipped with the W49 warhead, the first American nuclear warhead, which had a yield of 1.44 megatons while weighing only approximately 1,600 pounds. Also in early 1959, the first American ICBM, named the Titan I, was successfully tested.

Perhaps the most promising American missile development of the period was the Navy's first submarine launched ballistic missile (SLBM) which would begin production in the summer of 1960. The Polaris SLBMs were equipped with the Navy's new W47 warhead which yielded 600 kilotons each.<sup>50</sup>

With the rapid growth of the American nuclear stockpile, and the expansion of nuclear weapons into the inventories of the Navy and Army, Eisenhower was faced with a new problem: how to coordinate targeting between the different services and commands. The problem was immense. By the end of 1959, SAC had identified over 20,000 potential targets within the Soviet Union, and the addition of the Army and Navy into the nuclear targeting operation left Eisenhower with a lack of a clear target list and nuclear war plan. The resulting confusion in targeting lead to a situation of extreme overkill where a single target within the Soviet Union was targeted by several separate American forces.<sup>51</sup> A solution was proposed by Thomas Gates, Jr., the Secretary of Defense, in the summer of 1960. Essentially, SAC would be given authority to, in

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<sup>50</sup> William M. Arkin, Thomas B. Cochran, and Milton M. Hoenig, "The U.S. Nuclear Stockpile," *Arms Control Today*, Volume 12 (April 1982), pp. 237-239

<sup>51</sup> Fred Kaplan, *The Wizards of Armageddon* (Stanford CA: Stanford University Press, 1983), p. 263

cooperation with war planners from the Army and Navy, to create a National Strategic Target List (NSTL), which would become the military's sole target list, and a Single Integrated Operational Plan, which would function as the general plan for the use of all nuclear weapons possessed by the United States. The first SIOP, named SIOP-62 for the fiscal year of 1962, was completed and implemented by December 1960. In accordance with the never formally altered doctrine of massive retaliation, it called for a single, massive strike against the Soviet Union, China, and Eastern Europe that would utilize the entire American nuclear stockpile (which by then had grown to over 3,200 total nuclear weapons).<sup>52</sup> This was the state of American nuclear strategy when Dwight Eisenhower left office on January 20, 1961.

Eisenhower and John Foster Dulles were largely unable to adapt their strategic thinking to the rapid technological innovation that took place during the second half of the 1950's. The Soviet Union's development and deployment of true two stage thermonuclear weapons that were as powerful as those within the United States' arsenal began to cast serious doubt on the believability and feasibility of the massive retaliation policy. Furthermore, the Soviet Union's lead in missile technology also should have caused the Eisenhower Administration to re-think massive retaliation when it became apparent that a massive American nuclear strike would also result in the wholesale destruction of America's cities. It was simply no longer plausible for the United States to threaten the Soviet Union with a massive nuclear strike in response to relatively low level aggression. It was obvious that Eisenhower and Dulles would not be willing to sacrifice

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<sup>52</sup> "SIOP-62" <[http://www.gwu.edu/~nsarchiv/nukevault/ebb285/sidebar/SIOP-62\\_history.pdf](http://www.gwu.edu/~nsarchiv/nukevault/ebb285/sidebar/SIOP-62_history.pdf)>

hundreds of millions of American lives and trigger a nuclear holocaust over renewed fighting in Korea or even a Soviet annexation of West Berlin.

However, no such changes were made to American nuclear strategy. Even at the height of the panic created by *Sputnik* and the subsequent Gaither Committee Report, massive retaliation was never replaced or even significantly modified. Essentially, the technology of nuclear weapons and their delivery systems advanced so rapidly that massive retaliation rendered obsolete nearly as soon as it was adopted. Even more troubling was the fact that Eisenhower and Dulles were completely unable to incorporate these new technologies into a coherent strategic framework. Leaving massive retaliation in place was incredibly dangerous, and literally threatened the survival of hundreds of millions by seriously increasing the risk of nuclear war.

## Chapter Three

### MAD

#### 1960-1968

In the election of 1960, John F. Kennedy and the Democrats campaigned against the national security policies of the Eisenhower administration in much the same way that Eisenhower and the Republicans had campaigned against the Truman Administration eight years previous. Kennedy saw Eisenhower as complacent and weak, and sought to present a plan of action and fresh thinking to the American electorate. In his acceptance speech at the 1960 Democratic National Convention, Kennedy told the crowd gathered in Los Angeles and the millions watching on television at home that America stood on the edge of a “new frontier”.<sup>53</sup> After his election, his legislative agenda retained the name New Frontier, and there was a need to articulate a defense policy that broke as sharply as possible with the previous administration. Kennedy did not have to search hard to find an alternative. In the second half of the 1950’s, a stunning amount of work had been done on the problem of nuclear strategy by an odd mix of academics, economists, mathematicians, and scientists who had clustered around the RAND Corporation, and had a deep and reasoned critique of Eisenhower, Dulles, and massive retaliation ready to go when Kennedy went looking for a new defense policy.

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<sup>53</sup> John F. Kennedy, “Democratic National Convention Nomination Acceptance Address” 15 July 1960. <<http://www.americanrhetoric.com/speeches/jfk1960dnc.htm>>

The RAND Corporation began life as a division of the Douglas Aircraft Company that was contracted by the United States Army Air Forces to provide analysis of the effectiveness of strategic bombing targeting during World War II. RAND (short for Research and Development) became an independent entity in 1948, and was quickly became an all-purpose think tank for the newly independent Air Force. It quickly began to attract an array of physicists, economists, historians, political scientists, and mathematicians who focused on applying cutting edge analytical techniques, such as game theory, to the problems of the Cold War. As nuclear weapons became ever more powerful and numerous, the civilian analysts at the main RAND office in Santa Monica, California worked to develop methods to maintain logical control of the most illogical of weapons. The leading RAND strategists included Bernard Brodie, Herman Kahn, Albert Wohlstetter, Thomas Schelling, and William Kaufmann, and it would be these civilian analysts who provided that framework for nuclear strategy in the 1960's.<sup>54</sup>

Bernard Brodie was likely the first American nuclear strategist, and he laid the foundation for all who would follow him when, in his 1946 collection of essays on the political ramifications of atomic weapons entitled *The Absolute Weapon*, he posed the question “Is war more or less likely in a world which contains atomic bombs?”<sup>55</sup> This fundamental question would spur the creation of an increasingly large and complex body of work throughout the early years of the Cold War. Brodie, before turning to nuclear weapons, was a scholar of naval power who received a PhD from the University of

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<sup>54</sup> Fred Kaplan, *The Wizards of Armageddon* (Stanford CA: Stanford University Press, 1983), pp. 51-63

<sup>55</sup> Bernard Brodie, *The Absolute Weapon: Atomic Power and World Order*, (New York: Harcourt Brace, 1946) p. 23

Chicago in 1940, served in the Navy's Bureau of Ordnance during World War II, and taught at Yale before leaving for RAND in 1950. Brodie established the basic framework of nuclear deterrence when he wrote, again in *The Absolute Weapon*, that "Thus far the chief purpose of our military establishment has been to win wars. From now on its chief purpose must be to avert them."<sup>56</sup> Brodie's thinking continued to evolve along those lines during his years at RAND, where he was an early advocate for retaining a credible second strike capability, so that even if a nuclear exchange were to occur between the United States and the Soviet Union, the United States would retain a credible deterrent that would help to limit the damage sustained. The value of maintaining a credible second strike became one of the main criticisms leveled against the early American nuclear war plans, and it originated with Bernard Brodie.

While Brodie's work laid down some of the fundamentals of nuclear strategy, his method was that of an historian. His colleagues at RAND were, for the most part, drawn toward methods of analysis that combined a mathematic logic with the scientific method and the new insights offered from the young field of economics. Game theory, the mathematic study of conflict and competition, was eagerly adopted at RAND. Game theory was pioneered by the polymath genius John von Neumann in the 1920s. It was formalized in 1944 when von Neumann collaborated with the economist Oskar Morgenstern in a book entitled *The Theory of Games and Economic Behavior*. Von Neumann would become affiliated with RAND in the late-1940's, and would continue

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<sup>56</sup> Bernard Brodie, *The Absolute Weapon: Atomic Power and World Order*, (New York: Harcourt Brace, 1946) p. 76

to make important contributions to mathematics, computer science, and nuclear weapon design before his untimely death from cancer in 1957.<sup>57</sup>

Game theory rapidly seeped into the work of the younger RAND analysts throughout the 1950's. Among the first to apply the insights offered by Game Theory to nuclear strategy was Thomas Schelling. Originally from California, Schelling received a PhD in economic from Harvard in 1951 after serving with the Marshall Plan in Europe in the late-1940's. Even though he remained a faculty member at Harvard, Schelling served as a consultant to RAND, and his best known work clearly fits into the RAND style. Schelling's analysis of war in his most famous work, 1960's *The Strategy of Conflict*, used Game Theory to argue that war was, in its most basic form, a form of bargaining. It was an extremely violent and destructive form of bargaining, but not fundamentally different from negotiating for the best price on a car, or attempting to negotiate a raise in pay from an employer.<sup>58</sup> By introducing the logic and rationality of economics into the nuclear strategy debate, Schelling strongly criticized the policy of massive retaliation. To Schelling, the all or nothing stance of massive retaliation invited instead of deterred aggression by elevating the payoff of a first strike. In the place of massive retaliation, Schelling argued for a policy of limited reprisals to Soviet aggression that could convince the Soviets to end their aggression without immediately sacrificing the lives of hundreds of millions.

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<sup>57</sup> Fred Kaplan, *The Wizards of Armageddon* (Stanford CA: Stanford University Press, 1983), pp. 63-66

<sup>58</sup> Thomas C. Schelling, *The strategy of conflict* (Cambridge MA: Harvard University Press, 1960), pp. 53-58

Mathematician Albert Wohlstetter spent the 1950's at RAND working on similar problems. Wohlstetter's method was to subject military policies to the rigors of formal, mathematical logic. He came to RAND in 1951 after earning a PhD in mathematics from Columbia and serving on the War Production Board during World War II. He was most interested in maintaining a credible deterrent in an era of rapid technological change and international uncertainty. He was the driving force behind the recommendations to disperse the SAC bombers, harden their hangars, and decrease the time it took to get bombers in the air made in the Killian and Gaither Reports.<sup>59</sup> Wohlstetter, like Brodie and Schelling, argued against the policy of massive retaliation. He viewed the emphasis on a first strike within the SAC war plans left the United States dangerously vulnerable to the Soviet Union's ICBMs. After having his reports repeatedly either condescendingly rebuffed or just ignored by the military for which RAND contracted, Wohlstetter decided to take his arguments to the public. In an article titled "The Delicate Balance of Terror", published in the January 1959 issue of *Foreign Affairs*, Wohlstetter laid out his case for why SAC's vulnerability invited Soviet attack instead of deterring it, and how that fundamentally endangered the survival of the United States. Rather than worrying about whether America could match the Soviet Union's first strike power, the Eisenhower Administration needed to focus its attention and resources on ensuring the survival of a sizable second strike capability.<sup>60</sup> The article was incredibly well received by the small, but increasingly influential set of intellectuals who composed the political science

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<sup>59</sup> Fred Kaplan, *The Wizards of Armageddon* (Stanford CA: Stanford University Press, 1983), p. 109

<sup>60</sup> Albert Wohlstetter, "The Delicate Balance of Terror" *Foreign Affairs* (January 1959) , pp. 211-234

departments at leading universities and served as foreign policy advisers to Congress and the Senate, particularly among Democrats.

