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## **A Primer on U.S. Strategic Nuclear Policy**

David M. Kunsman and Douglas B. Lawson

Prepared by  
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# A Primer on U.S. Strategic Nuclear Policy

David M. Kunsman  
Arms Control Studies Department

Douglas B. Lawson  
Strategic Weapons Studies Department

Sandia National Laboratories  
P.O. Box 5800  
Albuquerque, NM 87185-0425

## **Abstract**

This primer presents a succinct summary of the evolution of U.S. nuclear deterrence policy from the initial development of nuclear weapons until the present day. This is not a definitive history but an introduction to deterrence policy for those with limited background in this area. The concept of deterrence is discussed in several ways – in a general description of deterrence theory, in an historical review of nuclear policy evolution, in a discussion of the future of deterrence, in historical examples of deterrence successes and failures, and in a review of significant contributors to the study of nuclear policy. The intent is to present an authoritative, unclassified account. To accomplish this, to the extent possible, primary source documents were located and utilized if they were available and declassified. These included unclassified Presidential nuclear policy guidance from the Presidential libraries, official JCS histories and State Department Foreign Relations histories. The writings of noted nuclear strategists and historians were also valuable resources for this primer on U.S. strategic nuclear policy.

## Acknowledgements

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This work could not have been completed without the active involvement of librarians. Thus, we thank Nancy Orlando and Glenda Sweatt of the SNL Technical Library, Monica Dorame and Rob Wiberg at the University of New Mexico Zimmerman Library, Government Information Department, and historians at STRATCOM, especially Dr. Todd White, and at the Presidential libraries.

Finally, we thank Susie Maldonado and Jean Russell for their invaluable editorial advice and assistance and Judy Fahlberg, Deanna Wagner, and Carolina Chavez for their logistical support.

Although many of the photos reproduced herein were found within Sandia, we acknowledge that we have copied photos from the internet web pages of the U.S. Air Force Museum at Wright-Patterson Air Force Base, the Brookings Institution “The U.S. Nuclear Weapons Cost Study Project,” and the Federation of American Scientists.

Lastly, the pictorial representation of the deployed U.S. Strategic nuclear weapons for 1989 to 2007 is taken from the speech by Secretary of State Madeleine Albright to the Non-Proliferation Treaty Review Conference held at the United Nations in New York on April 24, 2000.

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## Preface

The purpose of this document is to present a succinct summary of the evolution of U.S. nuclear deterrence policy. The primary audience is those with limited background in this area. This is not a definitive history but an introduction to deterrence policy that we hope will stimulate further study and discussion of this important topic.

This document briefly describes the nuclear policy of the United States since the advent of nuclear weapons. The concept of deterrence is discussed in several ways – in a general description of deterrence theory, in an historical review of nuclear policy evolution by eras, in a discussion of the future of deterrence, in historical examples of deterrence successes and failures, and in a review of significant contributors to the study of nuclear policy.

A serious effort was made to compile an authoritative, unclassified account of U.S. nuclear history with an emphasis on the evolution of deterrence policy. To accomplish this, to the extent possible, primary source documents were located and utilized if they were available and declassified. Unclassified Presidential nuclear policy guidance from the Presidential libraries, official JCS histories and State Department Foreign Relations histories (which contain National Security Council minutes and government studies) were among the primary sources utilized. The writings of noted nuclear strategists and historians were also valuable resources. As more primary source data is declassified, the later history presented herein will likely need to be expanded, if not revised.

Nuclear strategy is a complex subject. The authors welcome comments on the selection of facts and interpretation of events included in this summary. Comments can be directed to us by mail or e-mail at

David M. Kunsman  
Department 9815  
MS0425  
Sandia National Laboratories  
P.O. Box 5800  
Albuquerque, NM 87185

[dmkunsm@sandia.gov](mailto:dmkunsm@sandia.gov)

Douglas B. Lawson  
Department 9813  
MS0417  
Sandia National Laboratories  
P.O. Box 5800  
Albuquerque, NM 87185

[dblawso@sandia.gov](mailto:dblawso@sandia.gov)

Finally, we stress that this document represents the opinions of the authors alone and not that of Sandia National Laboratories.



**Figure 1. B-29**

## 1. Deterrence

Deterrence is a complex concept. The word deter derives from a Latin root, *deterre*, that means, “to frighten from” or “to turn aside, discourage, or prevent from acting.” For those deterred, deterrence involves a process of weighing the benefits of a contemplated action against assessed risks or losses. If a certain course of action is averted because of the belief that unacceptable loss or punishment will result as threatened, deterrence has been achieved. Deterrence is a communication process with elements of punishment and assurance. An adversary must believe that certain actions will result in unacceptable risks and losses and, conversely, that averting those actions will prevent the execution of the threats. The process of deterrence involves assessing both what is known and what is not. Capabilities to punish can be measured with good knowledge, but intentions and willingness to act or show restraint cannot.

James Schlesinger, former Secretary of both Defense and Energy and Director of Central Intelligence, has written

The goal for the military might of the United States and its allies since the late forties has been to create an effective structure of deterrence that will preclude outright military assault....

The heart of deterrence lies in the development of strategies and forces providing a credible response in the event of direct military assault. The need for this planned response that is both credible and effective is a frequently misunderstood aspect in the successful development of a defense posture. In the absence of a credible response, deterrence becomes a façade. For, if deterrence were to fail, there would be no effective counter. And such a condition could in periods of tension make assault attractive.

A credible military response as the essential element in deterrence has sometimes been referred to as a war-fighting capability. This term has unfortunately lent itself to misunderstanding. The objective of such a capability is to deter—i.e. to avoid war-

fighting by making deterrence effective. It might be more illuminating to refer to that credible military response as a peace-maintaining capability. The underlying point, however, is that the sharp distinction frequently drawn between deterrent and war-fighting capabilities is a bogus one. Yet, this semantic confusion has been the source repeatedly of obfuscation in public discussion. It is the capacity to threaten a credible response that makes deterrence effective.<sup>1</sup>

A major part of the credible response capability of the U.S. military has been nuclear weapons. The purpose these weapons is to deter the use of weapons of mass destruction in crises or conflicts. Nuclear deterrence refers to preventing other possessors of nuclear weapons from using them by the threat of nuclear retaliation. A nuclear force may also be used as a threat to discourage biological, chemical or large-scale conventional aggression. In the Cold War, the U.S. employed the threat of nuclear weapons to deter a massive conventional attack against NATO by the Soviet Union and its allies. The U.S. did not rule out the first use of nuclear weapons in such an event.

At the dawn of the nuclear age in 1946, Bernard Brodie, a Naval strategist, stated that nuclear weapons had changed the world of military strategy:

The first and most vital step in any American security program for the age of atomic bombs is to take measures to guarantee to ourselves in case of attack the possibility of retaliation in kind. The writer in making this statement is not for the moment concerned about who will *win* the next war in which atomic bombs have been used. Thus far the chief purpose of our military establishment has been to win wars. From now on its chief purpose must be to *avert* [emphasis added] them. It can have almost no other useful purpose.<sup>2</sup>

Since Brodie's statement, the concept of nuclear deterrence has evolved but there is a strong argument that nuclear weapons have played a significant role, if not the key role in war prevention. The world was engulfed in two horrendous world wars within thirty years, and then, with the development of nuclear weapons and an understanding of their destructiveness, no further major war among the major world powers occurred. Malcolm Rifkind, former defense and foreign secretary for the United Kingdom, discussed the deterrence role of nuclear weapons in a 1993 House of Commons speech. He stated that "[N]uclear weapons have played, and continue to play, a fundamental role in perhaps the most effective system of war-prevention of modern times—the Atlantic Alliance." He added, "The value of nuclear weapons...lies not in classical concepts of war-fighting or war-winning, nor just in deterring the use of nuclear weapons by an adversary but in actually preventing war." The deployment of nuclear weapons removed a long time ago "any rational basis for a potential adversary believing that a major war could be fought in Europe and won."<sup>3</sup> This view was supported by Ambassador C. Paul Robinson, director of Sandia National Laboratories, in a recent paper: "Perhaps the most important strategy we have ever articulated is that of deterrence—to convince other nations that acts of aggression will pose unacceptable risks to them in the form of assured, significant retaliation by U.S. forces. This deterrent strategy has been generalized to a very high level, to the point that the U.S. deterrent forces now fulfill a single universal purpose—to *prevent wars*."

[emphasis in original] He continued to note that he meant not just nuclear wars, but all major power wars.<sup>4</sup>

Schlesinger has also declared “Nuclear weapons shaped the outcome of the international confrontation known as the Cold War.” He has compared nuclear weapons to Britain’s ships-of-the-line that kept Napoleon’s army from crossing the channel and directly challenging Great Britain. Furthermore, he has also argued that the burden of proof as to the effect of the existence of nuclear weapons on the lack of a world-wide conflagration since 1945 lies with those who say that nuclear weapons had no effect. His thesis is that one can argue that nuclear weapons did *not* have an impact if one can successfully argue that

- the U.S. would still have been as engaged internationally as it was
- Europe would have been “self-confident and stalwart.”
- the Soviet Union would have “exhibited continuous constraint.”<sup>5</sup>

In the last 50 years there has been a great deal of debate about strategic nuclear deterrence, and different nuclear policies have evolved based on different viewpoints. Keith Payne, Chairman and President, National Institute for Public Policy (NIPP) summarizes these different nuclear strategies in a recent publication:

[The strategic deterrence theory established in the post-WWII era], the Assured Vulnerability theory of deterrence, was popularized in the 1950s and 1960s, finding tremendous receptivity on Capitol Hill, among academic commentators and think tank specialists, journalists, government officials, and eventually in the military. It became the prevailing paradigm. It involves a series of assumptions, logically related implications, and a set of policy recommendations that have significantly determined the types of forces the United States has and has not purchased, and the arms control policies it has pursued. As applied during the Cold War, its basic precept was that threats of nuclear retaliation could provide a reliable basis for deterrence. The superpowers, calculating rationally and sensibly, would refrain from extreme provocation because of the ultimate possibility of nuclear retaliation....

Assured Vulnerability is a broad theory of deterrence and encompasses the three alternative approaches to deterrence policy that have served as the basis for Western debate on the subject: the “War-Fighting” approach, with its heavy strategic force requirements; “Minimum Deterrence,” with very modest strategic force requirements; and “Mutual Assured Destruction” ... with its requirements falling between “War-Fighting” and “Minimum Deterrence.” Each of these three approaches to policy address the question ‘how much is enough’ in terms of the nuclear threat thought necessary to undergird ‘stable’ deterrence....<sup>6</sup>

Alternately, Colin Gray, University of Hull, UK, another nuclear strategist and author, has suggested:

[T]here are two theories of deterrence, punishment or denial. In principle, a candidate enemy may be deterrable either by the threat to punish him in ways that hurt him very badly or by the threat to defeat his armed forces in the field and thereby deny him achievement of his objectives.<sup>7</sup>

Historically, the U.S. has embraced both theories. In the Cold War, it used both the threat of punishment for its strategic deterrent and denial for its tactical deterrent in Europe. Most of the discussions by nuclear strategists, however, have focused on deterrence by the threat of punishment, the “assured vulnerability” as previously described.

Because nuclear weapons have not been used in anger since 1945, many analysts assert that deterrence has worked. Others believe this argument to be a fallacy since deterrence cannot be logically proven to have worked. Timothy Garton Ash, historian at St. Antony’s College, Oxford, has noted that it is “...a basic rule of historic logic that one can never state with certainty ‘what would have happened if.’”<sup>8</sup> This is particularly germane when a non-event (no war) is being considered: What is the cause of something not occurring? In the vernacular, if you awaken with no elephant in your bedroom, it does not mean that the elephant repellent you put on the previous night worked. While deterrence cannot be proven, it can be said that deterrence did not demonstrably fail.

The value of deterrence is also challenged because of the difficulty of “calculating” deterrence from the vantage point of only one side. Colin Gray has written, “[A] relationship of deterrence...necessarily is cooperative.” Deterrence is not solitaire. There is a side that is deterring and a side (at least one) that is being deterred. One cannot exist without the other. In its report in 1983 recommending the MX, the Scowcroft Commission wrote, “Deterrence is not an abstract notion amenable to simple quantification. Still less is it a mirror image of what would deter ourselves. Deterrence is the set of beliefs in the minds of the Soviet leaders, given their own values and attitudes, about our capabilities and our will.”<sup>9</sup> The challenge is to calculate deterrence for each adversary, based on an in-depth knowledge of the culture, values, and capabilities of each. Given that our knowledge of a potential opponent’s mind can never be complete, deterrence always has elements of unreliability and uncertainty. That does not mean that a deterrence calculation is without validity.

Schlesinger has contemplated the logic puzzle of deterrence and what can be stated about the value of nuclear weapons.

No one can run history over again. Historical what-might-have-beens are always intriguing, rarely persuasive. If nuclear weapons had not existed, and consequently had not played their role during the Cold War, what would have been the result? We do know that Warsaw Pact military capabilities represented a substantial threat for almost four decades, that Western Europe was politically and militarily vulnerable and economically weak for a substantial period after World War II, and that the Western allies were unwilling to provide conventional forces to match those of the East. We also know that nuclear weapons were central to the strategy of the Western alliance, that they served as the glue that bound the alliance, and that they were critical to and fortified the

role of the United States as military protector and leader of the Western nations. To contemplate a world without nuclear weapons was frightening for the governments of Europe. That was demonstrated as late as the Reykjavik Summit in 1985, when President Ronald Reagan toyed with the idea that both sides might rid themselves of nuclear weapons. The alarm that overtook Europe at the bare hint of such an outcome underscores a fundamental truth: that during the Cold War nuclear weapons may well have been the salvation of a free Europe.<sup>10</sup>

John Lewis Gaddis, often described as the preeminent American diplomatic historian of the Cold War, also respects the deterrence value that nuclear weapons had during the Cold War, but with a thought-provoking conclusion. At the end of World War II, there was a power vacuum in Europe into which the Soviet Union wished to expand and did so in Eastern Europe. The U.S. used nuclear deterrence to maintain the status quo for Western Europe. But, he goes on to argue that while nuclear weapons may well have prevented World War III, they probably prolonged the Cold War: “nuclear weapons exchanged destructiveness for duration.” Nuclear weapons were generally cheaper to have than comparable conventional forces. Paying for the latter could have led to the impoverishment of the Soviet Union earlier than the 1980s. Nuclear weapons focused the definition of power as being megatons in particular, the military in general, to the exclusion of diplomacy, economics, etc. The Cold War should have ended after the Cuban Missile Crisis, that everyone involved should have recognized the bankruptcy of the Soviet system, but the fixation on megatons kept it going for another 35 years.<sup>11</sup> Although his idea looks at the last several decades differently than other views, Gaddis still fundamentally endorses the deterrent effect of the nuclear stockpile.

Actually, however, we do not need to look retrospectively to find recognition of the deterrent value of nuclear weapons. Such recognition was prospective and predates the first atomic explosion at Trinity Site. Niels Bohr, an originator of atomic theory, arrived at Los Alamos in 1943. His first question to J. Robert Oppenheimer was, “Is it big enough?” He meant, was the bomb being developed big enough to make, in Oppenheimer’s words, “the prospect of future wars unendurable?”<sup>12</sup> Since the development of nuclear weapons, there has not been a major power war, or any war, comparable to those of 1914-1918 and 1939-1945. Therefore, theorists might argue about deterrence and proofs as if they were philosophers arguing the finer points of some syllogistic logic, but the practitioners of deterrence know the past and continuing value of nuclear weapons.



**Figure 2. B-2 with Test B61 Bomb**

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## 2. A Brief History of the Strategy of Nuclear Weapon Deterrence

This section is a brief history of strategic deterrence since the development of nuclear weapons. Deterrence has evolved and been applied in distinct eras, which basically correspond to the ideas espoused by different presidential administrations. In general, however, when an administration has changed, but its political party has not, the new administration continued the nuclear strategy policy of its immediate predecessor. Hence the continuity allows us here in a short primer to consider jointly the two different administrations; they can be thought of as belonging to the same deterrence policy “era.” Before more detail is presented about each era, we provide an overall summary table.

In the more detailed discussions of each era, context for the deterrence policy is provided in the form of the identities of the president, secretaries of defense and state, and the Soviet leader as well as a listing of some important world events, nuclear weapon events, and strategic nuclear weapon systems. Where we have discerned differences between policy and implementation, we discuss those differences. After the eras are presented, the “enduring themes” of deterrence policy are summarized in the last section of this chapter.

The discussion for the earlier administrations is more detailed than for the later ones. The reasoning is two-fold. First, the earlier administrations were the “trail blazers” with regard to either developing or adopting a nuclear deterrence theory and then creating a policy to apply that theory. It was also during those administrations when the technologies (e.g., thermonuclear weapons, intercontinental ballistic missiles) were developed that still drive current nuclear strategy. Second, there is simply more documentation available in the public domain from the earlier times. Minutes of National Security Council meetings, for example, are almost always classified and only from the earlier administrations have the minutes from many of its meetings been declassified and released. The minutes for more recent meetings remain classified.

Ideas, arguments, and rivalries swirl about and keep reappearing over the past 55 years. There are some historic parallels between the technical, political, and moral arguments set forth on thermonuclear weapons research and development in the late 1940s and early 1950s and on national missile defense today (ABM debates in the 1960s and 1970s also demonstrate a reappearance of arguments). The concept of minimal deterrence, raised during the Nuclear Posture Review in 1994, was first raised by Bernard Brodie in the 1940s, and, as shall be seen, it has been considered again over the years by such people as Robert Cutler, the National Security Advisor to President Eisenhower, and President Kennedy. A constant debate within the U.S. nuclear strategy community has occurred over whether U.S. policy should include the option of preemptive strikes; for the early days of the Cold War, preemption, promoted by some, was argued away because U.S. intelligence concerning potential Soviet nuclear targets was sparse. The satellite imagery and signals intelligence of today did not exist then. Preemption has

entered policy discussions several times since then. Furthermore, questions have been raised over the years on the role of nuclear weapons in defense vs. that of conventional weapons. Lastly, interservice rivalries and budget considerations have played a part in policy and weapons development. A unified strategic command was first proposed over 40 years ago.

This history will need to be re-visited as additional information becomes available. As deliberations within the national security portions of more recent administrations are declassified, or additional documents of the older administrations are declassified, a fuller understanding of this history will be possible, and at least some discussions, conclusions, and inferences provided here will likely change.

Table 1 summarizes the U.S. leadership and evolving strategic nuclear plans and policies. This table is also available in electronic form with hyperlinks to more detailed information.

# NATIONAL WAR PLANS AND POLICIES

President	Secretary of Defense	Chairman of the JCS	CINCSAC/ CINCSTRAT	National War Plan	National Policy Guidance	OSD Guidance	JCS Guidance	Related Events
1945	Henry L. Stimson			TOTALITY				
1946	Robert P. Patterson		George C. Kenney	PINCHER				<a href="#">[Summary of Early Plans]</a>
1947	James V. Forrestal			BOILER; CHARIOTEER				WSEG established
1948				HALFMOON/FLEETWO	NSC-30			
1949	Louis A. Johnson			TROJAN; OFFTACKLE	NSC-20/4			Harmon Report
1950	George C. Marshall			SHAKEDOWN; EWP 1-	NSC-68			
1951	Robert A. Lovett	Omar N. Bradley (Army)	Curtis E. LeMay	EWP 1-51				
1952								
1953				EWP 1-53	NSC-162/2			
1954	Charles E. Wilson			50-54				Killian Report
1955		Arthur W. Radford (Navy)		BWP 1-55				
1956	Neil H. McElroy			BWP 1-58				Gaither Report
1957		Nathan F. Twining (Air Force)						Study 2009 or Hickey Report
1958	Thomas S. Gates		Thomas S. Power					
1959				BWP 1-60			NSTAP 60	JSTPS established 1 Sep 60
1960							NSTAP 61	
1961	John F. KENNEDY	Lyman L. Lemnitzer (Army)		SIOP 62			NSTAP 62	McNamara's U of Michigan speech
1962		Maxwell D. Taylor (Army)		SIOP 63				
1963	Robert S. McNamara			SIOP 64			NSTAP 64	Kent Study
1964	Lyndon B. JOHNSON		John D. Ryan					
1965				SIOP 4				
1966		Earle G. Wheeler (Army)	Joseph J. Nazzaro	SIOP 4A				
1967	Clark M. Clifford			SIOP 4C				
1968				SIOP 4E/F				NSSM-3
1969	Richard M. NIXON	Melvin R. Laird	Bruce K. Holloway	SIOP 4G/H				
1970				SIOP 4I/J				
1971		Thomas H. Moorer (Navy)	John C. Meyer	SIOP 4K/L				
1972				SIOP 4M/N				NSSM-169 Study (Foster Panel)
1973	Elliot L. Richardson							
1974	Gerald R. FORD	James R. Schlesinger		SIOP 4O/Ox	NSDM-242	NUWEP 74	Guidance for SIOP 5	
1975			Russell E. Dougherty	SIOP 4P				
1976	Donald H. Rumsfeld	George S. Brown (Air Force)		SIOP 5/5A			JSCP (C) FY 76	
1977				SIOP 5B	PD-18		JSCP (C) FY 77-78	PRM-10
1978	James E. CARTER	Harold Brown	Richard H. Ellis	SIOP 5C				NTPR (Leon Sloss)
1979				SIOP 5D			JSCP (C) FY 79-80	
1980		David C. Jones (Air Force)		SIOP 5E	PD-59	NUWEP 80		PD-58 Continuity of Government
1981				SIOP 5F	NSDD-13		JSCP (C) FY 81	
1982			Bennie L. Davis	SIOP 5G		NUWEP 82	JSCP (C) FY 82-83	DIA Damage Criteria Study (DCS)
1983		Casper W. Weinburge	John W. Vessey Jr. (Army)	SIOP 6			JSCP (C) FY 84	
1984				SIOP 6A		NUWEP 84	JSCP (C) FY 85	DIA NSWP DCS
1985			Larry D. Welch	SIOP 6B			JSCP (C) FY 86	
1986				SIOP 6C			JSCP (C) FY 87	DIA Moderate Confidence DCS
1987		William J. Crowe Jr. (Navy)	John T. Chain, Jr.	SIOP 6D		NUWEP 87	JSCP (C) FY 88	
1988	Frank C. Carlucci			SIOP 6E			JSCP (C) FY 89-90	Herres Targeting Study
1989				SIOP 6F				Strategic Target Review
1990	George BUSH	Richard B. Cheney		SIOP 6G			JSCP (C) FY 91-92	
1991		Colin L. Powell (Army)		SIOP 6H				NPWG
1992			George L. Butler	SIOP 93		NUWEP 92	JSCP (C) CY 93-95	<a href="#">STRATCOM established 1 Jun 92</a>
1993	Les Aspin			SIOP 94				
1994	William J. CLINTON	John M. Shalikashvili (Army)	Henry G. Chiles, Jr. (USN)	SIOP 95				NPR
1995				SIOP 96				
1996			Eugene G. Habiger	SIOP 97				CJCSI 3110.04 '96
1997	William S. Cohen	Henry H. Shelton (Army)		SIOP 98	PDD-60			
1998			Richard W. Mies (USN)	SIOP 99				
1999				SIOP 00		NUWEP 99		
2000				SIOP 01				CJCSI 3110.04A '00

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## 2.1 The Truman Era—“Genesis” 1945-1953

President--Harry Truman 1945-1953

SecDef—James Forrestal 1947-1949, Louis Johnson 1949-1950, George Marshall 1950-1951, Robert Lovett 1951-1953 (Note: until 1947 the cabinet secretaries were Secretary of War (Robert Patterson 1945-1947 and Kenneth Royall 1947) and Secretary of the Navy (James Forrestal 1945-1947))

SecState—E. R. Stettinuis, Jr. 1944-1945, James Byrnes 1945-1947, George Marshall 1947-1949, Dean Acheson 1949-1953

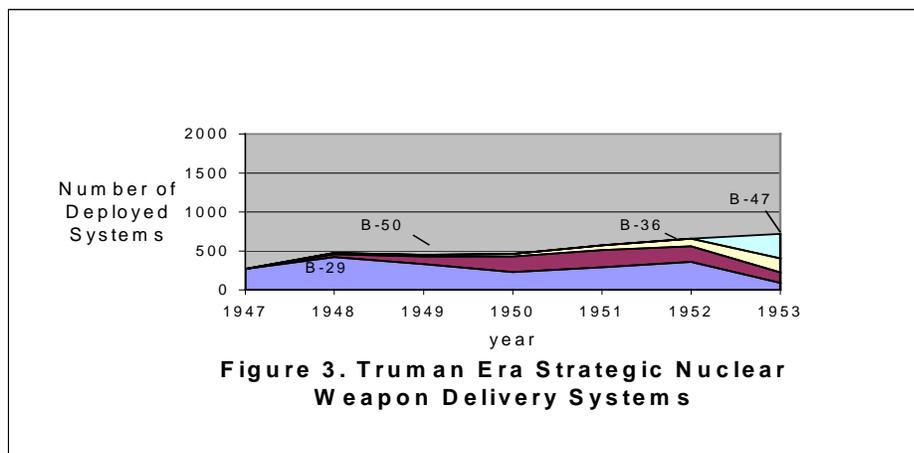
Soviet Leader—Joseph Stalin--1924-1953

World events—

- Ending of World War II--1945
- Beginning of Cold War, Churchill’s Iron Curtain Speech--1946
- Kennan’s “Long Telegram” on Containment of Soviet Union--1946
- Truman doctrine--1947
- Communist coup in Czechoslovakia--1948
- Berlin blockade and airlift--1948-1949
- Marshall Plan--1948
- Creation of NATO--1949
- Communist victory in China--1949
- Korean War started--1950

Nuclear weapon events—

- Trinity, Hiroshima, Nagasaki--1945
- Passage of atomic energy act of 1946 (establishment of AEC)
- Baruch Plan for International Control of Nuclear Energy--1946
- Creation of SAC--1946
- More efficient and more powerful atomic weapons--1948
- Soviet A-bomb, initiation of work on thermonuclear weapon--1949
- British A-bomb--1952
- U.S. H-bomb—1952

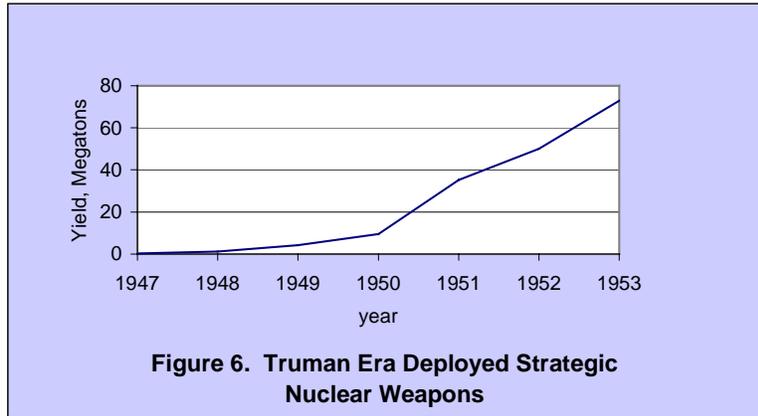




**Figure 4. B-36**



**Figure 5. B-47**



(Note: The total yield of the deployed strategic nuclear weapons is shown instead of the actual number of weapons. Although the number of weapons has been declassified for the years early in the nuclear era, the more recent data remain classified. The total yield, on the other hand, has been declassified.)

Nuclear weapons strategy—

- War-ending & War-fighting



**Figure 7. Fission Weapon Test**

## Discussion

As discussed in Chapter 1, one can argue that all nuclear deterrence policies involve “assured vulnerability” deterrence, but there are still distinctions among different policies. Since the 1940s when Brodie first wrote of nuclear strategy, there have been two basic beliefs that have existed with respect to nuclear weapons and the strategy of their deployment and employment. One belief holds that nuclear war cannot be won. The other holds that it can be. These views do not fall out from logical proofs. Rather, they arise from the core beliefs of the analysts. Bernard Brodie was more of the “it cannot be won” school, and William Borden, eventually staff member of the Joint Committee on Atomic Energy, was an early advocate of the second school. One can see these two world views in the arguments put forward in the past arguments over the MX or currently over national missile defense.

Generally the earliest plans for nuclear weapons were an extension of conventional strategic bombing, such as the bombing of Hiroshima and Nagasaki. Some of the strategists, though, saw possibilities beyond these extensions. Brodie thought that nuclear weapons existed so they, and the nuclear weapons of others, would not be used. The consequences of the weapons were too dire. Borden, on the other hand, envisioned a “war between the bases” with the cities being off-limits, and whoever destroyed the other’s stockpile, or means of delivery, would win the exchange.<sup>13</sup>

In addition to the academics, the military also struggled with the role of nuclear weapons. One issue the Joint Chiefs faced as World War II wound down was how new weapons created during the war—missiles, rockets, and the atomic bomb—would affect future wars. The Joint Staff Planners met with, among others, Dr. Vannevar Bush on August 22, 1945. Bush was Chairman of the Joint committee on New Weapons and Equipment of the Armed Services and had at the beginning of the war provided advice to FDR as to whether the Manhattan Project should be initiated.

Dr. Bush stated flatly that there were no countermeasures that would be effective against the atomic bomb once it had been launched. Until the development of the atomic bomb there had been a great premium on first strike capability. This was no longer true. If both adversaries had the atomic bomb, a strike by one could not preclude retaliation if the other side had a great reserve force well-protected underground. If the United States had a reserve stock of atomic bombs and delivery means, it could retaliate against a devastating attack so severely that the enemy would be as badly hurt. Destruction of a

nation's industrial potential would not be a determining factor in victory or defeat. The atomic war would be over so quickly that the crippling of a nation's industry would have no effect on the outcome.<sup>14</sup>

Eventually, the deployment of thermonuclear weapons would cause more debate concerning policy, and among the scientists and politicians, there was to be great debate even over the development of thermonuclear weapons. Furthermore, as shall be seen, the military services throughout the initial years of the nuclear era could not agree on a policy of what nuclear weapons were to be used for or of how they fit into the overall strategic posture. Careers were made and lost over the nuclear weapon debate.

The Truman administration grappled with the issues of nuclear policy. In the 1940s, there were few nuclear weapons, and the nuclear strategies suggested within the administration were just extensions of strategies employed during World War II. In fact, some initial war plans did not envision using atomic weapons at all. In February 1947, the Joint Planning Staff forwarded to the JCS an outline war plan against the Soviet Union. The plan assumed that the Soviet Union attacked Western Europe first and that the U.S. would not use the atomic bomb. The plan showed the Soviet Union would overrun Europe. One of the responses envisioned in winning the war was a strategic air offensive against vital Soviet industrial installations and war-related facilities in major cities.<sup>15</sup> The mission of SAC originally was to disrupt the ability of the Soviet Union to wage war.

Under Truman, original strategic planning was known as PINCHER. It was a general, war-fighting plan, begun in March 1946, and "limited to the preparation of strategic studies of particular areas of specific military problems." In the summer of 1947, the Joint War Plans Committee (later to become the Joint Strategic Plans Committee under the Joint Chiefs of Staff) was directed to prepare joint war plan BROILER which was to use as its basis Soviet aggression against the U.S. within three years. The planning assumed that the ground war in Europe and the Middle East would go badly. These areas would "be lost" initially to the Soviets, but with the British Isles, Okinawa, and either the Suez/Cairo region or Karachi as a base of operations, atomic bombing of the Soviet forces could hold the line there until ground forces could be built up. (A variation of BROILER, dubbed FROLIC, designated Karachi as the third base without choice.)

Admiral Louis Denfeld, the Chief of Naval Operations (CNO), objected to the plan, particularly the acceptance of the loss of Western Europe and the reliance on strategic bombing at long range. His view was that a better approach would be to join with the Western European nations in defending the Rhine valley.

Neither BROILER nor FROLIC was ever transmitted to the services as planning documents. But, in collaboration with the British and Canadians, they formed the basis for a joint emergency war plan, HALFMOON, which would later be renamed FLEETWOOD. HALFMOON was approved by the JCS on May 19, 1948 for planning purposes. As part of a general concept for resisting Soviet aggression, it called for a strategic air offensive, which would be mostly conventional. It envisioned, however, part of the strategic air response to be the use of atomic

weapons, although it was pointed out that authorization for such usage was not assured. Atomic weapons were to be used in a strategic air campaign against “vital elements of the Soviet war-making capacity.” An ambiguity in the plan was the role of naval carriers. (The ambiguity, in general, on the role of the Navy in a strategic nuclear campaign, would continue until the authorization of the Polaris program.) The plan assigned the mission for the carriers as “supplementing and supporting” the Air Force bombing campaigns.