While Brodie, Schelling, and Wohlstetter focused on the danger posed by the lack of a credible second strike, others at RAND were attacking the massive retaliation strategy on the grounds that it was simply not a believable threat. William Kaufmann, who came to RAND from the Institute for International Studies at Princeton in 1949, presented perhaps the strongest case for why massive retaliation was counterproductive on a most basic level. Kaufmann argued that it was simply not credible to threaten to destroy the world in response to minor Soviet aggression. The Soviet nuclear capability meant that if the United States were to initiate a massive nuclear attack in response to, for example, renewed fighting in Korea, the Soviet Union would respond with a devastating nuclear attack of its own. Knowing this, Kaufmann pointed out, no president would make the decision to actually follow through on the policy of massive retaliation. Not only was massive retaliation ineffective, but it was actually a detriment to the United States would only result in deterring the deterrer. Instead, the United States needed to have plans to counter communist aggression in “peripheral areas” with a wide variety of responses. Kaufmann saw the decision to reduce conventional forces as a mistake because conventional forces allowed for the gradual escalation of a conflict. Gradual escalation provided time for negotiations to take place that could end the conflict. Instead, the United States had neglected the “requirements of deterrence” by having only one policy that was simply not believable. If the United States was to effectively deter the Soviet Union from engaging in an all-out nuclear war, then it needed to be ready,

willing, and able to check limited Soviet aggression with limited military responses of its own.<sup>61</sup>

The limited war critique of massive retaliation was also made by Herman Kahn who was perhaps the most innovative and impressive analyst at RAND. Kahn was a physicist by training, and had worked on the Manhattan Project with Edward Teller and Hans Bethe, the towering intellectual giants of the atomic bomb program. After the war, Kahn re-enrolled at the California Institute of Technology, and began doctoral work in nuclear physics. However, due to financial difficulties, he was forced to drop out. Shortly thereafter, he was recruited by RAND, and went to work there full time in 1950. Like Brodie, Wohlstetter, and Kaufmann, Kahn found the massive retaliation doctrine to be severely lacking. Kahn, who had an extremely bombastic style that made frequent use of over the top metaphors, compared massive retaliation to a “Doomsday Machine”.<sup>62</sup> The Doomsday Machine, in Kahn’s metaphorical scenario, was a computer linked to the nuclear stockpile. When the computer sensed that the Soviet Union acted in an unacceptable fashion, it would detonate the bombs thereby ending the world. To Kahn, this was the essence of massive retaliation, and it made no sense.<sup>63</sup>

In the place of this “wargasm” offered by massive retaliation, Kahn proposed that limited nuclear war was not only possible, but needed to be incorporated in United States

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<sup>61</sup> William W. Kaufmann, "The Requirements of Deterrence," in *Military Policy and National Security*, edited by Kaufmann (Princeton, New Jersey: Princeton University Press, 1956), pp. 12-38

<sup>62</sup> Fred Kaplan, *The Wizards of Armageddon* (Stanford CA: Stanford University Press, 1983), pp. 233

<sup>63</sup> Herman Kahn, *On Thermonuclear War* (Princeton University Press, 1960), P. 144

war plans. Kahn became increasingly convinced throughout the 1950's that nuclear war was winnable. He developed this idea most fully in his most famous book titled *On Thermonuclear War*. At over 650 pages, *On Thermonuclear War* was a dense, complicated work. When it was released in 1960, it caused immediate controversy with its frank, almost casual descriptions of nuclear war. Kahn had first laid out a detailed description of escalation, which he likened to a ladder with forty-four rungs. They ranged from "ostensible crisis" at the bottom to "spasm or insensate war" at the top. To Kahn, each rung on the escalation ladder provided leaders with an opportunity to resolve the crisis and deescalate, and he intended it to show that war, even when nuclear weapons were used, war was controllable. Indeed, one of the rungs was called "local nuclear war", and Kahn firmly believed that it was possible to engage in a limited nuclear exchange without automatically resorting to total nuclear war.<sup>64</sup> To Kahn, the view that nuclear weapons had no role other than as uncontrollable Armageddon machines was an irrational fatalism that could not be allowed to continue.

Kahn was also obsessed with how to increase survivability in the event of a nuclear attack. He was a strong advocate for the planning and construction of a vast system of civil defense across the United States. He was convinced that even in the worst possible scenario, total nuclear war, human life and society would continue. The first chapter of *On Thermonuclear War* was titled "Will the Living Envy the Dead?", and in it, Kahn laid out his belief that humanity would always be resilient enough to regroup and rebuild regardless of the damage inflicted by even a total nuclear war. Therefore, if the

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<sup>64</sup> Herman Kahn, *On Thermonuclear War* (Princeton University Press, 1960), pp. 208-212 and Herman Kahn, *On Escalation: Metaphors and Scenarios* (New York: Praeger, Publishers, 1965), p. 39

living would not, in fact, envy the dead, and human civilization could be reconstituted, it was imperative to construct shelters that could save as many people as possible in the event of a nuclear exchange. Kahn's obsession with civil defense also allowed the United States to act more boldly in its application of a flexible system of nuclear war. If it could be assured that a large percentage of the civilian population would survive even the most massive Soviet nuclear attack, the United States could more easily escalate hostilities in an attempt to get the Soviet Union to back down. Even if the worst were to occur, if the United States was able to retain a larger and more powerful population, it could, in Kahn's mind, "win" even a total nuclear war.<sup>65</sup>

While this line of thinking was centered in Santa Monica at the RAND Corporation, it spread throughout the foreign policy intellectual establishment during the mid-to-late-1950s. One of the most influential and widely read works on the possibility for limited and flexible nuclear options was Henry Kissinger's 1957 book titled *Nuclear Weapons and Foreign Policy*. At the time, Kissinger was a young, but highly esteemed professor at Harvard, and was also a director at the Council on Foreign Relations as well as a consultant to the Department of Defense. Kissinger's book, which was a best seller, argued that the all-or-nothing approach to nuclear weapons that Dulles and Eisenhower were perusing was weakening America's strategic leverage in the Cold War. Instead, Kissinger wrote that it was time to "create alternatives less cataclysmic than a thermonuclear holocaust."<sup>66</sup> He saw the massive retaliation doctrine as robbing the

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<sup>65</sup> Herman Kahn, *On Thermonuclear War* (Princeton University Press, 1960), p.77

<sup>66</sup> Henry Kissinger, *Nuclear Weapons and Foreign Policy* (New York: Harper, 1957) , p.19

United States of a credible nuclear threat that was essential to the successful conduct of negotiation and diplomacy with the Soviet Union. In a slight twist on the traditional RAND doctrine, Kissinger was in favor of a policy that allowed for limited nuclear strikes because it would give the United States diplomatic leverage necessary to avoid humiliation in the diplomatic arena of the Cold War.

The Army, which had to bear the brunt of Eisenhower's defense cuts and troop reductions, was not inclined to react favorably to the New Look or massive retaliation. The Army was largely left behind as first the Air Force and then the Navy were able to secure massive funding increases for their nuclear arsenals at the expense of funding for conventional forces throughout Eisenhower's tenure as president. The most prominent critic of the New Look to emerge from within the Army was General Maxwell D. Taylor, who was the Army's Chief of Staff from 1953-1959. Taylor, frustrated by Eisenhower's continued disregard for his arguments in favor of conventional forces, retired from active duty in 1959 in order to bring his criticism of the New Look to the public.<sup>67</sup> His book, *The Uncertain Trumpet*, was published in January 1960. In it, he argued that conventional forces were still required to prevent the Soviet Union from gradually eroding the power of the United States through small but constant pressure. Like the RAND analysts, Taylor found the massive retaliation doctrine sorely lacking in believability. Instead, Taylor argued for a "flexible response" that would "contain at the outset an unqualified renunciation of reliance on the strategy of Massive Retaliation. It should be made clear that the United States will prepare itself to respond anywhere,

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<sup>67</sup> John Lewis Gaddis, *Strategies of Containment*, (New York: Oxford, 2005) p.181

anytime, with weapons and forces appropriate to the situation.’<sup>68</sup> Taylor joined John F. Kennedy’s presidential campaign shortly after the publication of *The Uncertain Trumpet*, and would act as Kennedy’s chief adviser on military affairs throughout the 1960 presidential election.

The analysts at RAND and elsewhere who argued for a flexible nuclear strategy spent the Eisenhower Administration being ignored. However, with the election of John F. Kennedy in November 1960, their fortunes began to drastically change. Kennedy had campaigned on a platform of confronting the Soviet Union with a renewed vigor and energy, and after his election he immediately began plans to implement a tougher, more muscular defense policy modeled after the flexible response championed in Taylor’s *The Uncertain Trumpet*. Taylor would continue to act as an informal adviser to Kennedy on military matters until, after the Bay of Pigs fiasco, Kennedy called him back to duty and appointed him Chairman of the Joint Chiefs of Staff on October 1, 1961.<sup>69</sup> The ascendancy of the flexible response was as quick and decisive as that of massive retaliation almost eight years prior.

As important as Maxwell Taylor was to the replacement of massive retaliation with the flexible response, it was Robert McNamara, Kennedy’s Secretary of Defense, who did the most to reorient American nuclear strategy in the ways urged by the RAND civilian analysts. It was through the influence of McNamara that the RAND way of thinking was able to infiltrate the Department of Defense and become the official policy

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<sup>68</sup> Maxwell D. Taylor *The Uncertain Trumpet* (New York: Harper and Row, 1960), p. 146

<sup>69</sup> John Lewis Gaddis, *Strategies of Containment*, (New York: Oxford, 2005) p.198

of the United States. To say that Robert McNamara was an unlikely choice to be Secretary of Defense was an understatement. He was young, only several months older than Kennedy, and had named the president of the Ford Motor Company in November 1960, just months before being asked to join Kennedy's Cabinet. McNamara was an economist and statistician, not a general. During World War II he served as a statistical analyst reviewing the success of Curtis Lemay's strategic bombing campaigns. After the war, he accepted a position at Ford along with several other members of the Statistical Control unit of the Army Air Forces, and began a meteoric rise through the corporate chain that culminated in his short lived stint as president. What he lacked in military experience, he made up for with a startlingly sharp analytical mind.<sup>70</sup>

McNamara, upon taking office, was horrified by the plans for nuclear war with the Soviet Union that were presented to him in SIOP-62. Everything about the plan contained within SIOP-62 struck McNamara as illogical, dangerous, and out dated. McNamara was stunned to learn that there was no plan to reserve a portion of the nuclear arsenal for a second-strike, and that, even with the integration of targets into the SIOP, there were still many "designated ground zeros" which were to be hit with as many as four of the new Minuteman ICBMs carrying a yield of over a megaton each.<sup>71</sup> He was also repulsed by the fact that the SIOP called for the indiscriminate targeting of Eastern Europe, the Soviet Union, and China regardless of whether these nations were involved

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<sup>70</sup> "Robert McNamara" < [http://www.defense.gov/specials/secdef\\_histories/bios/mcnamara.htm](http://www.defense.gov/specials/secdef_histories/bios/mcnamara.htm) >

<sup>71</sup> Scott D. Sagan, "SIOP-62: The Nuclear War Plan Briefing to President Kennedy" *International Security*, Vol. 12, No. 1 (Summer, 1987), p. 31

in the aggression which spurred the nuclear attack or not. To John Foster Dulles all communists might have been the same, but Robert McNamara saw the world in a more complex and nuanced light.