The JCS approved a new Joint Emergency War Plan on January 28, 1949, designated TROJAN. It updated HALFMOON and included an addendum specifically discussing the atomic campaign. “A broad range of industrial facilities in 70 Soviet cities comprised the target list. Twenty of these cities, including Moscow and Leningrad, were considered first priority targets. To destroy all targets on the list, the Joint Chiefs of Staff estimated, would require a total of 133 atomic weapons....” The first strike would not occur until nine days after the initial Soviet attack and would be carried out from the bases identified in HALFMOON by the same weapon systems, the B-29 and B-50 bombers flying from overseas bases and the B-36 bomber flying from the U.S.<sup>16</sup> Truman initially considered rejecting these plans but then accepted them. He would have preferred that conventional weapons do the damage, but would not support sufficient budget to pay for the required conventional force.<sup>17</sup>

NSC-30 “United States Policy on Atomic Warfare” was endorsed by Truman on September 16, 1948. This policy document stated that the U.S. must be ready to “utilize promptly and effectively all appropriate means available, including atomic weapons, in the interest of national security and must therefore plan accordingly.” NSC-30 also stated “The decision as to the employment of atomic weapons in the event of war is to be made by the Chief Executive.”<sup>18</sup>

Shortly thereafter, Secretary of Defense James Forrestal requested that the JCS examine the impact on the Soviet Union if all the atomic bombs in the U.S. inventory were delivered. He was skeptical about relying heavily on an atomic bombing campaign as a centerpiece for the defense of the U.S. He did not believe that air power alone could win a war, and hence, he was reluctant to invest much of his budget in bombers unless he had some confidence they could do what their promoters said they could.<sup>19</sup> The JCS established a committee with responsibility for assessing the capabilities for delivering bombs to the target. The committee was chaired by Lieutenant General H. R. Harmon of the Air Force.

The Harmon Committee submitted its report, “Evaluation of the Effects of Atomic Bombing” to the Joint Chiefs of Staff on 12 May 1949. The report concluded that “the planned atomic attack on seventy Soviet cities would not, per se, bring about capitulation, destroy the roots of Communism, or critically weaken the power of the Soviet leadership to dominate the people.” The report estimated that the expected Soviet casualties would be 2.7 million deaths and a reduction in industry of 30-40 percent, but the attack would not halt a Soviet invasion of Western Europe, the Middle East, or the Far East. (These losses would be comparable to what the Soviet Union lost in the first six months of World War II.) An atomic attack by itself would not defeat the Soviet Union. The report went on to argue though that this did not mean that we should not have the capability to attack the Soviet Union with an all-out atomic air assault. “From the standpoint of our national security, the advantages of its [the atomic bomb’s] early

use would be transcending. Every reasonable effort should be devoted to providing the means to be prepared for prompt and effective delivery of the maximum numbers of atomic bombs at an appropriate target system.”<sup>20</sup>

For the Harmon report, Gen. Vandenburg, Chief of the Air Force, had examined the delivery capabilities of strategic systems, which were then the bombers. He concluded it was good. ADM Denfeld, Chief of Naval Operations, disagreed because of the lack of intelligence data about Soviet military capabilities and the targets themselves. This was symptomatic of the divergence of views about overall strategy between the Air Force with the strategic bombers and the other services, who were losing budget battles and who also did not put as much faith in strategic bombing.

The issue of delivery capability adequacy was referred to the Joint Intelligence Committee which upheld Denfeld’s view and concluded that the Harmon report had oversimplified the analysis based on what was known versus what was conjectured. (Note: While this debate was going on and before the Harmon report was officially submitted to the Secretary of Defense, Forrestal committed suicide. Johnson, replacing him, did not know of verbal promises Forrestal had, or had not, made concerning budget priorities, etc. This “people aspect” of policy contributed to acrimony among the Chiefs of Staff.) The differences of opinion were to be reviewed once again by the newly formed Weapon Systems Evaluation Group, but before that could occur, the strategy argument went public in the form of hearings before the Armed Services Committee of the House of Representatives. Top Naval officers were angry in that they thought that Forrestal had promised to request funding for a “super carrier”—the *United States*--which was cancelled due to (from their perspective) changed budget priorities that favored the Air Force. At the same time, a civilian working for the Under Secretary of the Navy had released a critique of the B-36 bomber (calling it a “billion dollar blunder”<sup>21</sup>). At the same time, to meet budget requirements, the Air Force was canceling some tactical programs and other efforts on other bombers in order that production and deployment of the B-36 would not be delayed. The obvious divergence of views as to the worth of the B-36 was the impetus for the congressional hearings, which began on August 9, 1949 and continued into October. (The Naval officer responsible for coordinating Naval testimony was Capt. Arleigh Burke, who would later become CNO during the time of Polaris entering into service, the organizing of the Joint Strategic Target Planning Staff, JSTPS, and the creating of the first Single Integrated Operational Plan, SIOP.)

The timing of the hearings is important. The first Soviet atomic test occurred on August 29, 1949, which was a shock—only 14 months before, the CIA had estimated that the Soviet Union most probably would not have the bomb before mid-1953<sup>22</sup> – although its occurrence was not widely known until Truman announced it on September 23, 1949. During October, Senator Brien McMahon of the Congressional Joint Committee on Atomic Energy, on whose staff Borden worked, urged the Atomic Energy Commission (AEC) to develop the hydrogen bomb as the Soviet Union was probably doing so.<sup>23</sup> Throughout the fall and into the winter, the issue of hydrogen bomb research and development was examined by AEC committees and laboratory personnel. Late 1949 was also the time when Chiang Kai-shek and his followers fled mainland China for Taiwan. Issues of national security occupied center stage during the fall of 1949.

Finally, the Cold War was affecting the “domestic tranquility” of the United States. Alger Hiss would be convicted of perjury in January 1950, after Congressional hearings into the workings of the Communist Party within the U.S., and Senator Joseph McCarthy would first accuse the State Department of having several hundred Communist Party members as employees in a speech on February 9, 1950.

In the hearings of the House Armed Services Committee, the Naval challenge to the strategic concept was two-fold. The first challenge was that the witnesses did not believe that the concept of operations could be conducted with the forces available. Second, even if the operations could be conducted, “the results would be antithetical to stated war aims of the United States.”<sup>24</sup> The first challenge of the Navy concentrated only on the B-36, ignoring the medium bombers (B-29, B-50, and B-47 on the drawing board). They did not believe that the B-36 could get through Soviet defenses and that if it did, could accurately bomb the targets. Hence, in their view, saturation bombing would be required.

This saturation bombing, the Navy officers maintained, did not support the policies, objectives, and commitments of the United States....[S]ince war was an instrument of national policy, the method of waging it should be adjusted to policy objectives. The greatest defect of strategic bombing as currently planned was that it was not related to policy. It would not contribute to the defense of Western Europe. It would result in the wholesale extermination of civilians, an outcome that was contrary to fundamental American ideals and would therefore be opposed by the American people on moral grounds. And it would wreak vast damage on the physical structure of civilization, thereby placing in jeopardy the attainment of a stable postwar world economy, which was essential to the achievement of the stated American aim of a lasting peace and prosperity for all the peoples of the world.<sup>25</sup>

The real differences between the Air Force and Navy that came out through the hearings were that the former believed in strategic bombing while the latter believed the most effective use of air forces was in tactical support. ADM Denfeld had a dilemma. His service had one opinion, but as a member of the JCS he had previously endorsed the other. His testimony appeared to try to support the Naval opinion while at the same time supporting the JCS actions.

General of the Army Bradley, as chairman of the Joint Chiefs of Staff (JCS), and General Vandenburg had the task of rebuttal in which they attempted to refute the specific B-36 accusations and the general strategy concerns. They supported strategic bombing with Bradley going so far as to say that in WWII the air offensive against Germany had a “decisive effect” in its defeat. Some of Denfeld’s comments went to the heart of the National Security Act of 1947 as to what power lay within the services and what power had shifted to the JCS. He disagreed with the interpretations made by the rest of the JCS, the SecDef, the President, and many members of Congress and was relieved of his duties on October 27, 1949.<sup>26</sup>

A new plan, OFFTACKLE, was approved by the JCS on December 8, 1949. It was the first strategic plan to be based on political guidance from the National Security Council (NSC). The guidance came from NSC 20/4 which had been approved by the NSC and the President in

November 1948. (Note: NSC 30 had been approved in September 1948.) The guidance specified that the U.S. would, if at all possible, not initiate war. “We should endeavor to achieve our general objectives by methods short of war,” was written in NSC 20/4. This then provided the authority for the assumption that had been incorporated into all previous strategic plans, that the U.S. would be responding to Soviet aggression. A change from TROJAN to OFFTACKLE was that in the former, the strategic bombing campaign was “directed against” vital elements of the Soviet war-making capacity, whereas in the latter the campaign was to “destroy” them. Also, an objective was added to the campaign. That objective was the “retardation” of Soviet advance in Western Europe.<sup>27</sup>

On February 8, 1950, after the Congressional hearings had concluded and OFFTACKLE had been approved, the Weapons Systems Evaluation Group (WSEG) report was submitted to the JCS. It used two levels of Soviet air defense capabilities. Even with the higher one, the study found that the results expected by OFFTACKLE could be achieved if some deficiencies in medium bomber operations, e.g., shortages of European bases and the need to increase defenses for those already available, could be eliminated. “The WSEG report, although it shed considerable light on the feasibility of the strategic air offensive, did not provide a final answer to the question posed by Secretary Forrestal in October 1948 regarding the wisdom of giving primary emphasis to atomic bombing. The question had, however, been overtaken by budget decisions that, by cutting conventional forces to the bone, effectively dictated a nuclear strategy in the event of war.”<sup>28</sup>

In parallel with the Congressional hearings and JCS examination of strategic plans, two other issues were being studied, nuclear material/weapon production and thermonuclear weapon R&D. Soon after the Harmon report had been submitted, the JCS requested a major expansion of nuclear weapons production. In July, Truman had formed a “Special Committee” of the National Security Council to examine the plans for producing fissile material and atomic weapons. The committee members were Secretary of Defense Johnson, Secretary of State Acheson, and AEC Chairman Lilienthal. Based on their report, Truman ordered increased fissile material production on October 19, 1949.

Whether the nation should proceed with thermonuclear weapon research and development was much more contentious. Since before the development of the atomic weapon at Los Alamos in 1945, scientists had considered the possibility of a thermonuclear weapon, and the matter had been debated within the scientific community. Supporters included Ernest Lawrence and Luis Alvarez, both of the Berkeley Radiation Lab, and Edward Teller, at that time consulting to Los Alamos. In addition, Sen. McMahon also urged the development. Now, on October 5, 1949, just five weeks after the Soviet atomic bomb test and less than two weeks after Truman had announced it, Lewis Strauss, commissioner of the AEC, urged his fellow AEC members to push ahead with development of a fusion weapon. First, though, he wanted to get the opinion of the General Advisory Committee (GAC) of the AEC as to how best to “proceed most expeditiously.”<sup>29</sup> Members of the GAC included Robert Oppenheimer, James B. Conant, Enrico Fermi, and Isidor Rabi.

The matter was considered by the GAC over three intense days at the end of October. The conclusion was that on both technical and moral grounds the committee could not approve the effort. There were many scientific and engineering hurdles to overcome. Even if they could be overcome, however, the committee members had moral questions about the weapon. “There was no theoretical limit to its size. Clearly such a weapon could not be restricted to use against strictly military targets and would make possible a policy of exterminating civil populations. Nor was it needed for national security. By the time the Soviets attained an atomic attack capability, the U.S. stockpile of fission weapons would be sufficient to permit an adequate reprisal.”<sup>30</sup> A majority of members, in fact—Conant and Oppenheimer being the most prominent—felt that the U.S. should unilaterally announce a complete renunciation of fusion weapons. They concluded, “We believe a super bomb should never be produced. Mankind would be far better off not to have a demonstration of the feasibility of such a weapon until the present climate of world opinion changes.” In an appended statement to the report from the GAC to Lilienthal, Fermi and Rabi went further to argue that such a development would be unethical and that the U.S. should negotiate with the Soviets and other nations so that all would pledge such renunciation.<sup>31</sup> With this report in hand, the AEC itself was unable to reach agreement and gave two different reports to Truman on November 9. Three of the five commissioners, including Lilienthal, were against development of the hydrogen bomb, and two were in favor.

On November 10, the JCS requested that the Joint Strategic Survey Committee make a recommendation. On November 17, a report by members of the Military Liaison Committee, the joint AEC and DoD committee that directed nuclear weapon development, was submitted in its stead. Taking this report under advisement, on November 23, the JCS issued a report urging development of the weapon, if for no other reason than to explore its characteristics to enable the U.S. to prepare to fight against it. In the mean time, Truman reconvened his Special Committee of the NSC (Johnson, Acheson, and Lilienthal) to consider the issue. Johnson and Lilienthal disagreed about the dimensions of the issue. Johnson believed the issue was purely technical; Lilienthal opined that it also had a moral component.<sup>32</sup> They disagreed so much that the committee did not meet again; it did its work through correspondence. In early December, the GAC once again went on record as opposing the development with several of its members explaining their opposition in detailed letters. The opposition was technical (e.g., Fermi arguing that fission weapons were nearly as good from a cost/benefit standpoint—amount of material used, types of targets, etc.), moral, and strategic (if the U.S. would go ahead, others might feel compelled to follow suit).

The JCS was asked for their opinion by Dr. Robert LeBaron, Deputy to the Secretary of Defense for Atomic Energy Matters. The JCS, in a reply on January 13, 1950, stated that a “crash program” was not warranted due to the uncertainty of the technology but that research of the technology should proceed as well as examinations of delivery vehicles. The ultimate decision to proceed to weapon design and development should not be made until weapon and vehicle feasibility could be determined. They made a number of arguments as to how the weapon could increase the security capabilities of the U.S. and added that diplomatic concerns were outside their purview. They did not consider a thermonuclear weapon to be inherently immoral but

commented that to maintain a free way of life, people would look to leadership to the U.S. and that this weapon might be necessary for that way of life.

The Joint Congressional Committee on Atomic Energy was briefed by General of the Army Bradley on January 20, 1950. A number of prominent Americans, including Bernard Baruch, came out in favor of weapon development. Acheson continued to mediate between Johnson and Lilienthal, and a compromise conclusion was reached for the Special Committee. Fundamental thermonuclear and weapon feasibility research should proceed, but an actual weaponizing decision should await the results of the research as well as a comprehensive review of military and foreign policies, particularly in light of the new Soviet nuclear capability.

During further discussion on January 31, 1950, Johnson proposed deleting reference to an additional weaponizing decision. Understanding the building public pressure to proceed, Lilienthal relented, although later in the day he was allowed to make his case directly to Truman when the Special Committee met with the President. Truman opined that the decision could not be delayed because of political pressures, and he announced the decision to proceed with thermonuclear weapon work the next day.<sup>33</sup>

The Director of Policy Planning at the State Department, George Kennan, who had earlier devised the policy of containment vis-à-vis the Soviet Union, had recently left that position and wrote internal memos against proceeding with thermonuclear weapon work (see Appendix B for a discussion of Kennan's departure from the Policy Planning Staff). In addition, the opposition of Oppenheimer to the H-bomb work would be a significant factor in the hearings that resulted in him losing his security clearance.\*

Truman also acted on the other recommendation of the Special Committee. On the same day he made the decision to proceed with the thermonuclear bomb, Truman directed the Secretaries of Defense and State to reexamine national security policy "in the light of the probable fission bomb capability and possible thermonuclear bomb capability of the Soviet Union." The study was headed by Paul Nitze, who had been prominent in the strategic bombing survey following World War II and was acting director of the Policy Planning Staff in the State Department after Kennan's departure. The resulting report, NSC-68, was mostly written by Nitze, and on April 7, 1950, it was presented to Truman. Truman faced a decision: rearmament or retrenchment. NSC-68 was a definite call for the former.