After learning of the extent of the problem with America's nuclear strategy, McNamara began searching for solutions. This led him directly to the RAND Corporation where its civilian analysts were waiting with nearly a decade of reports and analyses on how to escape from the trap of massive retaliation. The first RAND analyst called upon by McNamara for advice was William Kaufmann, and Kaufmann arrived at the Pentagon to brief McNamara on February 10, 1961. Kaufmann's presentation focused on the need to replace the targeting of Soviet cities with a policy of counterforce targeting. Instead of using nuclear weapons as horror weapons to be used against civilians, Kaufmann suggested that they be used, instead, to disrupt the Soviet war machine as much as possible.<sup>72</sup>

There were several reasons why Kaufmann recommended what would come to known as the 'no cities' or counterforce doctrine. First, the United States now possessed the intelligence and the technology to target relatively small military bases thanks to the U2 spy plane and the highly refined gyroscopic guidance mechanisms on the Minuteman ICBMs, respectively. Second, no cities/counterforce allowed for a strategic pause after a first round of nuclear exchanges. Essentially, if the United States struck the Soviet military, it would still maintain the ability to target Soviet cities if the first strike did not stop Soviet aggression. The United States would be holding Moscow and Stalingrad

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<sup>72</sup> William Kaufmann, *The McNamara Strategy*, (New York: Harper & Row, 1964), pp. 66-68

hostage, and it was conceivable that the war could end there. There was also a moral component to the no cities approach that appealed to McNamara. It seemed to him that if the United States only attacked the Soviet military, then the same could be expected in return, and that had the potential to save hundreds of millions of lives, both American and Soviet.<sup>73</sup>

With that single presentation, McNamara began the introduction of the RAND way of thinking and talking about nuclear war into the Pentagon and White House. He then hired three RAND analysts, Alain Enthoven, Charles Hitch, and Henry Rowen, soon to be nicknamed the Whiz Kids, and appointed them to high ranking civilian positions within the Department of Defense.<sup>74</sup> Even more importantly than his personnel decisions, McNamara began to think about nuclear strategy like a RAND analyst. His first priority became the complete overhaul of the SIOP for the fiscal year 1963, and he would come to rely upon the recommendations made by RAND analysts, both at the Pentagon and back in Santa Monica, for the bulk of the new SIOP.

Work on SIOP-63 began in the late spring 1961, and McNamara's Whiz Kids were put in charge of drafting it. Throughout that summer, Enthoven, Hitch, and Rowen worked on figuring out how a flexible nuclear response could be turned into official operational policy for the military. They were joined in Washington by other RAND analysts including Frank Trickl and, most notably, Daniel Ellsberg who would achieve notoriety later in the decade with his release of the Pentagon Papers. They came up with

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<sup>73</sup> Fred Kaplan, *The Wizards of Armageddon* (Stanford CA: Stanford University Press, 1983), pp. 262

<sup>74</sup> Scott Ritter, *Dangerous Ground* (New York: Nation Books, 2010), p. 131

a set of operational plans that could be combined in a number of ways depending upon the desired effect. Targets were divided into five categories which ranged from air bases and missile sites in the most limited strikes up to the familiar all out strikes against cities. Furthermore, options were included that would add or subtract different nations from attack, so that strikes could be ordered against just the Soviet Union while avoiding China and/or the countries of Eastern Europe. Finally, options were included that would allow for choices to be made about the level of detonation, as nuclear weapons detonated in the air and those detonated nearer to the ground can produce radically different effects and levels of damage.<sup>75</sup> Each of these sets of options were able to be combined with these others, so if it was decided that, for example, there needed to be a strike against Soviet air bases and missile sites with high yield groundburst warheads, there would be a plan ready to go immediately.

The new SIOP was finished by December 1961, and McNamara, pleased with its multitude of flexible and controllable options, presented it to President Kennedy.<sup>76</sup> Kennedy was, by that time, even more convinced of the need to replace the rigidity of massive retaliation represented in SIOP-62 with a plan with more options and flexibility than he had been during his campaign. The Berlin Crisis, which lasted from June-November 1961, had shown him the limits of massive retaliation in a very real way. Early in the crisis, Kennedy began to inquire about the possible use of nuclear weapons if the Soviets decided to occupy West Berlin and conventional forces could not dislodge

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<sup>75</sup> "SIOP-63" <<http://www.gwu.edu/~nsarchiv/nukevault/ebb236/SIOP-63.pdf>>

<sup>76</sup> Fred Kaplan, *The Wizards of Armageddon* (Stanford CA: Stanford University Press, 1983), pp. 282

them. He soon found out that the only plan that the military was capable of executing was the one contained in SIOP-62. Upon learning this, Kennedy remarked that his only options appeared to be “humiliation or holocaust” if Khrushchev ordered the Red Army to annex Western Berlin.<sup>77</sup>

With Kennedy’s support for SIOP-63 secured, McNamara began to prepare to unveil the new American nuclear posture to the world in the spring and summer of 1962. First, he delivered a major policy speech on the new nuclear strategy to a meeting of NATO’s foreign ministers, generals, and defense ministers in Athens on May 5. His speech was written by Henry Rowen and William Kaufmann, and it overflowed with the RAND Corporation worldview.<sup>78</sup> McNamara extolled the virtues of the no cities/counterforce strategy while urging the other nuclear members of the alliance: Britain and France to do the same. The French, particularly Charles De Gaulle who refused to treat nuclear weapons as anything other than terror weapons meant for deterrence only, were not impressed with McNamara’s speech, but it was greeted as coup of sorts by the civilian analysts back at RAND.<sup>79</sup>

After the NATO speech, which was private and secret, an opportunity presented itself for McNamara to present the new strategy directly to the American public when he was asked to deliver the commencement address at the University of Michigan in June.

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<sup>77</sup> Theodore C. Sorensen, *Kennedy* (New York: Harper and Row, 1965), p. 667

<sup>78</sup> Fred Kaplan, *The Wizards of Armageddon* (Stanford CA: Stanford University Press, 1983), pp. 283

<sup>79</sup> Fred Kaplan, *The Wizards of Armageddon* (Stanford CA: Stanford University Press, 1983), pp. 285

His speech, known alternately as the Ann Arbor Speech or the “No Cities” Speech, proved to be incredibly controversial. McNamara and his Whiz Kids underestimated just how foreign their logic was to the general public. Even more troubling than the reaction of the American public was the reaction of the Kremlin. The official position of the Soviet Union was that they were interpreting the speech as a declaration of a first strike doctrine and “concrete and practical evidence of a preparation for preventive war”.<sup>80</sup> Nevertheless, McNamara’s public relations tour for no cities/counterforce represented the high tide mark for the RAND Corporation approach to nuclear strategy.

The retreat from the no cities/counterforce doctrine began just months after McNamara’s speech in Ann Arbor. The Cuban Missile Crisis of October 1962 revealed the limits of the RAND/McNamara brand of nuclear strategy, and exposed the glibness with which so many had treated the decision to use nuclear weapons. The Cuban Missile Crisis should have been the perfect scenario for McNamara’s flexible response. Under the RAND model of counterforce escalation, Kennedy would have been advised to immediately strike at the missile bases in Cuba to send signals to Moscow. However, when Kennedy was confronted with the situation, he immediately reverted back to the policy of massive retaliation when he declared that any missile launched from Cuba at the United States would be met with a “full retaliatory response” directed at the Soviet Union.<sup>81</sup> When the opportunity to employ limited nuclear options presented itself, no one

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<sup>80</sup> Robert McNamara “No Cities Speech” June 1962.  
<[http://www.radiochemistry.org/speech\\_archives/text/04\\_mcnamara.shtml](http://www.radiochemistry.org/speech_archives/text/04_mcnamara.shtml)>

<sup>81</sup> Fred Kaplan, *The Wizards of Armageddon* (Stanford CA: Stanford University Press, 1983), p. 305

in the administration was seriously willing to consider the strategy that had been designed for just such a crisis.

After standing on the edge of nuclear war, McNamara realized that a change of strategy was needed. It was clear that the no cities/counterforce doctrine needed to be replaced without reverting to an institutionalization of massive retaliation. The name of the policy which he ended up advocating would become one of the most famous (and infamous) phrases of the Cold War: Mutual Assured Destruction, often known by the acronym MAD. The origins of Mutual Assured Destruction lay in a study ordered by McNamara and carried out by Alain Enthoven and the rest of the Whiz Kids beginning in January 1963. McNamara and his staff determined that it would take 400 megatons to effectively destroy 50% of Soviet military and industrial capacity and kill 33% of its citizens, and they decided that would be enough to deter any attempt at a surprise first strike. Therefore, it was decided that the United States needed to be able to ensure that it would always be able to retaliate with 400 megatons regardless of the severity of a surprise Soviet nuclear attack. The way McNamara, Enthoven, and the rest decided to guarantee the survival of 400 megatons was to assign 400 megatons each to long range bombers, ICBMs, and SLBMs. This tripartite division of the nuclear arsenal would soon come to be called the “strategic triad”, and it would continue to constitute the fundamental division of both American and Soviet nuclear forces for the rest of the Cold War. McNamara knew that the Soviet Union would never be able to destroy all 1200 megatons in a single strike, and so he hoped that it would be deterred for the foreseeable

future without the United States having to face the possibility of initiating a nuclear apocalypse.<sup>82</sup>

Kennedy, much like McNamara, recognized the need to reduce the possibility of nuclear war with the Soviet Union. His handling of the Cuban Missile Crisis had earned him the grudging respect of Khrushchev, and he soon began a series of diplomatic overtures designed to ease tensions with the Soviet Union in order to prevent another crisis of such magnitude from occurring in the future. Kennedy announced his intentions publicly on June 10, 1963 during his commencement address at American University in Washington, D.C. In the speech, which was written by longtime Kennedy speechwriter Theodore Sorensen, Kennedy called for a “genuine peace, the kind of peace that makes life on earth worth living, and the kind that enables men and nations to grow, and to hope, and build a better life for their children.”<sup>83</sup> The only step of this process that Kennedy was able to complete before he was assassinated was the signing of the Partial Nuclear Test Ban Treaty which prohibited the atmospheric and underwater testing of nuclear weapons by the United States and the Soviet Union.