NSC-68 was an attempt to account for Oppenheimer's observation that no one had yet devised a foreign policy in a world armed with hydrogen bombs, and it presented an alarming picture. Nitze believed that, because of their Marxist philosophy, the Soviet leadership was likely to initiate wars, even with little or no warning. The document put forth four alternative policies for the U.S.: continue the status quo, return to isolationism, preventive war by the U.S. against the

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\* For a detailed discussion of the decision to proceed with the thermonuclear bomb and of the Oppenheimer clearance proceedings, see *The Advisors: Oppenheimer, Teller, and the Superbomb*, by Herbert York, Stanford University Press, 1976, or *Dark Sun: The Making of the Hydrogen Bomb*, by Richard Rhodes, Simon and Schuster, 1995.

Soviet Union, and a rapid build-up of the “<political, economic, and military strength of the free world.”” Nitze argued that the first three were unworkable and/or unacceptable. He wanted the U.S. to maintain strategic superiority over the Soviet Union. This would not be easy because

the Soviet nuclear threat is more immediate than had previously been estimated. In particular, the United States now faces the contingency that within the next four or five years the Soviet Union will possess the military capability of delivering a surprise atomic attack of such weight that the United States must have substantially increased general air, ground, and sea strength, atomic capabilities, and air and civilian defenses to deter war and to provide reasonable assurance, in the event of war, that it could survive the initial blow and go on to the eventual attainment of its objectives.<sup>34</sup>

Our nuclear weapons, and theirs, were chess pieces: “<The atomic queens may never be brought into play; they may never actually take one of the opponent’s pieces. But the position of the atomic queens may still have a decisive bearing on which side can safely advance a limited-war bishop or even a cold-war pawn.”” In addition, Nitze believed “the enemy’s perception of American strength and will was as important as their reality in the great power game.” For this reason, he rejected the U.S. declaring a “no first use” policy.<sup>35</sup> Furthermore, administration officials noted that maintaining a stockpile was more frugal than maintaining a large, conventional military. The Army contemplated using atomic munitions tactically, a move that Oppenheimer strongly backed. Even with the dire warnings of NSC-68, it is doubtful that military expansion would have occurred, due to budgetary priorities, without the invasion of South Korea (June 25, 1950).<sup>36</sup>

Later NSC documents in the early 1950s (e.g., NSC 114/2, NSC 135/1) would find that the conclusions of NSC-68 were still valid and that the risk of the U.S. being attacked was increasing. But, at the close of the Truman administration, NSC 141 was issued. It originally called for an even greater emphasis on nuclear weapons with appropriate budget reallocations and was written by a Steering Committee whose members were Frank Nash from Defense, Nitze from State, and Richard Bissell from the Mutual Security Agency,\* and its draft report was submitted on January 7, 1953. The JCS disagreed with it in several places. For the purposes of this primer, the foremost criticism was that “[the JCS] thought the Soviet atomic threat was exaggerated.” After revision, it was submitted to Truman on January 19, 1953, his last full day in office. The report argued “...that reliance upon the threat of nuclear retaliation as a deterrent to local aggression must grow increasingly ineffective as the Soviet atomic stockpile increased.”<sup>37</sup>

In August 1950, the Joint Chiefs of Staff formally designated three target categories in the Soviet Union. The highest priority was given to “the destruction of known targets affecting the Soviet capability to deliver atomic bombs.” The second priority was retardation targets, and the third was liquid fuel, electric power, and atomic energy industries, which were the more traditional target types that the Air Force had attacked in World War II. These categories were

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\* The Mutual Security Agency was an outgrowth of the Economic Cooperation Agency of the Marshall Plan but also included foreign military assistance in addition to economic assistance (Mutual Security Act of 1951).

given the code names BRAVO, ROMEO, and DELTA, respectively. With some modifications, these categories defined U.S. targeting priorities until the creation of the first SIOP at the end of the Eisenhower administration in late 1960, although the categories were phased into the war plans due to initial limitations of stockpile and intelligence (both targets and navigation information).

## 2.2 The Eisenhower Era—“Massive Retaliation” 1953-1961

President Dwight Eisenhower 1953-1961

SecDef--Charles Wilson 1953-1957, Neil McElroy 1957-1959, Thomas Gates 1959-1961

SecState--John Foster Dulles 1953-1959, Christian Herter 1959-1961

Soviet Leader—Joseph Stalin 1953, Georgy Malenkov 1953-1955, Nikolay Bulganin 1955-1958, Nikita Khrushchev 1958-1964

World events—

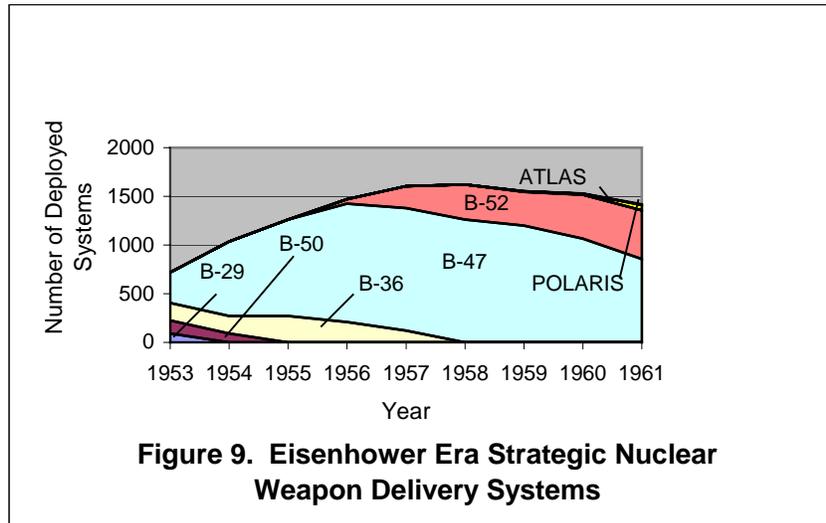
- Korean War armistice--1953
- East Berlin uprising--1953
- Warsaw Pact formed--1955
- Polish uprising--1956
- Hungarian revolution--1956
- Suez Canal crisis--1956
- Launch of Sputnik--1957
- DEW Line--1957
- Airborne alert “exercises”--1958 (Official airborne alert begins 1961 through 1966)
- Mainland China shells Quemoy and Matsu--1958
- Cuban revolution--1959
- U2 incident--1960
- BMEWS operational in stages--1960-1963

Nuclear weapon events—

- Rosenbergs sentenced to death--1953
- Oppenheimer loses clearance--1953
- Soviet H-bomb--1953
- U.S.N. Nautilus launched--1954
- “Open Skies” Policy Proposed--1955
- Research into “wooden bomb”--1955
- British H-bomb--1957
- Voluntary nuclear test moratorium--1958
- French A-bomb--1960
- Creation of JSTPS--1960
- First SIOP--1960



**Figure 8. Fusion Weapon Test**



**Figure 10. Thor**



**Figure 11. Jupiter**

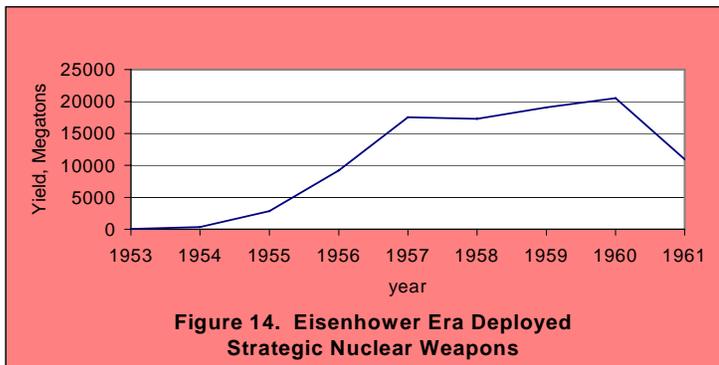
(Note: Both Thor and Jupiter were Intermediate Range Ballistic Missiles—see the text.)



**Figure 12. Atlas**



**Figure 13. Polaris**



**Figure 14. Eisenhower Era Deployed Strategic Nuclear Weapons**

Nuclear weapons strategy—

- massive retaliation (although Dulles did not specifically mention nuclear weapons in reference to massive retaliation in his speech outlining the strategy)

#### Discussion

Eisenhower continued Truman’s containment policy toward the Soviet Union, but he accelerated the trend started under Truman toward using nuclear weapons as a “lower-cost substitute for conventional forces.” For example, he had campaigned against the Democrats’ “profligacy” toward defense and had promised to “reexamine the balance between security and solvency.”<sup>38</sup> This was more than rhetoric. A theme that occurs throughout his administration, documented in the minutes of his National Security Council, is the concern of military costs. The minutes of the 165<sup>th</sup> meeting of the NSC make it clear that NSC 162, “Review of Basic National Security Policy,” had been drafted in two versions. One version put military security

first. The other version saw a threat in addition to the Soviet Union and that additional threat was the weakening of the U.S. way of life because of all the expenditures for the military.<sup>39</sup>

By and large, the nuclear strategy of the Eisenhower administration was direct and not nuanced. Secretary of State John Foster Dulles articulated the strategy in his speech of January 1954 “threatening to retaliate ‘massively’ against Soviet aggression”<sup>40</sup> even if the aggression was solely conventional. Nor was it only the Secretary of State who felt this way. In a meeting of the NSC in March 1954, the draft of NSC 5410 was being discussed. This document would be an update to NSC 162/2, the objectives of the U.S. in a war with the Soviet Union. The document even included a discussion of the type of government to install in the Soviet Union after the U.S. won the war. Eisenhower disagreed with all the details going into the policy document, because perhaps the forest was being missed as people counted the trees:

[Eisenhower] said he was speaking very frankly to the Council in expressing his absolute conviction that in view of the development of the new weapons of mass destruction, with the terrible significance which these involved, everything in any future war with the Soviet bloc would have to be subordinated to winning that war. This was the one thing which must constantly be borne in mind, and there was little else with respect to war objectives that needed to worry anyone very much. The President said that ten years ago he might very well have subscribed to the limitations and restrictions which the Chief of Staff of the Army and the Chief of Naval Operations now recommended with regard to the exploitation of our great atomic capabilities [they had wanted more detail in how to achieve victory]. But in the present situation it was impossible and impractical even to consider these suggestions. In illustration of his point, the President turned to paragraph 1 of the draft report, which read: “To achieve a victory which will ensure the survival of the United States as a free nation and the continuation of its free institutions in the post-war period.” This, said the President, he would change by putting a period after “victory” and deleting the rest of the paragraph, if not the rest of the paper. We can’t tell what we will do after we achieve a victory in what will be total and not in any sense limited warfare...

The President concluded by admitting that his point of view might seem brutal, but in view of the fact that we would never enter the war except in retaliation against a heavy Soviet atomic attack, he simply could not conceive of any other course of action than the course of action which would hit the Russians where and how it would hurt most.<sup>41</sup>

A key word in the strategy was “retaliate.” Throughout the Eisenhower presidency, policy papers stress that the U.S. would not start a war, that the U.S. would respond to aggression and not initiate it. This is made clear in paragraph 35 of NSC 5501:

The United States and its allies must reject the concept of preventive war or acts intended to provoke war. Hence, the United States should attempt to make clear, by word or conduct, that it is not our intention to provoke war. At the same time the United States and its major allies must make clear their determination to oppose aggression

despite risk of general war, and the United States must make clear its determination to prevail if general war eventuates.<sup>42</sup>

These same words appear in NSC 5602, Section B, Paragraph 11,<sup>43</sup> and, with only slight changes, they are in the Basic National Security Policy (NSC 5707/8).<sup>44</sup>

At the same time, both the military and political staffs had recognized that in a general nuclear war, staff work would be different than it had been in World War II. For example, JCS war planning assumed that a war would start with a Soviet nuclear attack. The Air Force stressed that because of the increased power of nuclear arms the initial phase of a future war with the Soviets should be the focus of all planning. There would be little likelihood of having a WWII-like engagement wherein there would be time to absorb setbacks, build up forces, and then succeed. A plan that required successful mobilization to succeed was no longer a realistic plan.<sup>45</sup> Eisenhower went further. Even if we did mobilize, the troops would be used differently. He made it clear that during and after an atomic war, historical military planning goes by the wayside. If we were attacked and fifteen of our cities were demolished, we would not be sending more Army divisions overseas to fight. We would need them at home to establish order and rebuild.<sup>46</sup>

In addition to making retaliation explicit, NSC 5602 for the first time specifically stated U.S. policy that nuclear weapons could be used in situations short of general war when so authorized by the president (Section B, Paragraph 11). Eisenhower approved an amended NSC 5602/1 on March 15, 1956. The only amendment affecting this was the addition that the presidential approval could be given in advance<sup>47</sup> and some of these situations could be the use of nuclear weapons as defensive weapons.<sup>48</sup> As with the retaliation statement discussed above, this policy statement, once adopted, continued to appear throughout the Eisenhower administration. There were a few word changes. For example, in NSC 5707, the policy states that nuclear weapons are to be considered as “conventional weapons from a military point of view.” In total, paragraph 11 reads “It is the policy of the United States to place main, but not sole, reliance on nuclear weapons; to integrate nuclear weapons with other weapons in the arsenal of the United States; to consider them as conventional weapons from a military point of view; and to use them when required to achieve national objectives. Advance authorization for their use is as determined by the President.”<sup>49</sup>

Furthermore, the policy continued into NSC 5906/1 with some wording changes:

It is the policy of the United States to place main, but not sole, reliance on nuclear weapons; to integrate nuclear weapons with other weapons in the Armed Forces of the United States; and to use them when required to meet the nation’s war objectives. Planning should contemplate situations short of general war where the use of nuclear weapons would manifestly not be militarily necessary nor appropriate to the accomplishment of national objectives, particularly in those areas where main Communist power will not be brought to bear. Designated commanders will be prepared to use nuclear weapons when required in defense of the command. Advance authorization for the use of nuclear weapons is as determined by the President.

A footnote states that Eisenhower's understanding of the wording change to this paragraph was that it was not a change in policy but rather a clarification in policy.<sup>50</sup>

In the few years since the end of World War II, the security of the nation had come to rely on nuclear weapons, for general war, for limited war, for deterrence, for retaliation, and for victory.

In addition however, several reports during the Eisenhower years gave pause to that reliance. Coming from nuclear strategists and from special administration panels, the reports identified vulnerabilities in the current balance of nuclear forces and trends of decreasing nuclear dominance in the future. In addition, new research was leading to new technologies for both the U.S. and the Soviet Union, technologies that could fundamentally alter nuclear warfare.

During the 1950s, strategists began to study nuclear weapon strategy more broadly and systematically using the methods of operations research and political economy. Some of the early notable strategists worked for RAND Corporation. An influential study was done by Albert Wohlstetter of RAND on the vulnerability of SAC, specifically, the vulnerability of the forward European bases. A way of defeating the nuclear deterrent of the U.S. was the destruction of the bases it needed at that time in Europe, and these targets could be inviting to the Soviet Union either preemptively or during time of crisis. More generally, his work claimed that a defending force that is vulnerable to attack may provoke rather than deter aggression.<sup>51</sup> He was not the only person who worried about those bases. Paul Nitze had warned during the closing days of the Truman administration that SAC bases were sufficiently vulnerable that the bombers might not even be able to leave the ground if their bases were attacked.<sup>52</sup> In addition, in September of 1953, John Foster Dulles identified the foreign SAC bases as "lightning rods rather than umbrellas" for the host countries as the Soviet nuclear forces increased.<sup>53</sup> And, as discussed earlier, the capabilities of the intercontinental B-36 bomber were not universally accepted.

Eisenhower commissioned the Science Advisory Committee of the Office of Defense Mobilization to create a Technological Capabilities Panel to examine the U.S. vulnerabilities to surprise attack. Its results have become known as the Killian Report, after James Killian who headed the panel and would later serve as Eisenhower's scientific advisor. The report was given to Eisenhower in February 1955. The panel identified four periods:

Period I, the present, in which "Because of our air-atomic power we have an offensive advantage but are vulnerable to surprise attack."

Period II—starting 1956/57—ending 1958/60, in which "We will have a very great offensive advantage relative to USSR and will be less vulnerable than previously to surprise attack."

Period III—This is a period of transition from Period II to Period IV.

Period IV—“Indefinite in length; possibly beginning within a decade. An attack by either side would result in mutual destruction.”<sup>54</sup>

Panel recommendations included making SAC bases less vulnerable, accelerating research and development of IRBMs and ICBMs, and increasing intelligence gathering of the Soviet Union (which would lead to the U-2 overflights). Even with these, however, the Killian report believed that the U.S. and the Soviet Union were headed to a stalemate in which both sides would possess the means to destroy the other.