With the move from counterforce to assured destruction, McNamara ended any serious considerations of an American first strike against the Soviet Union. Nuclear weapons, after the official adoption of the assured destruction policy by Lyndon Johnson shortly after his ascent to the presidency in 1963, were no longer thought to have any true

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<sup>82</sup> Fred Kaplan, *The Wizards of Armageddon* (Stanford CA: Stanford University Press, 1983), p. 318

<sup>83</sup> John F. Kennedy, *American University Commencement Address*, 10 June 1963  
<<http://www.americanrhetoric.com/speeches/jfkamericanuniversityaddress.html>>

usefulness other than as a deterrent from attack by other nuclear powers.<sup>84</sup> Even as technology increased and ballistic missiles became more accurate and reliable than ever before, launching a nuclear strike, even a limited one, was never seriously considered again after the retreat from the no cities strategy devised by McNamara and the RAND strategists.

Mutual Assured Destruction also proved to be very conducive to McNamara's desire to slow down the rate of technological innovation and change within the field of nuclear weapons. With the 1200 megaton figure in place, the growth of the American nuclear arsenal could be curtailed. MAD also allowed McNamara to reduce the total number of projected and deployed Minuteman ICBMs from 1200 to 1000 by December 1964, the first time a serious reversal of growth in either the nuclear stockpile or delivery system arsenal occurred.<sup>85</sup> The Partial Test Ban Treaty also worked to reign in the runaway progress of nuclear weapons technology. Indeed, it can be said that the Cuban Missile Crisis caused the first true re-evaluation of the desirability of constant technological progress during the Cold War. The American nuclear arsenal was allowed to grow largely unchecked before McNamara's tenure as Secretary of Defense.

However, technology could not be completely frozen even if it would have better ensured strategic stability. The Soviet Union continued its pursuit of nuclear parity throughout the 1960's, and several new technologies began to emerge towards the end of

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<sup>84</sup> Lawrence Freedman, *The Evolution of Nuclear Strategy: Third Edition* (New York: Palgrave, 2003), p.238

<sup>85</sup> David S. McDonough, "Nuclear Superiority or Mutually Assured Deterrence: The Development of the US Nuclear Deterrent" *International Journal*, Vol. 60, No. 3, (Summer, 2005), p. 815

the decade which would once again require that major adjustments be made to America's nuclear strategy. Still, Robert McNamara was largely responsible for creating a safer and more logical framework for nuclear strategy. By restraining the growth of the American nuclear arsenal and renouncing much of the dangerous rhetoric about first strikes, he helped to greatly reduce the possibility that a minor conflict with the Soviet Union would turn into a suicidal conflagration. Mutual Assured Destruction, despite its ominous name, represented an important step in the development of a credible nuclear deterrent that was not simultaneously an invitation for nuclear war.

## Chapter Four

### Nuclear Strategy and Détente

1968-1980

When Richard Nixon was elected president in November 1968, one foreign policy issue occupied the minds of the citizens of America: the War in Vietnam. College students, journalists, foreign policy intellectuals, government employees, and average American citizens were all painfully aware of the unfolding tragedy in Southeast Asia, as the evening news beamed images of the approximately 300 American soldiers who were killed every week into homes across the United States on a daily basis.<sup>86</sup> However, as important as the American involvement in Vietnam was, Nixon and his Secretary of State, Henry Kissinger, also had to contend with the older and, by that time, deeply ingrained strategic Cold War conflict with the Soviet Union. Nixon and Kissinger were faced with the same problem as their Cold War predecessors: that of rapidly advancing technology rendering past nuclear strategies obsolete. Nixon and Kissinger also altered American nuclear strategy to support their broader Cold War strategies of détente with the Soviet Union and diplomatic engagement with China. Their policies would be largely expanded upon by both Gerald Ford and Jimmy Carter, and the decade of the 1970's became one of general stability and agreement in the realm of nuclear strategy within the

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<sup>86</sup> John Lewis Gaddis, *Strategies of Containment*, (New York: Oxford, 2005), p.272

upper levels of the United States government with few of the major policy shifts of the kind that were made by Dwight Eisenhower and John Kennedy when they took office.

By the time Nixon came to office, the Soviet Union had been engaged in an alarmingly large arms build-up for several years. The new “heavy throw” Soviet ICBM, the SS-9, was far larger than any previous ICBM, and was capable of carrying extremely powerful warheads of up to 25 megatons which soon came to be referred to as ‘silo busters’ because of their ability to penetrate and destroy even the most ‘hardened’ American missile silos with a direct hit.<sup>87</sup> Not only did the Soviet Union come into possession of newer and more advanced weapons, but it was also appeared to be closing the gap in overall numbers of missiles and warheads. While the ‘missile gap’ had caused widespread panic without merit in the late 1950’s, in the late 1960’s it appeared to many at the time that the Soviet Union was finally overtaking the United States in strategic nuclear power.<sup>88</sup>

The main technological advance with which Nixon and Kissinger had to contend with early on was the development of anti-ballistic missile (ABM) systems by both the United States and the Soviet Union which were designed to use ballistic missiles to shoot down incoming missiles before they could reach their target. Research into ABM technology had begun in 1940’s, but they were not considered to be practical or feasible until the late 1960’s. The Soviet Union had the first successful test of an ABM system in

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<sup>87</sup> Matthew G. McKinzie, Thomas B. Cochran, Robert S. Norris, and William M. Arkin, *The U.S. Nuclear War Plan: A Time for Change* (New York: Natural Resources Defense Council, June 2001), p. 43

<sup>88</sup> Pavel Podvig, "The Window of Vulnerability That Wasn't: Soviet Military Buildup in the 1970s--A Research Note", *International Security*, Summer 2008, Vol. 33, No. , pp. 118-138

1961, and plans were being made to design and deploy a system that would protect Moscow from incoming American ICBMs. In America, the ABM program was begun by Bell Telephone Labs in 1946. Codenamed Nike-Zeus, it was to use radar to detect incoming Soviet missiles, but it was deemed too ineffective to be deployed because it was easily defeated by decoy warheads and radar jamming techniques like chaff or the electro-magnetic pulse (EMP) generated by a high altitude nuclear detonation.<sup>89</sup> Interest in ABM technology continued, however, and under pressure from Maxwell Taylor, John F. Kennedy authorized the resumption of the ABM program under the codename Nike-X.<sup>90</sup>

Robert McNamara had been the chief opponent of missile defense throughout the Kennedy and Johnson administrations. He firmly believed that any form of missile defense would be fundamentally destabilizing to the order and logic established by Mutual Assured Destruction. If either the United States or the Soviet Union felt that it was protected from the other side's nuclear arsenal, MAD would break down, and a renewed arms race and possibly an attempt at a first strike could occur. He urged Johnson repeatedly to cancel the ABM project on the grounds that it was unreliable, easily defeated, and provided a false sense of security that could lead to recklessness with nuclear weapons.

Despite McNamara's opposition, both the United States and the Soviet Union were working on ever more complex ABM systems when Nixon took office in January

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<sup>89</sup> "Nike Zeus", *Flight International*, August 1962, pp.166-170

<sup>90</sup> Fred Kaplan, *The Wizards of Armageddon* (Stanford CA: Stanford University Press, 1983), p. 345

1969. Initially, Nixon supported the system which had, by then, been divided into two parts and renamed Sentinel and Safeguard. Sentinel was meant to guard American cities while Safeguard was designed to protect the Minuteman ICBM silos at Grand Forks Air Force Base in North Dakota.<sup>91</sup> Despite the support of several successive American presidents, these programs were extremely costly and could be easily overwhelmed and defeated by Soviet ICBMs. The main justification for their continued existence was the fear that the Soviet Union would deploy a working ABM system first, and there was concern that the Soviet missile defense system ringing Moscow, codenamed the A-35 system, would become operational earlier than expected. However, Nixon's support for Safeguard and Sentinel was actually a ploy to enhance his bargaining power with the Soviets in the Strategic Arms Limitation Talks (SALT) which began in November 1969 in Helsinki, Finland. He and Kissinger began plans for the construction of the Safeguard site largely to put the United States on par with the Soviet Union in terms of deployed ABM systems, which would thereby give the United States an extra chip to trade in the upcoming negotiations.<sup>92</sup>

Concern over ABMs was not the only reason for the beginning of the move toward arms control during the Nixon years. Nixon was, of course, not the first American leader to propose arms limitations talks and treaties with the Soviet Union. For example, other than the Partial Test Ban Treaty, the Nuclear Nonproliferation Treaty (NPT) and the Outer Space Treaty were signed during the waning days of the Johnson

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<sup>91</sup> Lawrence Freedman, *The Evolution of Nuclear Strategy: Third Edition* (New York: Palgrave, 2003), p. 320

<sup>92</sup> Henry Kissinger, *The White House Years*, (Boston: Little, Brown, 1979), pp. 545-548.

Administration, and they certainly were the first steps toward arms control. These early treaties were designed to curb future arms developments and to prevent the acquisition of nuclear weapons by other nations. However, they did very little to stop or even slow the growth of American or Soviet arsenals, much less reverse that growth. Nixon was the first American leader to pursue arms control and limitations in such an aggressive and committed manner. Much of this strategy must certainly be credited to Henry Kissinger. Kissinger saw American power as being on the decline relative to Soviet power, and he saw himself being called to manage that decline in the way most favorable to the United States.<sup>93</sup> Arms limitations treaties would allow the United States to escape from the increasingly costly arms race while simultaneously slowing the development of Soviet nuclear weaponry at a time when fears of Soviet nuclear superiority were growing. His ultimate goal was to limit the nuclear forces of both sides to equal numbers of nuclear weapons that would hold the bare minimum of destructive power required to ensure that the deterrent of MAD remained viable. Essentially, each side would have just enough nuclear firepower to destroy the other. These two, interrelated principles were soon dubbed parity and sufficiency, and they would guide American negotiations.<sup>94</sup> Furthermore, Kissinger saw gaining the cooperation of the Soviet Union as the key to ending incredibly unpopular and destructive conflict in Vietnam. This process of

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<sup>93</sup> Josef Joffe, "The Default Power: The False Prophecy of America's Decline", *Foreign Affairs*. (September/October 2009), p.22

<sup>94</sup> Lawrence Freedman, *The Evolution of Nuclear Strategy: Third Edition* (New York: Palgrave, 2003), p. 343

diplomacy and negotiation was termed *détente*, from the French for “relaxation”, and it became the centerpiece of American-Soviet relations throughout the 1970’s.

However, before the SALT talks could begin in earnest, the United States introduced a new technology that once again shifted the strategic balance of power, and required the adoption of new modes of thinking. This new technological innovation was the multiple independently targetable re-entry vehicle, or MIRV for short. A MIRV warhead would actually contain a cluster of smaller warheads, originally between three and five, which could be launched on one ballistic missile. As the missile re-entered the Earth’s atmosphere, the individual warheads would be split up from the larger cluster, and each individual warhead would hit a separate target. The MIRV was originally developed as a means of defeating and overwhelming future Soviet ABM systems. By attaching multiple warheads to one missile, the Soviet ABM systems would be forced to use one missile for each warhead which would be nearly impossible.<sup>95</sup> The first MIRV capable missile, the Minuteman III ICBM, was deployed just as the SALT negotiations were getting underway in Helsinki. Multiple warheads were also a feature of the Poseidon SLBM which succeeded the Polaris in 1971. Furthermore, the number of warheads which could be carried by each MIRVed missile increased dramatically and over a very short period of time. By 1972, both the Minuteman III and the Poseidon could each carry between ten and fourteen warheads.<sup>96</sup> The main trade off with MIRVs

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<sup>95</sup> Lawrence Freedman, *The Evolution of Nuclear Strategy: Third Edition* (New York: Palgrave, 2003), p. 336

<sup>96</sup> Amy F. Woolf, “U.S. Strategic Nuclear Forces” *Congressional Research Service*. 2009. <<http://fpc.state.gov/documents/organization/121938.pdf>>

was a decrease in the accuracy of each individual warhead, but the overall gain in destructive power was remarkable. MIRVs would come to dominate the American nuclear arsenal within years of their adoption, and the Soviet Union would spend the next several years racing to develop their own MIRV technology.

If détente was the centerpiece of American-Soviet Cold War relations during the 1970's, then the SALT talks were certainly the centerpiece of détente. With American fears about Soviet ABM technology, and Soviet fears of American MIRV technology, there was a mutual desire to limit the advance of further nuclear technology. The American delegation to SALT was headed by Gerard C. Smith who was a longtime nuclear expert in the State Department, and before that had served on the Atomic Energy Commission. The main debate between American and Soviet negotiators early on focused upon finding a mutually agreeable definition of parity in strategic forces. The Soviets had a greater number of ICBMs, and their missiles were capable of delivering much larger warheads. However, the United States had the new MIRV technology, and a much larger fleet of bombers. Furthermore, there was the question of whether the nuclear arsenals of France and the United Kingdom should be included in the negotiations. Similarly, the United States wanted to include Soviet medium and intermediate range that were aimed at Western Europe in the considerations of overall strategic forces.<sup>97</sup> The first two years of SALT negotiations, 1969 and 1970, were largely gridlocked as Kissinger pushed the Soviets to assist the United States in bringing the Vietnam War to a

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<sup>97</sup> Gerard C. Smith, *Doubletalk: The Story of the First Strategic Arms Limitation Talks* (University Press Of America: 1980)

conclusion. However, a consensus on strategic arms limitation, which was, after all, the entire point of SALT, began to emerge in May 1971, and 1972 ended being a breakthrough year in the progress of détente and arms control.

The first true agreement reached during SALT was the limiting of ABM systems. This agreement was turned into a separate treaty, appropriately named the Anti-Ballistic Missile Treaty, and was signed by Nixon and Leonid Brezhnev in Moscow on May 26, 1972. The treaty allowed each nation to build a total of two ABM sites. One was permitted to guard the capital city, and one was permitted to protect ICBM silos.<sup>98</sup> In the end, each side only ended up building one. The Soviets kept the A-35 system surrounding Moscow, and the United States built the Safeguard system to protect the missile silos in North Dakota. However, Safeguard was cancelled and abandoned by 1975 due to its high cost and ineffectiveness.<sup>99</sup> The ABM treaty was really more of a trust building exercise that prepared the way for further arms control negotiations that would have a real impact.

More important than the ABM Treaty, was another agreement, this one not binding, signed by Nixon and Brezhnev at the same time as the ABM Treaty. Officially titled “The Interim Agreement Between The United States of America and The Union of Soviet Socialist Republics on Certain Measures With Respect to the Limitation of Strategic Offensive Arms,” it was essentially a temporary agreement between the two

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<sup>98</sup>“ABM Treaty.” Department of State. 1972.  
<<http://www.state.gov/www/global/arms/treaties/abm/abm2.html>>

<sup>99</sup> Lawrence Freedman, *The Evolution of Nuclear Strategy: Third Edition* (New York: Palgrave, 2003), p. 338

leaders to limit strategic arms production and innovation until more talks could be held that would produce a binding treaty with hard targets and deadlines for arms reduction. This was a freeze, not a reduction, but it was nonetheless an extremely important step towards escaping the technological arms race. In this agreement, American superiority in bombers was accepted while Soviet superiority in ‘heavy throw’ ICBMs was similarly accepted.<sup>100</sup> This temporary agreement allowed negotiations to continue toward a more comprehensive and binding treaty that would formally limit strategic arms.

Success seemed imminent in November 1974, when Nixon’s successor, Gerald Ford, met with Brezhnev in Vladivostok to jointly and officially agree to the framework for a new arms limitation treaty. Under the announced framework, bombers and missiles were counted together and referred to collectively as strategic nuclear delivery vehicles. The total number of strategic nuclear delivery vehicles would be capped at 2400, with lower caps for Soviet ‘heavy throw’ ICBMs. Furthermore, the problem posed by MIRVs was resolved when it was agreed that limitations would be placed upon the total number of armed missiles rather than individual warheads. The total number of MIRVed ICBMs was to be capped at 1320.<sup>101</sup> This agreement was short lived, however, and the advance of technology once again complicated the strategic decision facing the United States. First, the Soviet Union developed a new ICBM, the SS-19 Stiletto, which had the

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<sup>100</sup> “Interim Agreement”. 1974. <http://www.fas.org/nuke/control/salt1/text/salt1.htm>

<sup>101</sup> “Joint U.S.-Soviet Communique, Signed at Vladivostok, November 24,1974” *The Washington Post*. <<http://www.washingtonpost.com/wp-srv/inatl/longterm/summit/archive/com1974-3.htm>>

carrying capacity of a 'heavy' ICBM but was closer to the size of a 'light' ICBM.<sup>102</sup> This development made the previously agreed upon categories more or less obsolete.

Even more important than the new Soviet ICBM, however, was the development of the cruise missile by the United States. Cruise missiles are extremely accurate, self-navigating guided missiles powered by jet engines which can travel at either subsonic or supersonic speeds and can penetrate significantly hardened defenses. Their introduction greatly concerned the Soviet Union because cruise missiles had the potential to be used against Soviet missile silos in a surprise first attack.<sup>103</sup> Indeed, cruise missiles are, by their very nature, offensive weapons which do not fit into the framework of Mutual Assured Destruction. The introduction of cruise missiles and the Soviet SS-19 Stiletto ICBM effectively delayed the consideration of a treaty based upon the Vladivostok framework until after Ford had left office.

Jimmy Carter brought a renewed focus and attention to the issue of strategic arms reduction after he won the presidential election of 1976. He largely continued the détente policies begun by Henry Kissinger under Presidents Nixon and Ford. Carter initiated a second round of SALT negotiations with Brezhnev in 1977, and by 1979 a treaty was ready that would replace the Interim Agreement of 1974. It called for modest but actual strategic arms reductions, with more stringent limits being placed upon Soviet 'heavy' ICBMs. Both sides were limited to a total of 2,400 strategic nuclear delivery vehicles each with MIRVed missiles being capped at 1,200. This actually reduced Soviet missile

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<sup>102</sup> John Prados, *The Soviet Estimate* (New York: Dial Press, 1982), ch. 13

<sup>103</sup> Kenneth P. Werrell, *The Evolution of the Cruise Missile*, (AU Press, 1985)

launching capabilities as the Soviet Union possessed slightly more than 2,400 delivery vehicles at the time. The United States, on the other hand, had slightly fewer than 2,400 total delivery vehicles at the time, so it would actually be able to increase its total number nuclear delivery vehicles slightly to achieve parity. Furthermore, the Soviet Union agreed to build no more SS-18's, and would equip the 308 that had already been built with no more than ten warheads each even though they had been designed to carry as many as thirty-eight 250 kiloton warheads.<sup>104</sup> This was the Treaty that was signed by Carter and Brezhnev in Vienna on June 19, 1979.

This victory would be incredibly short-lived, however, and the SALT II Treaty would never be formally ratified by the United States Senate. The Soviet invasion of Afghanistan in December 1979 was the beginning of the end of détente as a whole. Also in late 1979, it was discovered that a Soviet combat brigade had been conducting training and other operations in Cuba.<sup>105</sup> Carter pulled the Treaty from Senate consideration in January 1980 as tensions between the United States and the Soviet Union once again flared. Despite the fact that the SALT II Treaty was never formally adopted by the United States, its strategic force limitations would actually be followed by both sides until it finally collapsed in 1986 during the Reagan Administration.

While American and Soviet diplomats spent the 1970's attempting to ease tensions and reduce nuclear weapon arsenals, a renewed interest in developing strategies for limited or selective nuclear options was building within the United States Department

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<sup>104</sup> "SALT II" < <http://www.fas.org/nuke/control/salt2/index.html> >

<sup>105</sup> John Lewis Gaddis, *Strategies of Containment*, (New York: Oxford, 2005), p.349

of Defense. Under Mutual Assured Destruction, American war plans had largely reverted back into a series of massive retaliatory strikes. The actual plans for nuclear war devised during the Johnson Administration were, in fact, quite similar to those drawn up in the 1950's during the Eisenhower Administration. The main difference, of course, was that under MAD, those plans were reserved as a last resort in response to a Soviet first nuclear strike on America. Still, not everyone was satisfied with the limiting nature of these all-out attack plans, and a revival of interest in having greatest flexibility occurred.

The renewed interest in selective nuclear options was spurred by the Henry Kissinger's intense frustration with the extremely limiting options he was confronted with during the 1970 Black September crisis in Jordan. Kissinger would again feel uncomfortably confined by the military's war plans during the Yom Kippur War in 1973. Kissinger was attempting to figure out a way to threaten the Soviet Union with nuclear weapons in order to prevent a Soviet intervention on the side of Egypt. However, the smallest plan with which the Joint Chiefs of Staff could put together would have involved the use of over 200 nuclear weapons directly against Soviet territory. Kissinger realized that this was not a credible threat, and began to assemble a team to consider the re-integration of limited options into American war plans. The report issued by Kissinger's team was titled National Security Decision Memorandum 242 (NSDM-242), and immediately became popular within the Department of Defense.<sup>106</sup> This was the beginning of the revival of the flexible response, and it soon developed in ways that would not please Henry Kissinger.