Research into rocketry and missiles had begun years before, including Goddard in the New Mexico desert before World War II and the German scientists in Huntsville, Alabama in the immediate postwar years. Work on an ICBM, which eventually became “Atlas,” had begun in 1948, had been suspended, and had then resumed in 1951. By and large, it was a low level-of-effort undertaking. Over the next four years, the development of new technology, the changing world situation, and studies would change that. The thermonuclear bomb was developed, and smaller nuclear packages were conceived. The Soviets also detonated a thermonuclear weapon. Lastly, the Killian report recommended increasing the ICBM effort as well as rapid development of an IRBM. All three services studied the IRBM and wanted to have it in their primary mission. In 1956, the Navy conceived of a smaller, solid-fuel missile which, when combined with a smaller thermonuclear warhead promised by the AEC labs, could be fired from submarines. Thus, the concept of “Polaris” was born. “Thor,” a smaller version of Atlas, was the Air Force IRBM, and “Jupiter” was the Army IRBM. Originally, the Air Force was to develop one IRBM, and the Navy and Army were to jointly develop another IRBM with the Navy being responsible for the ship-launched version. While researching it, Naval personnel instead conceived what became Polaris. In 1956, the Office of the SecDef decided that Army missiles should be limited to a 200 mile range. At the same time, it was decided to go ahead with Jupiter and Thor, which both entered into SAC service in 1958, and with Polaris for the Navy.<sup>55</sup>

NSC 5501 projected that the Soviets were not expected to have ICBMs until 1963, 1960 at the earliest. When the Soviets achieved this, U.S. nuclear superiority would end. The U.S. was expected to have a similar time-table, and hence, mutual deterrence would ensue. “Thus a deliberate resort to war by the Soviet Union was held unlikely in either the current situation of U.S. nuclear superiority or the future one of mutual deterrence.”<sup>56</sup> The advent of nuclear ICBMs, even in a situation of deterrence, led Eisenhower to request another panel be established by the Science Advisory Committee of the Office of Defense Mobilization to examine possible civil defense measures. (At that time, there had still been no successful launch of an ICBM.) The panel was officially called the Security Resources Panel and headed by H. Rowen Gaither, Chairman of the Board for RAND. Its report is known as the Gaither Report. The ICBM race affected foreign relations as well. If the Soviets would be first with an ICBM, our relations with our allies would be adversely affected and they might question our commitment to them.<sup>57</sup>

Then, on October 4, 1957, Sputnik was launched using an ICBM (its U.S. designation was SS-6).

Exactly one month later, on November 4, 1957, the Gaither Report was briefed to Eisenhower. The panel had expanded its charter and titled its report “Deterrence and Survival in the Nuclear Age.” The report, mostly written by Nitze, a panel member, cited danger looming from Soviet ICBMs which they opined would be operational in 1959. The report predicted that the Soviet threat could become critical in 1959 or 1960, and that only by having a secure retaliatory force could the American people be protected. Eisenhower believed that the earlier Killian report was more correct than the Gaither report, that the U.S. was facing a gradual loss of strategic advantage and not a precipitous one. The Sputnik launch, however, with its implications for potential Soviet missile superiority would affect the last few years of his administration and the 1960 presidential race with charges of “missile gaps.” By the beginning of 1958, it was recognized that, once Atlas had been fully developed and tested, the limiting factor for the rate of ICBM deployment for the U.S. would not be missile production, but rather missile base construction. It was not high-technology-limited but limited by how fast could concrete be poured.<sup>58</sup> The first Atlas base was activated in April 1958, and the first Titan base, in February 1960. The national intelligence estimate NIE-11-8-59 supported the missile gap in that it estimated that the Soviets would deploy ICBMs much faster than the U.S.<sup>59</sup>

The Gaither report had called for decreasing the vulnerability of the strategic systems. In order to detect approaching bombers, the Distant Early Warning (DEW) Line was installed. For the detection of incoming missiles, the Ballistic Missile Early Warning System (BMEWS) was developed and became operational in stages from 1960-1963. In addition, steps were instituted to keep one-third of the bomber force on 15 minute ground alert at all times. Plans for continuous airborne alert, involving 60-70 bombers existed, but such continuous alert did not start until 1961. Very frequent, airborne alert “exercises” involving as many as 14 bombers began in September 1958.<sup>60</sup>

The nuclear strategy of Eisenhower was massive retaliation. The “massive” part of the strategy, however, did not go unchallenged. In the era of multi-megaton weapons and developing ICBMs, the debate started by Brodie and Borden continued. In April 1958, Robert Cutler, national security advisor to Eisenhower, wrote a long memo to Secretary of State Dulles challenging the policy of *massive* retaliation.\* He argued that the Soviets would be deterred if the U.S. had one-tenth the weapons it then had if instead of targeting military forces, the U.S. targeted their largest population centers. He further argued that the size of the U.S. stockpile was based on targets appropriate for a preventive war, not a retaliatory strike. In addition, because nuclear retaliation was inappropriate for lesser wars (elsewhere in the memo, he called those countries exchanging nuclear strikes the “suicide club”), Cutler called for increased spending on conventional arms. Furthermore, he deemed it important for stability that the U.S. nuclear systems become as invulnerable as possible. Finally, he advocated having other nuclear strike options. “When advanced retaliatory systems are introduced, characterized by effective invulnerability, the strategy of automatic massive retaliation in response to all-out attack can profitably be replaced by a cat-and-mouse strategy of graduated retaliation-coercion.”<sup>61</sup>

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\* By August, Cutler would resign due to “exhaustion”—see <http://www.whitehouse.gov/WH/EOP/NSC/html/NSChistory.html#Eisenhower>, the White House web page on the history of the National Security Council.

Although he did not use the terms, in other decades some of his ideas have been called “minimal deterrence” and “limited war options.”

Cutler was not the only one calling the strategy into question. In 1955, Eisenhower had not reappointed General Ridgway and Admiral Carney to the JCS. “The former considered massive retaliation an inadequate strategy...” Maxwell Taylor was appointed, but he too “...proved [to be] a severe critic of massive retaliation.”<sup>62</sup> The new CNO was Arleigh Burke, who had been heavily involved with the Congressional hearings in the fall of 1949. One year after his appointment, the Navy began exploring the Polaris missile.

The Air Force and Navy had had separate targeting plans. With the nuclear weapons being delivered to Soviet targets by Air Force bombers and with the limited range of naval aircraft, the separate plans did not interfere with each other. With the advent of Polaris, however, that would change; they would be deployed beginning in 1960. The Net Assessment Committee of the NCS, directed by Lt. Gen. Thomas Hickey prepared a target list for the NSC in 1958 which would form the basis for a “national targeting policy.” The “Hickey Committee” issued its report in February 1960 which was reviewed by the JCS. The final conclusion of the JCS was that it should be used for the basis of target planning. (Another observation made by Gen. Twining, Chairman of the JCS, was that “A retaliatory force structure based on the destruction of an urban target system would not provide an adequate military posture.”)<sup>63</sup>

It was becoming clear that a more meshed structure was needed for the commands responsible for nuclear deterrence. Some were arguing that all strategic commands should be unified. In the summer of 1960, Eisenhower held a series of meetings with the civilian and military defense leaders to discuss the possibilities. In one meeting, Secretary of Defense Gates gave his opinion that strategic targets and strategic commands were related, but he did not believe that SAC, Polaris, and any other strategic commands should be unified because they were just too different. Furthermore, he stated that there should be a single, integrated target planning group and that the Hickey report should form the basis for that plan. Eisenhower agreed that a single strategic command was not feasible at that time, but he said that a single, integrated operational plan was absolutely necessary, probably from the JCS. Gates said that only SAC had the resources to do it, to which Eisenhower replied that they would need to do so as an agency of the JCS. Gates agreed and added that the SAC staff would need to be augmented with personnel from the other services.<sup>64</sup>

The new organization was further discussed in a meeting in August. Present at that meeting were only Gates, Deputy Secretary of Defense Douglas, Gen. Twining, and ADM Burke (and Eisenhower’s military assistant, Gen Andrew Goodpaster). The meeting dealt with the establishment of the joint planning group for which everyone had an opinion. Burke was reluctant to have the group stationed in Omaha to which Eisenhower reminded him that he had previously vetoed a joint strategic command under SAC. After Burke also argued that submarine commanders should be given assignments for targets and left to deliver the weapons as they best saw fit, Gates remarked that Burke wanted a “coordinated, not an integrated” plan. After some more discussion, the issue was decided. Less than a week later, on August 16, 1960, Gates authorized establishment of what would come to be called Joint Strategic Target Planning

Staff (JSTPS).<sup>65</sup> Using the Hickey report as a starting point, the JSTPS created the first Single Integrated Operational Plan, SIOP-62.

By the end of his administration, Eisenhower was pursuing a test ban treaty to replace the voluntary moratorium that had been in place since 1958.

## 2.3 The Kennedy-Johnson Era –“Flexible Response→Counterforce → Assured Destruction” 1961-1969

President John Kennedy 1961-1963

President Lyndon Johnson 1963-1969

SecDef—Robert McNamara 1961-1968, Clark Clifford 1968-1969

SecState—Dean Rusk 1961-1969

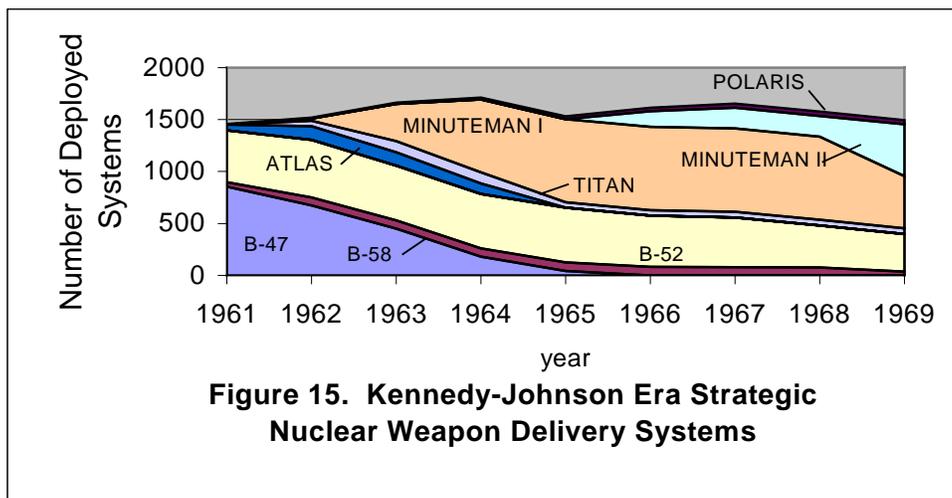
Soviet Leader—Nikita Khrushchev 1961-1964, Leonid Brezhnev 1964-1982

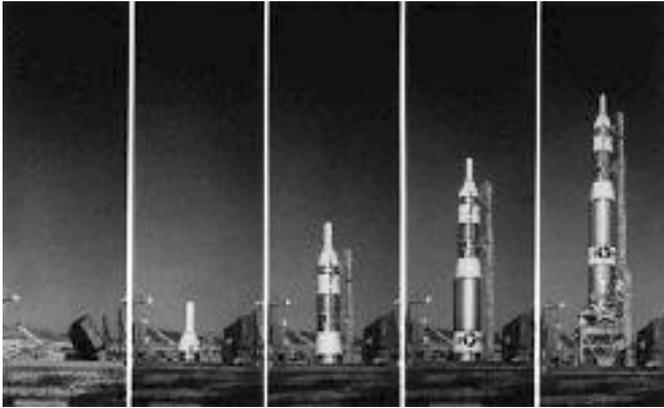
World events—

- Bay of Pigs--1961
- Berlin wall constructed--1961
- India-China War--1962
- Cuban Missile Crisis--1962
- Vietnam War-- ~1963-1975
- French withdrawal from NATO Integrate Military Structure--1966
- Six day Arab-Israeli War—1967
- Brezhnev Doctrine first displayed in invasion of Czechoslovakia--1968

Nuclear weapon events—

- Accidents at Palomares and Thule--1966, 1968
- First use control--1961
- Resumption of atmospheric testing (including Soviet 57 megaton test)--1961
- Skybolt cancelled--1963
- Limited Test Ban Treaty--1963
- MIRV Development--1964
- Chinese A-bomb--1964
- Chinese H-bomb--1967
- Negotiation of Non-Proliferation Treaty--1968
- French H-bomb--1968





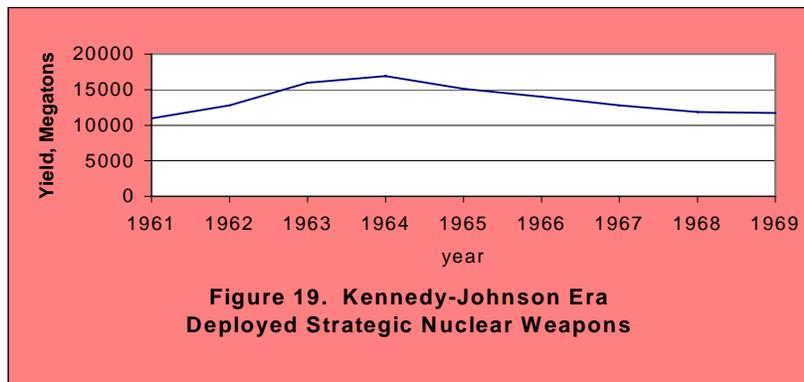
**Figure 16. Titan**



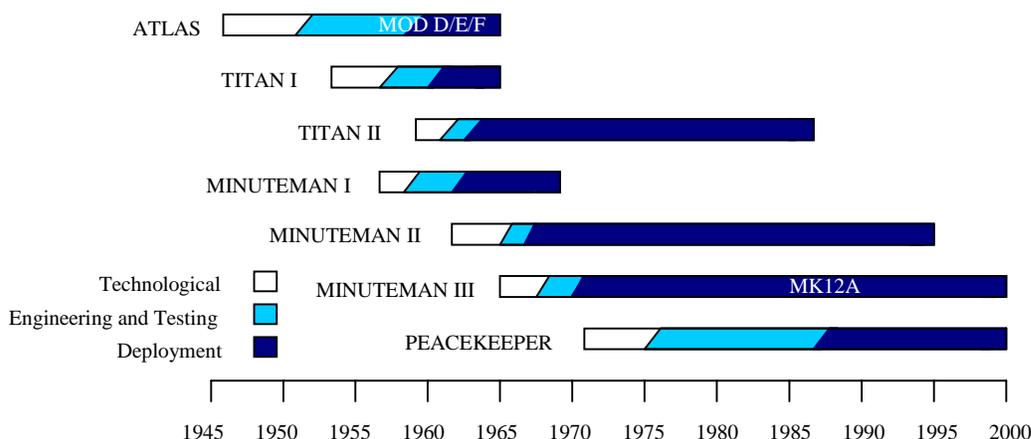
**Figure 17. Minuteman I**



**Figure 18. B-58**



Nuclear weapons strategy—flexible response, counterforce, assured destruction



**Figure 20. U.S. Intercontinental Ballistic Missile Force Development**

Discussion

Some of the conclusions of the Gaither report became issues in the 1960 presidential campaign. In particular, the issue of a “missile gap” between the Soviet Union and the U.S. was frequently mentioned by Kennedy. Eventually, after the election, Robert McNamara, Kennedy’s Secretary of Defense, stated that there was no missile gap. Even if there had been one, it might not have made any difference in the strategic balance. In a national intelligence estimate on the world situation published three days before the Eisenhower/Kennedy transition occurred, the CIA found that for most of the next decade both the U.S. and the Soviet Union would possess “relatively invulnerable nuclear weapons systems capable of inflicting enormous destruction upon the other.” In addition, the report estimated that this should lead to a state of mutual deterrence, provided both sides acted rationally and that accidents and miscalculations would not occur.<sup>66</sup> (The estimate also argued that it was imperative that the declining ability of the west to fight limited wars be reversed or else the Soviets could make many incremental gains, each of which alone would not be an issue for a nuclear confrontation. In the arena of security, the Kennedy administration would spend significantly more time on counterinsurgency matters compared to the Eisenhower administration.<sup>67</sup>) Within two weeks of taking office, the Kennedy administration was revising the foreign policy considerations that were affecting the U.S. defense posture and also what that posture should be. The slant of the revisions was to increase emphasis on non-nuclear options and anti-guerrilla capabilities. For nuclear weapons, the wording was

*General War Deterrent.* An *effective, invulnerable, and reliable* U.S. nuclear retaliatory force is required both to deter general war and to frustrate nuclear blackmail.

(a) Its *effectiveness* must be evident so that both the USSR and our allies will feel no uncertainty on this point.

(b) Its *invulnerability* must be such that (i) the Communists and our allies will realize that it could not be destroyed; (ii) we will not need to use it hastily or pre-emptively [sic] in a grave crisis, in order to prevent its being crippled by a possible Soviet attack; (iii) we will not, in the event of such a crisis, have to take such “crash” measures to enhance its invulnerability as the Soviets would be likely to consider evidence of impending attack.

(c) Its *reliability* must (i) be such as to minimize the risk of accidental war; (ii) not be so dependent on bases and forces on foreign territory as to cause the Soviets to believe that they could blunt its effectiveness by pressing our allies to limit the use of their territory or forces for this purpose.

Effective *civil defense* measures will also be required to make credible our deterrent to general war.<sup>68</sup> [emphases in original]

McNamara’s appointment to Secretary of Defense was significant to nuclear strategy because of McNamara’s background in systems analysis and operations research, first during World War II and then at the Ford Motor Company. He believed in quantification, and new ways of looking at nuclear strategy were explored. Although the deterrent implementation used by Eisenhower was massive retaliation, McNamara and other of Kennedy’s advisors did not believe that a single, credible, deterrent strategy existed for every crisis that could arise (e.g., Quemoy/Matsu, Laos, Cuba, Berlin) and so wanted “flexible response” which included both nuclear and conventional options. As Lawrence Freedman of King’s College has noted, McNamara has said “...one cannot fashion a credible deterrent out of an incredible action.”<sup>69</sup> The threat of massive retaliation in response to every crisis was not credible, and so in departing from the inflexible massive retaliation, the Kennedy administration hoped that it was making the nuclear deterrent more credible. (Recall that throughout his administration, Kennedy sent signals to Khrushchev, signals of resolve and intention by calling up reserve units and changing deployment of armed forces personnel in Europe when the two leaders disagreed on Berlin. Kennedy seemingly liked to demonstrate his resolve, perhaps influenced by McNamara and his systems analysis “whiz kids” at the Pentagon.) Furthermore, the specter of the start of World War I hung over Kennedy and McNamara, where the mobilization war plans of the nations allowed for no options, wherein all was believed to follow from who mobilized first and there was no partial mobilization. Once set in motion, a multiple nation conflagration would ensue—a clear example of “crisis instability.” (Barbara Tuchman’s history of the start of World War I, *The Guns of August*, was mentioned several times by Kennedy in press conferences and was on his mind when making strategic decisions.\*) Both of these failings, and others, of massive

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\* Robert Kennedy, in his posthumously published history of the Cuban Missile Crisis, *Thirteen Days: A Memoir of the Cuban Missile Crisis*, W. W. Norton & Co. New York, New York, 1969, states that on October 23<sup>rd</sup>, 1962, as Soviet submarines were reported by the CIA to be moving into the Caribbean, President Kennedy remarked,

“The great danger and risk in all of this...is a miscalculation—a mistake in judgment.” A short time before, he had read Barbara Tuchman’s book *The Guns of August*, and he talked about the

retaliation were of concern to at least some of the military. Maxwell Taylor, who was Kennedy's military advisor, would argue that an alternative to SIOP-62 was needed:

SIOP-62 is a rigid, all-purpose plan, designed for execution in existing form, regardless of circumstances. Rigidity stems from:

- (1) Military belief that USSR will strike cities, or urban-military targets; hence there is no need for selective U.S. targeting.
- (2) Military belief that, regardless of circumstances, USSR will be able to launch some weapons against U.S. Nowhere is real consideration given to possibility of interaction between ours [sic] and their targeting philosophy.
- (3) Belief that winning general war means coming out *relatively* better than USSR, regardless of magnitude of losses. [emphasis in original]
- (4) A fear that retaliation against cities after a surprise attack may be all we can do; with U.S. command-control knocked out, alternative plans might leave residual U.S. forces uncertain as to what to attack; U.S. flexibility would become known, and decrease deterrence...

SIOP-62 is a blunt instrument.<sup>70</sup>

Another point that DoD planners did not like about SIOP-62 was that the targeting, although aimed principally at military targets, also put the civilian population at risk, even if only collaterally. A different policy based on a different strategy was desired.<sup>71</sup>

In February 1961, McNamara sent Kennedy a letter concerning all facets of national security and strategy for the purpose of then identifying what the funding priorities should be. As to nuclear matters, McNamara identified two broad weaknesses in the letter: the vulnerability of U.S. forces to nuclear attack and the lack of flexibility available for response.<sup>72</sup> Within the context of

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miscalculations of the Germans, the Russians, the Austrians, the French, and the British. They somehow seemed to tumble into war, he said, through stupidity, individual idiosyncrasies, misunderstandings, and personal complexes of inferiority and grandeur. (p. 62)

Later, Robert Kennedy wrote, on p. 127, "...Barbara Tuchman's *The Guns of August* had made a great impression on the President. 'I am not going to follow a course which will allow anyone to write a comparable book about this time, *The Missiles of October*,' [President Kennedy] said to [Robert Kennedy]."

Some have argued that Tuchman is wrong, that World War I did not arise due to miscalculations but because Kaiser Wilhelm II wanted war. Certainly, most public reaction to war declarations throughout the countries was not one of doomed acceptance, and even Tuchman did not discount the Kaiser's often-timed strange moods. Whether the war actually resulted from errors or desire, however, is really immaterial for this point: during his administration in general and the Cuban Missile Crisis in particular, Kennedy had Tuchman's arguments, right or wrong, in his mind, and they affected him.

this largely budget debate, Bundy reiterated the requirement for a strong nuclear deterrence but not one “whose objective is a preventive or preemptive war, or any other kind of massive first strike against another nation. This is not the policy of the U.S. government.”<sup>73</sup> As the policy debate continued over the next several years, different options were debated. Much of the theoretical groundwork for these different options was being done by operations research and systems analysts in the universities and private “think tanks.”

One option McNamara examined was minimum deterrence, where the U.S. forces would not respond massively but only be poised to damage enough of the population to deter the Soviet Union. As recollected by ADM Burke, the strategy was put forward by the Navy using their newly operational Polaris submarines, which, due to accuracy limitations, could only be targeted against soft targets. The small, mobile, and invulnerable Polaris force could provide such deterrence.<sup>74</sup> As discussed above, Robert Cutler, national security advisor to Eisenhower, had argued for a strategy similar to minimal deterrence in 1958, which itself was a continuation of some of the arguments first posited by Brodie.

Another option examined was that of controlled response. In March 1961, McNamara requested the JCS consider a “doctrine of controlled responses and negotiating pauses in the event of thermonuclear attack.” Lemnitzer, Chairman of the JCS, replied on April 18 (which was the same day as the Bay of Pigs). The JCS did not believe that the U.S. had the capability to do that and “that attempts at the present time to implement such a doctrine, or to declare such an intent, would be premature and could gravely weaken our deterrent posture.”

Lemnitzer added

My personal judgment is that we do not now have adequate defenses, nor are our nuclear retaliatory forces sufficiently invulnerable, to permit us to risk withholding a substantial part of our effort, once a major thermonuclear attack has been initiated. Furthermore, the advantages to be achieved by limiting our responses, under such conditions, could only be realized by the enforcement upon the Soviets of a degree of tacit “cooperation” which does not now appear realistic. Nevertheless, I believe that further specification of such a doctrine, insofar as it applies to conditions of less than large-scale deliberate attack, would be a desirable undertaking. It would submit the complex problems of controlled responses, negotiating pauses, and their interrelationship with enemy reactions to rigorous analysis. However, except for these lower levels of attack, I believe that an attempt to spell out specific controlled response options would be undesirable until we have more knowledge of the technological possibility of creating the essential building blocks on which safe implementation of the doctrine could be based.

Lemnitzer went on state that he would direct the Joint Strategic Survey Council to examine the matter further.<sup>75</sup> Criticisms of the existing nuclear strategy continued, however. An interagency team was writing a paper concerning the need for a change. “The present concept is based on ‘spasm war.’” This was deemed unworkable, and it was vital to move to the notion of “controlled response over a period of time.” “[The U.S.] general plan should be flexible and include a large variety of controlled responses.”<sup>76</sup> The draft paper has the “explicit introduction of second-strike counterforce (countermilitary) capability as an objective to be achieved by our striking force.”<sup>77</sup>

Counterforce provided a flexible, controlled response. The counterforce work, however, would not reach McNamara until the winter.

While these discussions were going on and papers were being written, the world situation was not calm. In addition to the Bay of Pigs in April, the Berlin crisis was still festering. During the summer, Kennedy called up reserves in response, and on August 13, 1961, the world awoke to the Berlin Wall. Identifying the correct nuclear strategy was not considered to be just a theoretical exercise.

Where were the strategic theories coming from? As mentioned above, analysts at universities and in the private sector, notably RAND Corporation, were developing nuclear strategic theories. McNamara, with his background in systems analysis and operations research, appointed assistants with similar backgrounds, and they listened to these analysts. One such analyst, William Kaufmann, first at Yale and then at RAND, developed the theory of “counterforce” in which the enemy’s forces were targeted and different options were available to the president. His theory held that sufficient nuclear forces should exist to be able to defeat all, or at least most, of the enemy’s nuclear forces and still have enough forces left to continue to hold the rest of the targets, including the population, at risk. This was put forward as “returning the war to the soldiers.” He briefed McNamara, and the briefing had the desired result. “Within a week he had reversed himself,’ Kaufmann said of the defense secretary’s brief flirtation with minimum deterrence.”<sup>78</sup> McNamara gave two speeches in the late spring of 1962 that declared the new policy would be counterforce. These occurred at the Ministerial meeting of the North Atlantic Council in Athens in May and at the University of Michigan commencement exercises in Ann Arbor, Michigan in June.<sup>79</sup>

Herman Kahn was also at RAND through the late 1950s and into the mid-1960s. In 1960, he published his seminal work *On Thermonuclear War* in which he collected a series of lectures he had been giving DoD personnel and others concerning “thinking the unthinkable.” The book bursts with calculations and arguments among which are multiple levels of escalation (provided the two sides correctly can send their messages and the message sent is correctly received) and a distinguishing of three levels of deterrence. He simply called them Types I, II, and III. Type I deterrence was deterrence of hostile acts against one’s homeland, Type II was the deterrence of hostile acts against one’s allies, and Type III was a category of “all other acts” that are characterized as hostile.<sup>80</sup> Although Kahn’s work was too theoretical to be adopted in full, it provided reasoned argument and computational support for the counterforce ideas.

In addition to Wohlstetter, Kaufmann, and Kahn, another nuclear strategist from the era was Thomas Schelling. He was an economist at Harvard University who had had previous experience in trade negotiation theory. He too was against massive retaliation and argued for a strategy akin to counterforce wherein different levels of force, conventional or nuclear, could be used to send appropriate deterring signals to a foe.<sup>81</sup>

In the arena of budgets and budget rationale, however, McNamara was not ready to accept fully the counterforce theory. In November 1962, after the Cuban missile crisis, McNamara sent Kennedy his second nuclear budget proposal. For FY64-FY68 forces, his force level requirements are

...to provide the United States with a secure, protected retaliatory force able to survive any attack within enemy capabilities and capable of striking back and destroying Soviet urban society, if necessary, in a controlled and deliberate way and, second, to deny the enemy the prospect of achieving a military victory by attacking our forces.... Strategic offensive forces can also make an important contribution by striking back against Soviet bomber bases, missile sites, and other vulnerable elements of Soviet follow-on forces. In some circumstances, our counterattack may succeed in blunting the Soviet attack and make a substantial contribution to the damage-limiting objectives.<sup>82</sup>

The previous year he had discussed what the requirements were not. Here, the requirements have an element of counterforce, but they still have cities as targets. Over the next year, McNamara's strategic thinking would evolve considerably.

President Kennedy personally was involved in nuclear strategy discussions. For example, the Net Evaluation Subcommittee report was presented at the September 12, 1963 meeting of the NSC, and General Leon Johnson, who had headed the study, was there to answer questions. The subject of the meeting was mostly the new Net Evaluation Subcommittee report. Kennedy wanted to know if a preemptive first strike still resulted in unacceptable damage to the U.S., and Gen Johnson replied that it did. Kennedy then asked if we were in a nuclear stalemate with the Soviets, and Johnson said yes and later said that "it would be impossible for us to achieve nuclear superiority." Then,

[t]he President said that de Gaulle believed that even the small nuclear force he is planning will be big enough to cause unacceptable damage to the USSR. He asked why we need to have as much defense as we have if, as it appears, the strategy is based on the assumption that even if we strike first we cannot protect the security of the U.S. in nuclear warfare.

After several others gave opinions, McNamara eventually replied that there were many uncertainties in the evaluation, and that is the reason we need such a large force. But, the uncertainties were being studied, and the answer to the President's question might change in the future.

Gen. Johnson later stated "...[N]uclear war is impossible if rational men control governments."

Secretary Rusk said he agreed, but he did not get much comfort from this fact because, if both sides believed that neither side would use nuclear weapons, one side or the other would be tempted to act in a way which would push the other side beyond its tolerance level.

President Kennedy stated "...[P]reemption was not possible for us and that that was a valuable conclusion growing out of an excellent report."<sup>83</sup>

Although at first it had sounded good, there was a potential problem with counterforce. McNamara came to the realization that the strategy "...presented no logical limit to the size of

the arsenal; that as long as targets of potentially military value could be found or as long as the Soviets added more weapons to their own arsenal, someone could always claim we did not have enough....”<sup>84</sup> The Secretary of Defense gave President Johnson a new draft presidential memorandum (DPM) in December 1963 that emphasized deterrence rather than fighting a nuclear war. It stated that counterforce “may not hold great promise” and that the extra expenditures to try to achieve it were not warranted. The requirement was now that after a surprise Soviet counterforce strike, the United States should still have enough forces surviving to destroy the USSR’s governmental and military controls as well as a large percentage of its population and industrial base. Some of the metrics given are 30% of the population, 50% of the industrial capacity, and 150 of the Soviet cities.<sup>85</sup> Four hundred megatons was deemed a sufficient delivered stockpile. An important point though was that

[i]t all appeared scientific and precise, but in fact it had little to do with any formulation of how much would be enough to deter the Soviets. It was the output of a computer program designed by Alain Enthoven [another RAND alumnus], “laying down” one-megaton bombs against Soviet cities and calculating, at various points, how much additional damage one additional bomb would do. From this calculation, Enthoven generated a graph with two curves, one showing how many people would be killed, the other how much industry destroyed, as a function of “delivered one-megaton warheads.” Beyond 400 megatons, by which point all major cities would be devastated, the curves began to flatten considerably. And they happened to show that 400 megatons would kill about 30 percent of the Soviet population...and destroy about half its industrial capacity....In short, the 400-megaton requirement was based on the concept, familiar to all economists, of “diminishing marginal returns.”<sup>86</sup>

McNamara referred to this new strategy as “assured destruction.”<sup>87</sup> The metrics cited above, 30% of the population, 50% of the industrial capacity, and 150 of the Soviet cities, were not targeting guidance, however, but rather the result of a budgeting exercise attempting to ascertain “how much was enough.” “Assured destruction” was a declared policy that did not become an operational policy.

Several other comments must be made about this strategy. First, the metrics were not based on an analysis of what we believed the Soviets would be deterred by. Second, the strategy followed the stockpile plan. By 1969, if McNamara’s stockpile plan had been followed, the strategic stockpile would have a yield of 1200 megatons. Enthoven allowed each leg of the triad to have 400 for the sake of added delivery redundancy.<sup>88</sup> Obviously from the chart we provide that shows the stockpile yield, by 1969 the stockpile was not 1200 megatons. The charts display the yield of the entire stockpile, not just the strategic stockpile, and more importantly from a strategic standpoint, the plan was not ultimately implemented.

With the promulgation of assured destruction, nuclear strategy thinking was static during the latter parts of the Johnson administration. Vietnam dominated the strategists time and energy. Weapon research began looking at multiple independently targeted reentry vehicles (MIRVs) and continued that into antiballistic missiles (ABMs).