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<sup>106</sup> William Burr, "The Nixon Administration, the "Horror Strategy," and the Search for Limited Nuclear Options, 1969–1972" *Journal of Cold War Studies* Vol. 7, No. 3, Summer 2005, p.37

Secretary of Defense James Schlesinger, appointed by Nixon in July 1973, emerged as the chief evangelist for the recommendations for flexible and selective options contained within NSDM-242. Schlesinger was the perfect candidate to champion the resurrection of the flexible response. He had earned a Ph.D. from Harvard, taught economics at the University of Virginia, and was a RAND Corporation analyst from 1963-1969 when he left to join the Nixon Administration. He moved from the Bureau of the Budget, to the Atomic Energy Commission, and was even made the Director of Central Intelligence for several months before being appointed Secretary of Defense.<sup>107</sup> Schlesinger, immediately upon taking office, began to push for a vast increase in the nuclear options available in the event that deterrence failed to prevent a Soviet attack.

Schlesinger mainly desired to reinstate the Robert McNamara/ RAND counterforce strategy, but updated to make use of the technological advances of the previous decade. He even hired William Kaufmann back to the Department of Defense. MIRVs and cruise missiles, according to Schlesinger, were ideal for counterforce strikes because of their effectiveness in accurate strikes against hardened targets like military bases, air fields, and missile silos. He was successful in winning support from President Nixon for his renewed policy of flexible counterforce strikes in January 1974 when Nixon officially signed and approved NSDM-242.<sup>108</sup>

However, the triumph of what came to be called the Schlesinger Doctrine did not last long. Throughout 1974, Schlesinger began to make decisions that seemed to be at

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<sup>107</sup> “James R. Schlesinger” <<http://www.mitre.org/about/bot/schlesinger.html>>

<sup>108</sup> Fred Kaplan, *The Wizards of Armageddon* (Stanford CA: Stanford University Press, 1983), p. 372

odds with larger policy of détente and the SALT negotiations. First, he began to push for drastically increased defense budgets that included research funding for an American ICBM program, codenamed M-X, that would match the ‘throw weight’ of the Soviet missiles. He also began to campaign for the B-1 bomber, a supersonic, high altitude long range bomber that had no other purpose than to drop nuclear weapons on the Soviet Union. Finally, he lobbied for funding for a new, faster, more accurate cruise missile program. These programs were each incredibly unpopular with Henry Kissinger, who was by that time the most powerful figure in American foreign policy circles. Kissinger felt that Schlesinger was deliberately attempting to sabotage SALT with his requests for new offensive weapons that were making the Soviets extremely uneasy and increasingly distrustful. Kissinger began lobbying President Ford to dismiss Schlesinger, which he finally did in November 1975.<sup>109</sup> It is ironic that it was Kissinger who was originally behind the push for selective options and NSDM-242.

Even though Schlesinger was fired in 1975, quite a few of his targeting ideas remained in place throughout the Carter Administration. Indeed, Carter, who had studied engineering and served on a nuclear submarine in the Navy, was quite drawn to a number of RAND-esque ideas such as counterforce targeting and damage limiting. Carter’s most important contribution to American nuclear strategy, other than his efforts to pass the SALT II Treaty discussed above, was his approval of Presidential Directive 59 in July 1980. In short, PD-59 specified that the United States would consider nuclear options equally with conventional options in the event of an armed conflict with the Soviet

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<sup>109</sup> Fred Kaplan, *The Wizards of Armageddon* (Stanford CA: Stanford University Press, 1983), p. 376

Union. PD-59, in addition to instructing the military to build ever more flexibility into its war plans, also ordered the military to make plans for a prolonged, but limited nuclear exchange, and that the main targets of nuclear strikes should be Soviet military forces.<sup>110</sup> American nuclear strategy, by the time Carter left office, had, in many important ways, come full circle.

The relationship between nuclear strategy and détente was extremely complicated. While the process of détente was designed to ease tensions between the superpowers, and SALT, the main forum for Soviet-American negotiation, resulted in some early and impressive successes, it was ultimately unable to control the destabilizing evolution of technology. MIRVs and cruise missiles both became ubiquitous in American and Soviet arsenals despite the efforts of the SALT negotiators. The revival of flexible counterforce targeting was largely the result of improved missile accuracy, and the supposedly stable logic of Mutual Assured Destruction began to crumble. The most unambiguous success of the SALT process was the ABM Treaty, and that was largely because ABM technology was never very reliable, and more importantly, the invention of MIRVs made ABM systems obsolete before the Treaty was even signed. As détente crumbled in 1979, a new, even more dangerous phase in the Cold War arms race was about to begin.

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<sup>110</sup> “PD-59” January 19, 1981. <<http://www.fas.org/irp/offdocs/pd/pd59.pdf>>

## **Chapter Five**

### **Reagan and the End of the Cold War**

**1980-1991**

The election of Ronald Reagan in 1980 was the final nail in the coffin of détente, a policy that Reagan routinely and emphatically denounced. Reagan was elected on platform of fierce and unbending anti-communism in the wake of the Soviet Union's invasion of Afghanistan, and it seemed reasonable to many when it was suggested that a "Second Cold War" was beginning. Rather than the negotiation and conciliation of Nixon, Ford, Carter which he routinely ridiculed, Reagan promised strength and resolve in confronting the "Evil Empire" that was the Soviet Union, and for the first few years of his administration, that is essentially what happened. In the realm of nuclear weapons, the Reagan Administration originally pursued a policy that called for a massive arms buildup that would enable the United States to not just survive a nuclear war with the Soviet Union, but to unequivocally prevail if deterrence could not be upheld. However, as the 1980's progressed, Reagan's policies shifted towards nuclear defense, and his proposed Strategic Defense Initiative program ignited a massive public debate about the role of nuclear weapons in society. Just as fears of nuclear war and its consequences reached their peak, Reagan and his new Soviet counterpart, Mikhail Gorbachev, developed a most unexpected rapport that led to the final thawing of the Cold War. The arms race was replaced by a renewed emphasis on arms control that would continue to

characterize the final years of the Cold War as the Soviet Union began to collapse at the end of the decade.

Ronald Reagan's campaign against détente was part of a general conservative reaction against cooperation with the Soviet Union that began to take shape during the mid-1970s. The one person most responsible for building the case against détente and in favor of a much more confrontational nuclear strategy was Paul Nitze. Nitze was, as previously discussed, a longtime American diplomat and defense official who had been among the very first Americans on the ground at Hiroshima after the atomic bomb was dropped as a member of the Strategic Bombing Survey. He was also the author of NSC-68 and the Gaither Report while at the State Department. He served as Secretary of the Navy in the Johnson Administration and as Deputy Secretary of Defense in the Nixon Administration. He was also a member of the SALT delegation during the SALT I negotiations.<sup>111</sup> Despite his involvement with the initial round of SALT negotiations, he would emerge as one of the most ferocious opponents of SALT II and the Carter Administration's defense policies and nuclear strategy, and his criticisms would go on to have far reaching influence on the policies of the Reagan Administration.

Nitze began his campaign against SALT and détente when he quit the American delegation. He was an early adviser to Jimmy Carter's presidential campaign, served on his transition team, and was even considered for the position of Secretary of Defense. However, his hawkish views were out of step with Carter's desire to continue the SALT

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<sup>111</sup> Nicholas Thompson, *The Hawk and The Dove: Paul Nitze, George Kennan, and the history of the Cold War*, (New York: Henry Holt, 2009)

process.<sup>112</sup> Nitze then decided to take his criticism of détente directly to the public when he published an article in *Foreign Affairs* in January 1976 entitled “Ensuring Strategic Stability in an Era of Détente” that made the claim that the Soviet Union now had the ability to destroy the majority of American ICBMs in their silos with one orchestrated strike. Nitze argued that the combination of MIRVs and ‘heavy’ ICBMs gave the Soviets the ability to penetrate and destroy even the most hardened of American ICBM silos. Furthermore, Nitze claimed that the Soviets had constructed a massive, clandestine civil defense program that would allow for extremely quick and effective evacuations of their major cities. This, according to Nitze, meant that the Soviet Union had the ability to attack the United States, disable the majority of its ICBMs, and easily survive any American counter-attack while holding enough second strike missiles in reserve to destroy American cities in retaliation.<sup>113</sup> Essentially, Nitze was claiming that the Soviet Union could both initiate a nuclear war and win it. He played fast and loose with the facts, to be sure, but his polemic against détente was effective at galvanizing a conservative movement that was unwilling to consider the Soviet Union as anything but a monstrous foe out to destroy America and conquer the world.

He would continue his public attack on détente with an article in *Foreign Policy* entitled “Deterring Our Deterrent” which appeared in the magazine’s Winter 1976-77 edition. This article marked the further development of Nitze’s personal obsession with

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<sup>112</sup> Nicholas Thompson, *The Hawk and The Dove: Paul Nitze, George Kennan, and the history of the Cold War*, (New York: Henry Holt, 2009), p.254

<sup>113</sup> Paul H. Nitze, “Assuring Strategic Stability in an Era of Détente,” *Foreign Affairs*, Vol. 54, No. 2 (January 1976), pp. 207-232

megatonnage and ‘throw weight’. Nitze maintained that SALT’s preoccupation with delivery vehicles was dangerously misguided, and that the Soviet’s possession of ‘heavy’ ICBMs and extremely high yield warheads compromised America’s ability to effectively deter Soviet aggression because the Soviet Union would always have the strategic advantage in terms of total megatonnage regardless of whether it was a first or second strike that was being considered.<sup>114</sup> Nitze remained convinced that the sheer size and power of the Soviet nuclear arsenal negated the supposed advantages of the American arsenal like speed and accuracy.

While Nitze’s articles in *Foreign Affairs* and *Foreign Policy* exposed the public to his criticism of détente, he was also deeply involved with two organizations that proved to be extremely influential on the hawkish policies of the Reagan Administration. The first of these organizations was a semi-autonomous intelligence analysis group set up in 1975 within the Central Intelligence Agency to independently evaluate the findings presented in the National Intelligence Estimate (NIE) about Soviet military technology and capabilities. This group was named Team B, and Paul Nitze was deeply involved from the beginning. The analysts selected were mostly conservative hawks who were suspicious that the Soviet Union was concealing the true scope and sophistication of its nuclear arsenal. Team B conducted its analysis throughout 1975 and 1976, and its report was finished in December 1976.<sup>115</sup>

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<sup>114</sup> Paul H. Nitze, “Deterring Our Deterrent,” *Foreign Policy*, No. 25 (Winter 1976-77), pp. 195-210.

<sup>115</sup> Fred Kaplan, "Can the CIA Be Saved?" *Slate* (July 9, 2004).  
<[http://www.slate.com/articles/news\\_and\\_politics/war\\_stories/2004/07/red\\_herrings.html](http://www.slate.com/articles/news_and_politics/war_stories/2004/07/red_herrings.html)>

In its report, Team B alleged that the CIA had consistently underestimated Soviet military capabilities and misinterpreted Soviet intentions. Team B contended that Soviet Union had a much larger economy than reported in the NIE, and that the Soviets had developed a large fleet of mobile ICBMs which could be hidden from treaty mandated inspections. They also alleged that the Soviets had ignored the ABM Treaty, and were constructing several advanced and elaborate ABM systems. Team B made a number of even more incredible claims. For example, it was alleged that the Soviet Union was working on anti-satellite and anti-submarine technologies. From this, Team B concluded that the Soviet Union was not simply attempting to deter the United States with its nuclear arsenal, but was actively planning ways to launch and win a nuclear war.<sup>116</sup> It is now known that most of Team B's supposed findings were wildly speculative, and almost wholly inaccurate. The NIE prepared by the CIA came much closer to presenting the truth of Soviet capabilities and intentions.<sup>117</sup> However, the report issued by Team B contributed greatly to the beginnings of the backlash against détente that would become a cornerstone of Ronald Reagan's early defense policies.