As to the Soviet Union, Communist party and military leaders were aggravated by the performance of Khrushchev during the Cuban Missile Crisis. Within two years, Khrushchev was replaced by Brezhnev, who had served as the Communist party's administrator of strategic military programs in the late 1950s. A concerted research and development effort was begun on additional Soviet nuclear weapons and missiles.<sup>89</sup>

## 2.4 The Nixon/Ford Era—“Realistic Deterrence→ Flexible Strategic Options” 1969-1977

President Richard Nixon 1969-1974

President Gerald Ford 1974-1977

SecDef—Melvin Laird 1969-1973, Elliot Richardson 1973, James Schlesinger 1973-1975, Donald Rumsfeld 1975-1977

SecState—William Rogers 1969-1973, Henry Kissinger 1973-1977

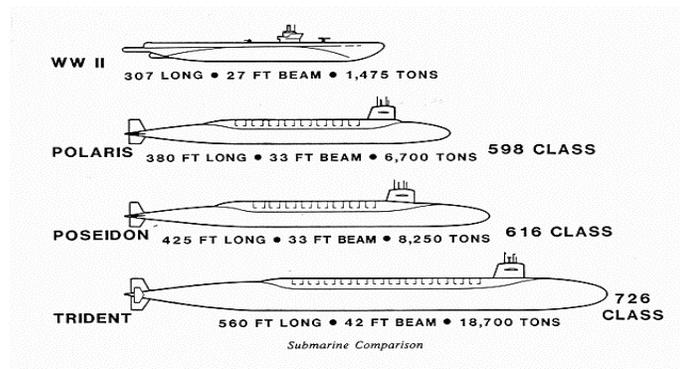
Soviet Leader—Leonid Brezhnev 1964-1982

World events—

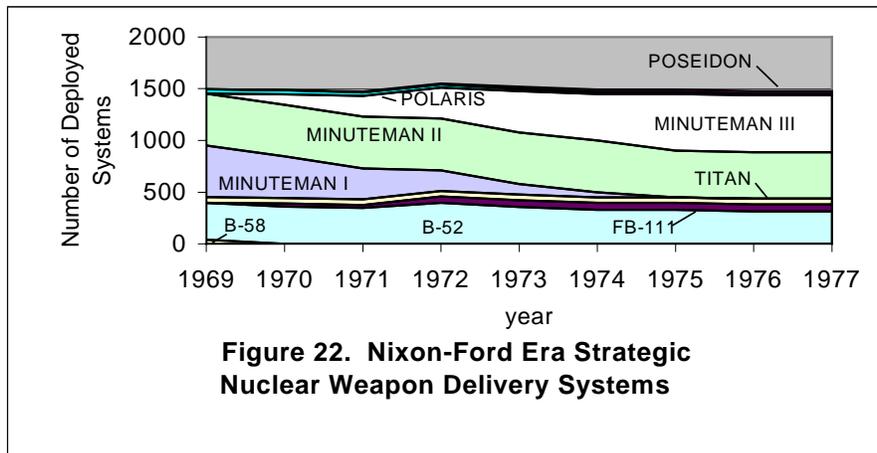
- Détente with the Soviet Union--1970
- Diplomatic opening with mainland China--1971
- India-Pakistan War--1971
- Republic of China expelled from U.N.--1971
- Watergate--1972-1974
- Rise in terrorism--1972
- Withdrawal from Vietnam--1973
- Yom Kippur War with subsequent oil crisis--1973
- Insurgencies in Africa--1970s

Nuclear weapon events—

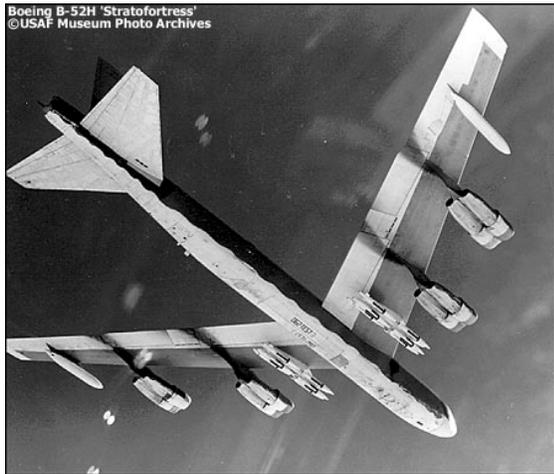
- SALT I--1972
- ABM Treaty--1972
- Threshold test ban treaty--1974
- Indian “Peaceful Nuclear Explosive”-1974
- Modern nuclear weapon safety (“Fowler letter”)-1974
- ABM North Dakota site deactivated--1976



**Figure 21. Submarines**



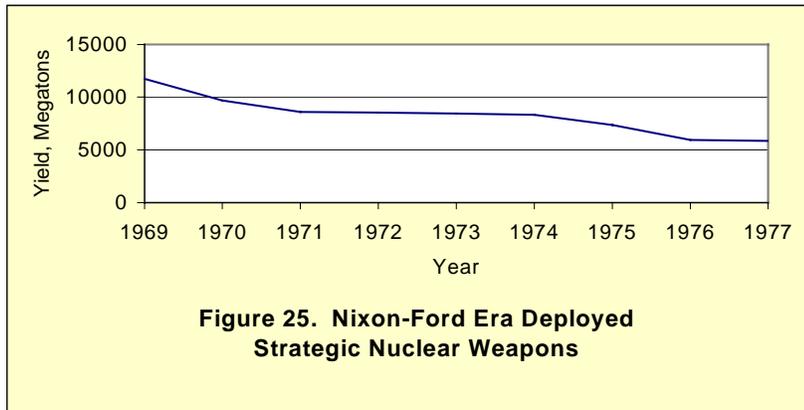
**Figure 22. Nixon-Ford Era Strategic Nuclear Weapon Delivery Systems**



**Figure 23. B-52H**



**Figure 24. FB-111A**



Nuclear weapons strategy—counterforce with flexible attack options, both limited and full

## Discussion

In January 1969, a Republican administration replaced the Democratic Kennedy-Johnson years. Even before the change, not everyone was happy with the concept of assured destruction. Donald Brennan of the Hudson Institute (Herman Kahn's new home) satirically referred to it as "Mutual Assured Destruction" from whence the acronym MAD comes.<sup>90</sup> Henry Kissinger would become, first, the National Security Advisor in the new administration and, then, Secretary of State. He was also a nuclear strategist and had written a text about it earlier (*Nuclear Weapons and Foreign Policy* published in 1957). In February 2000, in an article mostly dealing with missile defense policy, he wrote

As for the argument that national missile defense runs counter to the longstanding strategic concept of Mutual Assured Destruction, a reassessment of that essentially nihilist doctrine is overdue.

Advocates of the doctrine converge on the proposition that nuclear war is best prevented by guaranteeing the most cataclysmic outcome. Hence, they oppose any strategy based on discriminating targeting, and passionately resist any attempt to construct defensive systems. Security is sought in the unprecedented attempt to leave one's own civilian population totally vulnerable to nuclear attack while targeting the civilian population of the other side. In these terms, defense policy turns on itself. It becomes anti-defense, to guarantee the total vulnerability of the population.

This theory is better suited to an academic than to a national leader required to make fateful decisions in the real world. It is one thing to theorized about mutual deterrence based on the threat of mutual suicide, quite another to implement such a concept in an actual crisis....<sup>91</sup>

In his 1970 State of the Union message, Nixon rhetorically asked whether assured destruction of both Soviet and U.S. citizens should be the only alternative a president had. Changes in strategic thinking were occurring due to the "reemergence in the government" of the RAND influence, namely James Schlesinger, who reintroduced theories of counterforce and nuclear war-fighting. (He had written a book in 1958 about the "suicidal implications" of U.S. nuclear strategy.) Furthermore, Schlesinger thought that a goal of arms control should be to keep a nuclear war as confined as possible and directed toward military, not civilian, targets. Schlesinger would eventually be Secretary of Energy and Defense and Director of Central Intelligence.

In January 1974, Schlesinger stated "that the destruction of enemy cities 'should not be the only option and possibly not the primary option' of the United States in the event of war." Instead, his strategy included a series of 'limited nuclear options' that ranged from the destruction of individual missile fields, industries, or cities in the Soviet Union to the wholesale counterforce war-between-the-bases that William Borden had forecast almost thirty years before." This doctrine appeared in NSDM-242.<sup>92</sup> Much of the background and analysis for the "Schlesinger doctrine" had come from a study panel headed by John Foster, DDR&E. General Jasper Welch,

Air Force, was a member of the panel. “He admitted that another big change was to remove deterrence from the category of an abstract theory and to assign it a human—indeed, a Russian—face: ‘We did have a notion that we ought to deter all three power centers in the Soviet Union: the Party, the Army—and I mean the Army specifically—and the technocrats, the guys who build factories.’”<sup>93</sup>

In addition, Schlesinger desired that the some of the war plan options would suppress the economic recovery of the Soviet Union. A metric he introduced was that seventy percent of the industry needed for economic recovery should be destroyed in an all-out strike. This led to many studies of the Soviet economy to determine the targets.

Schlesinger made disparaging comments about MAD. He called it “a wrong declaratory policy,” that it “lacked convincingness” and was “logically inconsistent.” It had “moral defects.” “What you declare in advance is designed to affect the psychology of the other side.’ [H]is private feeling [was] that the United States shouldn’t tell Russians what it was *not* going to do.” This lay behind his emphasizing “selectivity” in the war plan. He was “more interested in selectivity than in counterforce *per se*. Going after selected silos might be a way of delivering a message.” He wanted to make uncertain what the American response would be to a specific provocation and even have it uncertain as to whether the U.S. would not strike first. At the same time, he also believed that it was impossible for a Russian first strike to disarm the U.S. and *vice versa*.<sup>94</sup>

Other strategists also believed in the war-fighting potential of nuclear weapons. In a 1977 article, Richard Pipes

...blamed “a coalition of groups” for silencing the opinion of the Strategic Bombing Survey that the atomic bomb represented no revolution in warfare. Each of those groups “for its own reasons,” he wrote, depicted the bomb instead “as the ‘absolute weapon’ that had, in large measure, rendered traditional military establishments redundant and traditional strategic thinking obsolete.” Pipes charged that Russian nuclear strategists had always held to the traditional view that the aim of strategy was to ensure victory. Americans, on the other hand, had eagerly but mistakenly embraced notions of deterrence and mutually assured destruction under the baneful influence of this coalition.<sup>95</sup>

While these discussions were going on, a new reality had arisen in nuclear strategic matters. For the U.S., the Watergate political scandal destroyed the effectiveness of Nixon and first waging war in Vietnam and then departing from it required much of the defense budget and dominated the planners time. The Soviet Union, on the other hand, was deploying many new weapon systems. As can be noted from the accompanying chart, this does not mean that U.S. strategic systems stood still; the U.S. deployed new strategic nuclear delivery systems. They were replacements for systems to be retired and overall system levels stayed constant during these years (the stockpile yield actually halved during the Nixon-Ford era). Even so, the Soviets achieved a rough parity in strategic systems, resulting from the intensive R&D and production programs they had launched subsequent to Brezhnev’s rise to power following the

embarrassment of the Soviet leadership from the Cuban Missile Crisis. The system levels negotiated in the Strategic Arms Limitation Talks (SALT) presume an ongoing parity.

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## 2.5 The Carter Era—“Countervailing” 1977-1981

President Jimmy Carter 1977-1981

SecDef—Harold Brown 1977-1981

SecState—Cyrus Vance 1977-1980, Edmund Muskie 1980-1981

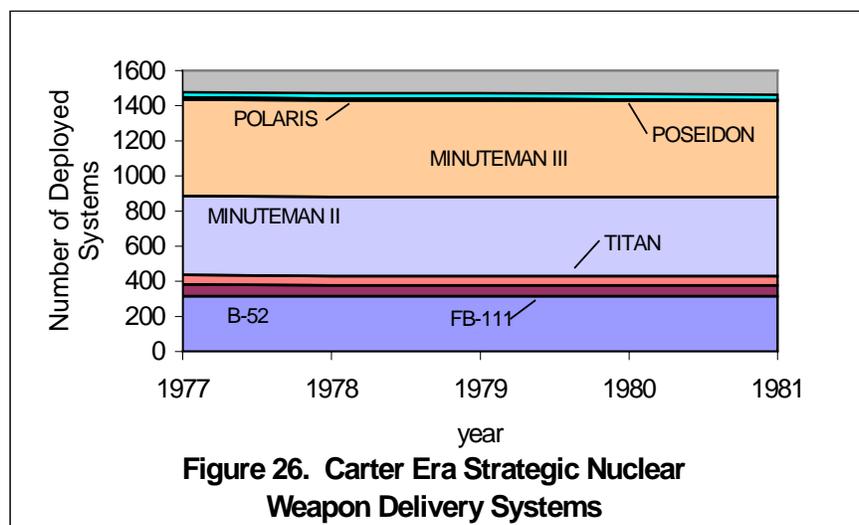
Soviet Leader—Leonid Brezhnev 1964-1982

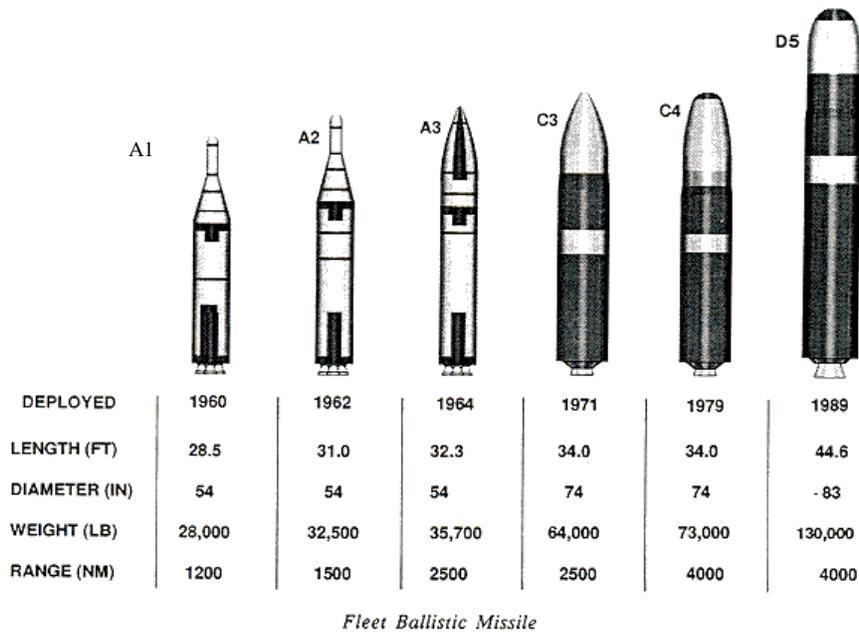
World events—

- Inflation--1970s
- Insurgencies in Africa--1970s
- Terrorism continues--throughout 1970s
- Sadat visits Israel and Camp David accords--1978
- Negotiation of SALT II--signed 1979, never ratified
- Iranian revolution with subsequent oil crisis--1979
- Three Mile Island Nuclear Power Plant accident--1979
- Soviet invasion of Afghanistan--1979
- Beginning of Solidarity movement in Poland--1979

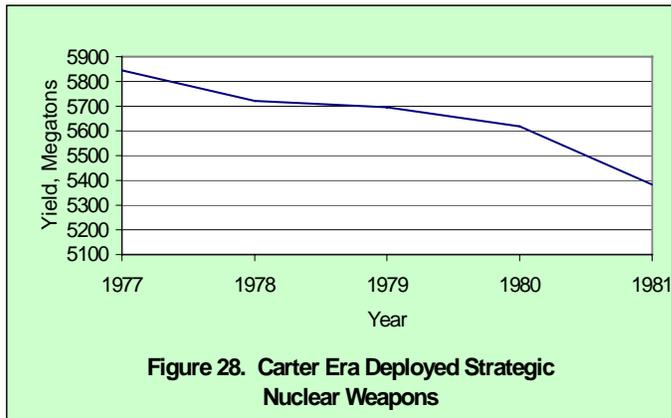
Nuclear weapon events—

- Non-Proliferation Treaty signed--1977
- On-again, off-again B-1--1977 (modified, it would enter service in 1986)
- MX basing mode controversy--1977 until deployment in 1985
- New weapons (including “neutron bomb”) for Europe with protests beginning in Europe and U.S.--1979
- Possible nuclear test in South Atlantic by unknown country--1979





**Figure 27. Submarine Launched Ballistic Missiles**



Nuclear weapons strategy— countervailing with multiple attack options including explicit targeting of Soviet leadership thereby denying victory to Soviets

## Discussion

Nixon-Ford-Kissinger-Schlesinger was followed by Carter-Brzezinski-Brown. Through the 1970s, nuclear debates focused on ABM, Trident, MX, and B-1, as well as the continuing Soviet buildup. Brzezinski wanted options so that nuclear forces could be employed selectively to deter different levels of Soviet aggression. He wanted a policy of graduated responses in order to make the Soviet leaders more cautious, but Brzezinski also noted that psychological factors were at least as important in deterrence as technological ones. (What the Soviets perceive us to be doing can be more important than what we are doing.) He thought that our old nuclear policy was only relevant as long as the U.S. had nuclear superiority, but the policy needed to be changed to reflect the new reality of nuclear parity. Presidential Review Memorandum (PRM)-10 was written for him, which became, after ensuing debate, Presidential Decision (PD)-59 (eventually signed in July 1980). Much of the input to the two documents came from the Nuclear Targeting Policy Review, a study headed by Leon Sloss, which recommended that more emphasis should be placed on military targets and less on urban/industrial targets. In addition, it recommended that the Soviet leadership should be targeted as a priority.