Paul Nitze was also the founder of the Committee on the Present Danger, an organization that was essentially the public version of Team B. Indeed, both organizations shared many of the same members, and advocated for the same hawkish, conservative policies and against détente and SALT II. Originally formed in the early

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<sup>116</sup> "Soviet Strategic Objectives: An Alternative View: Report of Team B" (Washington, D.C.: CIA, December 1976)

<sup>117</sup> See, for example: Anne Hessing Cahn, *Killing Détente: the Right Attacks the CIA* (University Park: Pennsylvania State University Press, 1998).

1950s, Nitze revived the organization in 1975 upon his departure from the government. The Committee mainly worked to influence elected officials through lobbying, and to sway public opinion through media appearances. Ronald Reagan even became a member, and thirty-three other members became officials in the Reagan Administration after his election.<sup>118</sup> The influence of Nitze and his fellow Committee members on the policies of the Reagan Administration was immense even though their fears of Soviet nuclear superiority were almost entirely wrong.

Ronald Reagan, during the 1980 presidential campaign, effectively portrayed Jimmy Carter as weak on defense. However, the massive arms buildup called for by Reagan and his hawkish advisors was actually begun by Carter. Reagan certainly increased the scope of the arms buildup, but the majority of his most cherished defense programs had been funded by the Carter Administration. The era of re-armament would last roughly from 1981-1983, and a wide array of nuclear weapons related programs would receive massive funding increases. For example, the M-X ICBM program was begun by Carter and expanded by Reagan. Renamed the Peacekeeper, it was intended as an answer to the heavy Soviet ICBMs that so concerned Paul Nitze. Reagan doubled the number to be built to 100, and drastically increased development funding. Furthermore, plans were devised for a new system of superhardened, closely grouped silos that would protect the new ICBMs from even the most powerful Soviet warheads.<sup>119</sup>

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<sup>118</sup> Fred Kaplan, *The Wizards of Armageddon* (Stanford CA: Stanford University Press, 1983), p.381

<sup>119</sup> Lawrence Freedman, *The Evolution of Nuclear Strategy: Third Edition* (New York: Palgrave, 2003), p.387

Another one of Reagan's star programs was the B-1B Lancer bomber. Originally cancelled and reinstated several times since the 1960's, Reagan once again reinstated the project and greatly increased its funding. The B-1 Lancer was a stealth equipped, long range, bomber capable of supersonic speeds and extremely high altitudes. It was designed specifically to drop nuclear bombs on the Soviet Union, and it was considered to be a strictly nuclear bomber with no plans made to arm it with conventional weapons. . The B-1 project had been plagued with multiple problems and cost overruns throughout its history. However, a new generation of strategic bomber was desired due to the fact that the B-52 dated from the early 1950's, and fear of Soviet technological advances was running rampant.<sup>120</sup>

The Trident SLBM was yet another of the Reagan Administration's most cherished projects. It was first deployed by the Carter Administration in 1979, but Reagan greatly increased the numbers that were to be built. The Trident featured greatly improved accuracy compared to its predecessor, the Poseidon. It was able to reliably strike targets with an accuracy of 1250 feet, which was a breakthrough for SLBMs. Furthermore, the Trident was able to carry up to eight 100 kiloton MIRVed warheads, also an advance over the Poseidon. The Trident also had a significant range advantage over the Poseidon without adding size or weight. In fact, the Trident was lighter than its predecessor.<sup>121</sup>

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<sup>120</sup> Lawrence Freedman, *The Evolution of Nuclear Strategy: Third Edition* (New York: Palgrave, 2003), p.387

<sup>121</sup> Dennis R. Jenkins, *B-1 Lancer: The Most Complicated Warplane Ever Developed*. (New York: McGraw-Hill, 1999), p. 62

Lightweight and highly mobile missiles, both of the ballistic and cruise types, represented one final category of weapon that was championed by the Reagan Administration. The Midgetman Small ICBM (SICBM), which never actually made it out of the prototype phase, was intended to be launched from either road or rail mobile units, and each Midgetman was to have carried a single 475 kiloton warhead.<sup>122</sup> The Midgetman program was an obvious response to the mobile Soviet SICBMs which had caused Paul Nitze, Team B, and the Committee on the Present Danger so much consternation in the 1970's. New cruise missile designs were also sought, with particular emphasis placed upon those that could be air-launched from jets and those that could be launched from ships and submarines.<sup>123</sup> These new programs were announced by the Reagan Administration in October 1981 as the entire range American nuclear forces were targeted for modernization and strategic improvement.

This massive arms buildup was begun with one goal in mind. The United States would no longer simply seek to deter nuclear war, or even survive one, but it would now, under the leadership of Ronald Reagan, seek to prevail at all levels of conflict. This strategy was based largely on Herman Kahn's theory of 'escalation dominance'.<sup>124</sup> Essentially, the Reagan Administration sought to have the ability to defeat the Soviet Union at any level of hostility that was necessary, and by doing so, would always have the strategic bargaining power to either escalate or de-escalate in the most favorable

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<sup>122</sup> "MGM-134A Midgetman / Small ICBM" <<http://www.globalsecurity.org/wmd/systems/sicbm.htm>>

<sup>123</sup> Lawrence Freedman, *The Evolution of Nuclear Strategy: Third Edition* (New York: Palgrave, 2003), p.387

<sup>124</sup> Robert Jervis, *The Illogic of American Nuclear Strategy* (Ithaca: Cornell University Press, 1984). Ch. 5

terms possible. Taken to its logical conclusion, escalation dominance would require the ability to win even an all-out nuclear war. Therefore, the Reagan Administration's plans to prevail were directly tied to escalation dominance, and the arms buildup and technological research proposed in 1981 were the means by which the United States would acquire escalation dominance. This was an extremely interesting example of strategy driving technology rather than the other way around as was typically the case throughout the Cold War.

While the arms buildup and general hawkishness of the early Reagan Administration was exactly what Paul Nitze had dreamed of during the years of détente, flaws quickly began to appear in the logic of the new Reagan strategy. First and foremost, many of the highly touted weapons systems were years away from becoming functional and deployable, and, even more troubling, many were plagued with design flaws and massive cost overruns. The most notable example of this was the M-X/Peacekeeper ICBM program and its accompanying superhardened silo program. Jimmy Carter had been unable to win support from Congress for the massive silo complexes that would be required even in sparsely populated states such as Nevada and Utah. The Reagan Administration was similarly unable to secure basing, and the entire project was on the verge of being scrapped entirely. Eventually, Reagan would appoint former National Security Advisor Brent Scowcroft to head a committee that would determine the feasibility of the M-X/Peacekeeper program. The Scowcroft Commission eventually was able to cobble together a pared down program that reduced the number of Peacekeepers to be built, and proposed that they be stored in modified Minuteman

silos.<sup>125</sup> By early 1983, the centerpiece of the Reagan arms buildup was already in jeopardy, and a new strategic plan was required.

Rather than prevailing through the use of offensive technology, Reagan's new proposal would involve harnessing a multitude of even more complex technologies in the pursuit of an overarching missile defense system. Named the Strategic Defense Initiative (SDI), this ambitious defense program was designed to finally allow the United States to escape from the harsh logic of MAD, which Reagan found to be morally repugnant.<sup>126</sup> Reagan was convinced that SDI was, in fact, the correct strategy to pursue by Edward Teller, one of the original geniuses of the Manhattan Project and a primary designer of the first thermonuclear bomb, shortly after the dismaying report by the Scowcroft Commission in early 1983. SDI was actually a system of multiple programs rather than one single defense proposal. It called for the development of an array of both ground-based and space-based sensors and detectors which would direct a variety of anti-missile weapons that included other missiles, lasers, and even directed energy weapons.<sup>127</sup>

Reagan publicly unveiled SDI on March 23, 1983 during an Oval Office address that was broadcast nationwide. It caused an immediate and monumental controversy both within the United States and the Soviet Union, though for mostly different reasons. In America, Reagan's proposal was largely ridiculed. SDI was soon being referred to as

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<sup>125</sup> Lawrence Freedman, *The Evolution of Nuclear Strategy: Third Edition* (New York: Palgrave, 2003), p.394

<sup>126</sup> John Lewis Gaddis, *Strategies of Containment*, (New York: Oxford, 2005), p.357

<sup>127</sup> Harold Brown, "Is SDI Technically Feasible?" *Foreign Affairs*, Vol. 64, No. 3, America and the World 1985 (1985), pp. 435-454

“Star Wars”, and it quickly became evident that most of the American scientific community regarded the program as largely ridiculous.<sup>128</sup> Furthermore, SDI was criticized because it appeared to violate the terms of both the ABM Treaty and the Outer Space Treaty.<sup>129</sup> Most SDI programs that were begun yielded little practical results, but the importance of Reagan’s SDI announcement on American nuclear strategy was, nonetheless, quite important. SDI was a genuine, if seriously flawed, attempt to finally escape MAD, and it also called into question the value of defensive weapons in comparison to offensive weapons. Finally, and most importantly, it really highlighted the complex relationship between technology and strategy. Throughout the Cold War, technology and strategy were constantly outpacing one another. Usually new technology forced the development of new strategies, but the reverse also occurred, and the SDI proposal was the perfect example of that.

SDI was controversial within the United States, but it was downright terrifying in the Soviet Union. Reagan repeatedly claimed that he intended to share the technology behind SDI with the Soviet Union, but the Soviet leadership never truly believed him.<sup>130</sup> Instead, the Soviet leadership saw SDI as a sign that Reagan was possibly plotting a nuclear first strike. 1983 marked the high point of tensions between the Soviet Union and the United States during Reagan’s term in office. The massive arms buildup was a fresh memory, the SDI proposal was deeply troubling, and Reagan was referring to the Soviet

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<sup>128</sup> Lawrence Freedman, *The Evolution of Nuclear Strategy: Third Edition* (New York: Palgrave, 2003), p.396

<sup>129</sup> Fred S. Hoffman, “The SDI in U.S. Nuclear Strategy: Senate Testimony,” *International Security*, Vol. 10, No. 1 (Summer, 1985), pp. 13-24

<sup>130</sup> John Lewis Gaddis, *Strategies of Containment*, (New York: Oxford, 2005), p.359

Union was the “evil empire”. However, a combination of quite disparate events would soon begin to radically transform relations between the superpowers, and Reagan and Gorbachev would come to develop a most unlikely relationship that ultimately lead to the end of the Cold War.

In America, a popular movement developed that questioned the very logic of the ever increasing destructive power of nuclear weapons. The ‘freeze’ movement, as it came to be known, called for a halt to the arms race. The growth of the ‘freeze’ movement in the 1980’s was spurred a number of provocative scientific studies of the possible long-term effects of a nuclear exchange. Carl Sagan, Richard P. Turco, Owen Toon, Thomas P. Ackerman, and James B. Pollack developed the theory of nuclear winter in 1983. Sagan’s subsequent popularization of the nuclear winter theory had an immense impact on the nuclear war debate in America. Nuclear winter was the name given to the postulated debilitating effect of a nuclear war between the superpowers. Essentially, the amount of dust and smoke that would be sent into the stratosphere after a major nuclear exchange would cause temperatures on Earth to decrease significantly. It was Sagan’s conjecture that if the nuclear exchange was large enough, the ensuing nuclear winter had the potential to bring about the extinction of the human race.<sup>131</sup> Nuclear winter made Herman Kahn’s sunny predictions of human resiliency from the early 1960’s seem horribly naïve and dangerous. Suddenly, the American public became very aware of the dangers of an unchecked increase in nuclear weapons. As the ‘freeze’ movement grew, it

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<sup>131</sup> R. P. Turco, O. B. Toon, T. P. Ackerman, J. B. Pollack, and Carl Sagan "Nuclear Winter: Global Consequences of Multiple Nuclear Explosions". *Science* 222, 1983, pp.1283–92.

became much harder for congressman to justify the pursuit of ever more destructive weapons to their constituents.

With SDI on the rocks, tensions with the Soviets at an all-time high, and a growing dissatisfaction among the American electorate with the continuation of the arms race, Reagan decided to make the bold decision to offer new arms negotiations with the Kremlin in the spring of 1983. According to eminent Cold War historian John Lewis Gaddis, Reagan was willing to negotiate with the Soviet as long as those negotiations “were geared toward ending, not perpetuating, the Cold War.”<sup>132</sup> However, negotiations got off to a shaky start, as Reagan and his Soviet counterparts, first Yuri Andropov and then Konstantin Chernenko, were unable to do much but argue. It was not until 1985, and the ascension of Mikhail Gorbachev after the death of Chernenko, that truly substantive arms reduction talks were able to begin.

The personal relationship between Reagan and Gorbachev that would come to be so crucial to the end of the Cold War began in October 1985 at the Geneva Summit. No definite agreements were reached, and the two leaders clashed over SDI and the continued Soviet military involvement in Afghanistan, but, more importantly than any policy arguments, Reagan and Gorbachev began to develop a personal rapport that would only develop in the coming years.<sup>133</sup> Following on the heels of this first positive step, Gorbachev, in January 1986, announced his willingness to discuss a plan that would result in the complete elimination of both nuclear weapons and ballistic missiles by the

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<sup>132</sup> John Lewis Gaddis, *Strategies of Containment*, (New York: Oxford, 2005), p.357

<sup>133</sup> Ronald Reagan, *The Reagan Diaries*, Douglas Brinkley, ed. (New York: HarperCollins, 2007), p.369-371

year 2000. Reagan was immediately receptive due to his innate dislike of the potential of nuclear war, and plans were made for another Soviet-American summit in Reykjavik that scheduled for October 1986.<sup>134</sup>

However, before the summit could commence, Reagan, Gorbachev, and the rest of the world were given yet another reminder of the danger inherent in nuclear technology when the Soviet nuclear power plant at Chernobyl, Ukraine experienced a catastrophic explosion in April 1986. Radioactive fallout was spread across significant swaths of Ukraine and Belarus.<sup>135</sup> Chernobyl reinforced the idea that nuclear technology, even when it was not intended for military use, could still cause a fundamentally unacceptable level of death and destruction. The Chernobyl disaster was minor compared to the detonation of even a small nuclear weapon, but its human and ecological impact showed just how detached from anything resembling reality nuclear war strategy had become. The glib talk of the RAND strategists and defense intellectuals about limited nuclear exchanges or ‘prevailing’ in a nuclear war could no longer be continued. Chernobyl only strengthened Reagan’s belief that nuclear war needed to be made impossible.

The Reykjavik Summit was a monumental moment even if the few agreements that were reached there ultimately fell apart. During the summit, Reagan and Gorbachev came remarkably close to agreeing on framework for the mutual and complete

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<sup>134</sup> John Lewis Gaddis, *Strategies of Containment*, (New York: Oxford, 2005), p.365

<sup>135</sup> *Environmental consequences of the Chernobyl accident and their remediation: Twenty years of experience. Report of the Chernobyl Forum Expert Group ‘Environment’*. (Vienna: International Atomic Energy Agency. 2006). p. 180

elimination of nuclear weapons. Gorbachev's only requirement was that Reagan agree to finally relinquish his support for the Strategic Defense Initiative. Reagan, who still believed in the possibility of a mutual missile defense system that would cover both the United States and Soviet Union, refused. Despite Reagan's repeated promises to share any SDI innovations with the Soviet Union, Gorbachev was not willing to take him at his word. With that one point of contention, the summit quickly fell apart with no final agreement in place.<sup>136</sup> Essentially, Ronald Reagan had his dream of mutual disarmament and an end to the technological doomsday machine within his grasp, but let his faith in another, incredibly improbable technological innovation derail it. While it is unlikely that the type of treaties necessary to truly achieve zero nuclear weapons and zero ICBMs were ever really possible, this was the closest that the either side ever came to achieving that dream.

Despite the deeply unfortunate ending of the Reykjavik Summit, some of the less ambitious proposals for nuclear disarmament were kept alive, and another summit was scheduled for Washington, D.C. in December 1987. By sticking to these less revolutionary topics, Gorbachev and Reagan were able to come to an agreement on the status of Soviet and American ballistic and cruise missiles that were of shorter range than ICBMs. This agreement was formally signed at the end of the Washington Summit, and it became known as the Intermediate-Range Nuclear Forces Treaty (INF). Both sides agreed to eliminate all IRBMs and cruise missile with ranges between 300-3,400 miles by 1991. The INF Treaty would eventually result in the destruction of 2,692 total

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<sup>136</sup> John Lewis Gaddis, *Strategies of Containment*, (New York: Oxford, 2005), p.366

missiles.<sup>137</sup> The Washington Summit, with its realist and pragmatic approach, succeeded where Reykjavik had failed.

The INF Treaty would be the last arms reduction deal concluded during Reagan's presidency, and while Reagan did not achieve his dream of finally negating the threat posed by nuclear weapons, he was responsible for a remarkable shift in American nuclear policy. His support for a massive arms buildup early in his administration was driven by a deep distrust of the Soviet Union. However, his search for a way to end the blackmail of Mutual Assured Destruction first led him to put his faith in the promise held by technology. The Strategic Defense Initiative, while poorly thought out and mostly improbable, was meant to finally remove the oppressive fear of nuclear annihilation that driven so much of the Cold War. When the promise of technology proved to escalate rather than ease tensions with Soviet Union, Reagan turned to the human interaction of diplomacy and negotiation. He found a kindred soul in Mikhail Gorbachev, and through their relationship, Reagan accomplished much of what decades of careful strategic planning and endless arms races had been unable to: the legitimate, believable, and lasting reduction of the threat of nuclear war between the United States and the Soviet Union.

Reagan was succeeded by George H.W. Bush, his vice president, in January 1989. Bush's single term in office was marked by the final breakdown of the Soviet Union and the official end of the Cold War. His most important contribution to American nuclear strategy/policy during the final days of the Cold War, was his signing of the first

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<sup>137</sup> "INF Treaty" < <http://www.state.gov/www/global/arms/treaties/inf1.html> >

Strategic Arms Reduction Treaty (START I) with Mikhail Gorbachev on July 31, 1991. The talks which led to the signing of START I actually began in 1982 with a proposal made by Ronald Reagan for the reduction and limitation of ICBMs, SLBMs, and nuclear warheads. However, they were delayed and sidetracked numerous times as Gorbachev's predecessors were reluctant to negotiate, and SDI complicated superpower relations. The START talks were reinvigorated significantly as the Soviet Union began to disintegrate in the late 1980's.<sup>138</sup> Bush and his foreign policy team moved rapidly, and the final agreements contained within START I set the maximum total number of nuclear warheads that could be deployed by each side at 6,000 while ICBMs were limited to 1,600 each.<sup>139</sup> While START I did not remove the threat of nuclear war, it did quite effectively restrain further destabilizing technological advances. Bush also wisely concluded the signing of START I before the Soviet Union officially dissolved into chaos later that year. By the time START I was ratified by the United States Senate, the Cold War was officially over. The United States and the Soviet Union, despite numerous close calls, never used nuclear weapons against one another. In the end, neither side dared to take the risk of sparking the apocalypse.

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<sup>138</sup> Lawrence Freedman, *The Evolution of Nuclear Strategy: Third Edition* (New York: Palgrave, 2003), p. 423

<sup>139</sup> "START I" < <http://www.fas.org/nuke/control/start1/index.html> >

## Conclusion

The purpose of this thesis was to trace the development of American nuclear strategy in the Cold War by focusing on the ways in which technological advances alternately dictated certain policies and was dictated by them. United States nuclear strategy alternated multiple times between attempting to use improved nuclear weapons technology to either prevent or at least make nuclear war as ‘controllable’ as possible, and attempting to artificially retard technological progress in order to maintain some semblance of strategic stability. No consistent nuclear strategy was ever able to be implemented over any significant stretch of time as events consistently showed the flaws and dangerous weaknesses within each strategy that was adopted. Rather than attempting to pick one strategy out of the multitude discussed in this thesis and holding it up as the ‘best’, I instead worked to show why each strategy was adopted as American policymakers struggled to fit nuclear weapons into some sort of logical, safe, and responsible framework. I was far more interested in exploring the ways in which nuclear weapons inspired a wide variety of detailed and serious thought. The hard, often unpleasant, and even downright ugly choices that were made with respect to nuclear strategy were forced by the circumstances of the Cold War, and are not only remain fascinating from an historical point of view, but, hopefully, might offer some form of guidance for the future.

Indeed, while the threat of nuclear war diminished substantially with the end of the Cold War, nuclear weapons still pose many difficult questions for policymakers in the

United States and around the world. Nuclear proliferation, arms reduction, stockpile security, and attempts by terrorist groups existing outside the established international system of states are all problems that will have to be faced in coming years. The increasingly multi-polar world of the 21<sup>st</sup> century, with several powerful states possessing sizable nuclear arsenals, requires new strategic thinking. While no one can be sure what the strategies devised to deal with each of these issue will look like, the willingness to “think about the unthinkable”, to borrow a line from Herman Kahn, will almost certainly remain a requirement of those who will guide American nuclear strategy in the future.<sup>140</sup>

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<sup>140</sup> Herman Kahn, *Thinking about the Unthinkable*, (New York: Horizon Press, 1962).

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