Although there were more similarities than differences between PD-59 and the Schlesinger Doctrine, PD-59, following from the recommendations from the NTPR, was directed more to war-fighting and less to issues such as economic recovery. The order did not envision a quick spasm of nuclear bursts but a longer war, one it might be possible to win. “The theory of victory that was said to be contained in PD-59 revolved around distinguishing the political leadership of Russia as a target from the country’s military command and control apparatus.” It recognized that the “highly centralized nature of the communist system made it particularly vulnerable to the chaos and disruption that would inevitably follow a nuclear attack, and hence that this weakness itself might actually compel a Soviet surrender.” Schlesinger believed that PD-59 was not so much revolutionary in its actual war planning direction but rather in its declaratory policy. He thought that PD-59, along with the vast increase in the number of weapons since his policy, changed the thrust from “selectivity and signaling to that of victory.” Harold Brown, at the urging of William Kaufmann, changed “counterforce” in the directive to “countervailing.” Brown explained: “A countervailing strategy is a strategy that denies the other side any possibility that it could win—but it doesn’t say that our side would win.” “[Brown] thought the origins of countervailing strategy lay in the only consensus that had been reached by the various drafters of PRM-10—on Russia: ‘What people were finally able to coalesce around is that deterrence requires you to deter the other side—not yourself. Therefore you have to make some sort of judgment about what that takes. As soon as you say that, you’re into very muddy ground—because the question is, ‘What does it take to deter the Soviets?’ Some people say, ‘Well, for the Soviets, they have to know that if they start a war you’ll win it.’”<sup>96</sup> Thus, although some believed that PD-59 called for victory, it really called for a denying of victory to the Soviet Union.

As Walter Slocombe, Deputy Undersecretary of Defense for Policy Planning under Brown, has written about the countervailing strategy,

The [countervailing] strategy ...helps to make clear that the United States would not be forced by a Soviet attack on our ICBMs to choose between surrender and a suicidal all-out attack on Soviet cities. Instead, the United States would be able to retaliate against a more limited set of Soviet targets, so as to deny the USSR any military advantage from its attack, while retaining a force in reserve capable of still further attacks on a broader set of targets, should the Soviets continue to escalate the conflict. The existence of such options and continuing efforts to improve American flexibility in this regard is the central message of the countervailing strategy.<sup>97</sup>

## 2.6 The Reagan/Bush Era—“Cold War→Strategic Redirection” 1981-1993

President Ronald Reagan 1981-1989

President George Bush 1989-1993

SecDef—Caspar Weinberger 1981-1987, Frank Carlucci 1987-1989, Richard Cheney 1989-1993

SecState—Alexander Haig 1981-1982, George Shultz 1982-1989, James Baker 1989-1992, Lawrence Eagleburger 1992-1993

Soviet Leaders—Leonid Brezhnev 1964-1982, Yuri Andropov 1982-1984, Konstantin Chernenko 1984-1985, Mikhail Gorbachev 1985-1991

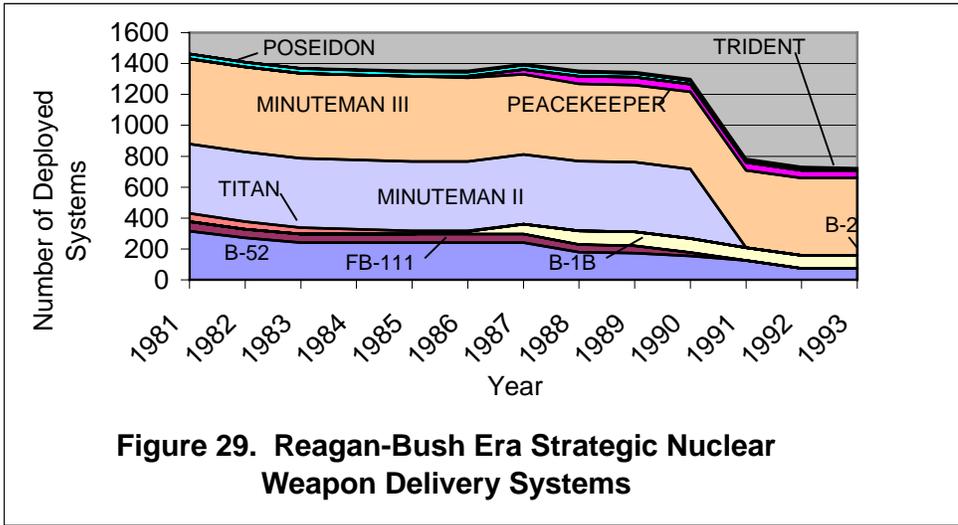
Russian Leader—Boris Yeltsin 1991-1999

World events—

- Israeli bombing of Iraqi reactor--1981
- “Evil empire” speech --1983
- Break-off of arms control negotiations with Soviet Union --1983
- KAL 007 shot down by Soviets--1983
- Start of deployment of Pershing and GLCM to Europe--1983
- Nuclear freeze movement--first half of 1980s
- Arms control negotiations resume--1985
- Chernobyl accident in Ukraine S.S.R.--1986
- Intermediate Nuclear Forces (INF) Treaty--1987
- Conventional Forces in Europe (CFE) Treaty--1989
- Fall of Berlin Wall--1989
- Soviets begin withdrawal from Afghanistan--1990
- Breakup of Warsaw Pact--1990
- START I--signed 1991
- Gulf War--1991
- Failed coup in Soviet Union and its subsequent dissolution--1991
- Dissolution of Yugoslavia begins--1991

Nuclear weapon events—

- Very accurate submarine-launched weapon introduced--Trident II D-5 SLBM
- B-2 unveiled--1989
- Unilateral U.S. discontinuation of new weapons programs (W89, B90, W91), production limitations on others (B-2, Peacekeeper, ACM, W88), unilateral pullback of U.S. theater/tactical nuclear weapons and removal of some systems from deployment and de-alerting of others (President Nuclear Initiative I 1991, PNI II 1992)
- STRATCOM established--1992
- Congressional moratorium on nuclear testing--1992



**Figure 30. Minuteman III**



**Figure 31. Trident D-5**



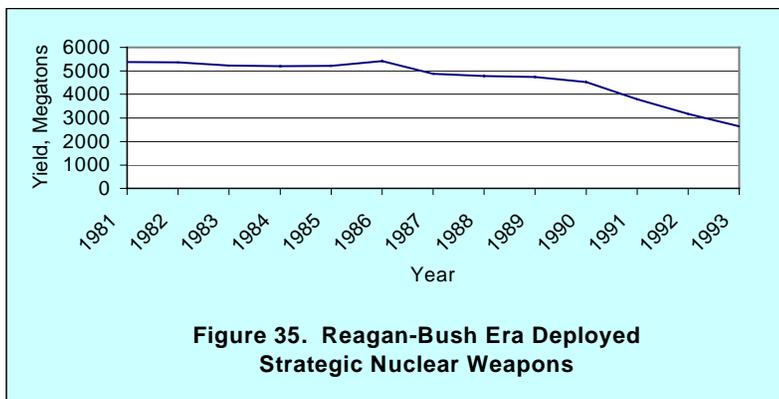
**Figure 32. Trident Submarine**



**Figure 33. B-1B**



**Figure 34. B-2**



## Discussion

During the Reagan administration, the nuclear strategy was outlined in National Security Decision Directive (NSDD)-13, issued in 1981. It differed somewhat from PD-59 in that instead of denying victory to the Russians, its goal was a decisive U.S. victory. Such a victory might only occur after months, even years, of nuclear exchanges. The mention of “prevailing” over the Soviets in a nuclear war was explicitly reintroduced into NSDD-13, after having been removed from plans during the Kennedy years.<sup>98</sup> In addition, the new administration continued and expanded the defense buildup started under Carter which included the modernization of all three legs of the strategic triad as well as new nuclear weapons for the European theater. In 1983, Reagan gave his Strategic Defense Initiative speech. NSDD-85 followed, establishing an SDI research program. The continued policy of having selected targeting options with the prospect of modern strategic and tactical weapons as well as research into strategic defense led the Soviets back to the negotiating table from which they had withdrawn in the early 1980s. Agreements were reached on conventional forces, nuclear forces in Europe, and strategic forces, the latter for the first time reducing the number of delivery systems.

Throughout the rest of the twelve years of the Reagan-Bush era, the mixture of defense modernization and negotiations continued. In November 1989 the Berlin wall was pushed over by the East German public. Approximately two years later, the Soviet Union ceased to exist shortly after a failed coup attempt. Preceding that in 1990, Secretary of Defense Richard Cheney had a strategic targeting review that was the most comprehensive review of strategic targeting ever conducted by the DoD. The effort covered the full spectrum of policy, intelligence support, targeting guidance, and war plan production.

In September 1991 President Bush ordered a unilateral reduction in U.S. strategic forces numbers, deployments, and research and development programs. Specifically he announced that: (1) strategic bombers and Minuteman II ICBMs were taken off alert; (2) 450 MM II silos were placed in a standdown status pending destruction; (3) all deployed ground-launched, short-range nuclear forces were recalled to the U.S. and slated for retirement and elimination; (4) nonstrategic nuclear weapons were ordered removed from routine deployment on Navy ships and submarines; and (5) development programs for the mobile ICBM, Small ICBM, and SRAM II missiles were canceled or suspended. Then in his January 1992 State-of-the-Union address he announced additional initiatives: B-2 procurement was terminated; production of the Peacekeeper missile was stopped; the ACM build was truncated; the Small ICBM program (previously suspended) was canceled; and the production of new warheads (W88) for the Trident missile was stopped. All these decisions, from September 1991 and January 1992, were known as PNIs I and II (Presidential Nuclear Initiatives).

## 2.7 The Clinton Era—“Cooperative Engagement” 1993-2001

President William Clinton 1993-2001

SecDef—Les Aspin 1993-1995, William Perry 1995-1997, William Cohen 1997-  
SecState—Warren Christopher 1993-1997, Madeleine Albright 1997-

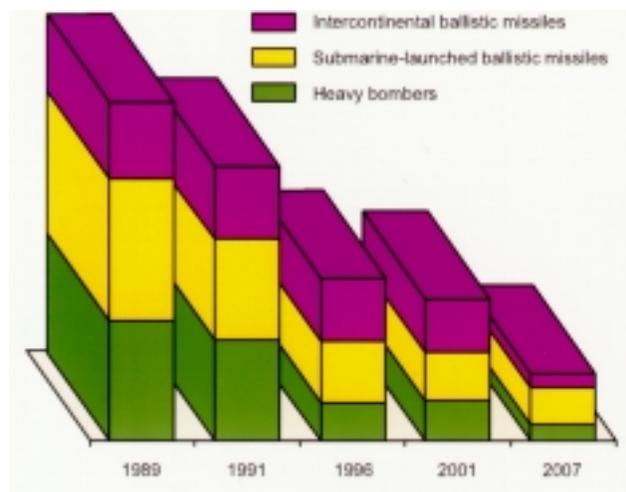
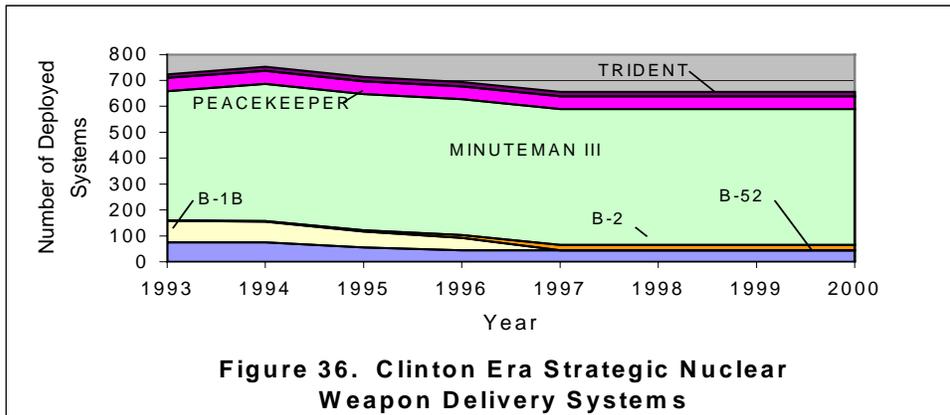
Russian Leaders—Boris Yeltsin 1991-1999, Vladimir Putin 1999-

World events—

- Continued dissolution of Yugoslavia with war in Bosnia and then Kosovo
- START II--signed 1993 (U.S ratified 1996, Russia ratified in 2000 but versions are different)
- Kim Il Sung died, replaced by son, Kim Jong Il--1994
- U.S. espionage cases (Ames discovered in 1994, others...)
- START I entry-into-force--1994
- CTBT signed by Clinton (but not ratified)--1996
- Helsinki Joint Statement on START III--1997
- Monetary crisis in east Asia leading to potential political instabilities--1997
- Continued sporadic fighting along Indo-Pakistani border and in Kashmir
- North Korean launch of Tapeo-Dong missile--1998
- Expansion of NATO from 16 to 19 countries at 50<sup>th</sup> anniversary--1999
- Introduction of euro--1999
- Discussions with Russia on START III and ABM modification--1999-2000
- Rise of non-state supported terrorism
- Kursk Accident--2000

Nuclear weapon events—

- Stockpile Stewardship Program initiated--1993
- Nuclear Posture Review completed--1994
- Widespread discussion that North Korea either had one or a few crude nuclear weapons or was close to having them--1994
- New U.S. nuclear policy issued (PDD-60)--1997
- Indian and Pakistani A-bomb tests; Indian H-bomb claim--1998
- Earth-penetrating bomb fielded (B-61/11)--1998
- Rumsfeld Commission report on the ballistic missile threat to U.S.--1998
- National Nuclear Security Administration created--1998



**Figure 37. Deployed U.S. Strategic Nuclear Weapons—1989 and into the Future (based on Start II entry into force and full implementation)**

(Figure 37 is taken from the speech by Secretary of State Madeleine Albright to the Non-Proliferation Treaty Review Conference held at the United Nations in New York on April 24, 2000.)

Nuclear weapons strategy—nuclear weapons declared to play a diminished role: continuation of previous targeting philosophy while strategies for new multi-polar, proliferated world are debated

## Discussion

With the dissolution of the Soviet Union and the movement toward arms control treaties that lower the number of deployed weapons, the U.S. nuclear strategy has remained basically the same. There are fewer targets and weapons, but the philosophy of what should be targeted has remained the same. New threats are arising, such as regional powers and non-state terrorists, but no new strategy has been completely developed to account for how to deter them. This issue will be explored in the next section.

The Nuclear Posture Review (NPR) conducted in 1993-94 reexamined nuclear policy and forces in light of the post-Cold War era and recommended a revised nuclear posture. It reaffirmed the role of nuclear weapons in providing a deterrent for the U.S. and also the importance of maintaining the triad to provide that deterrent. It found that START-II limits sustained U.S. nuclear deterrence but that a reconstitution capability for the stockpile should be maintained. The START-II force levels would be 14 Trident submarines carrying Trident II missiles, 66 B-52 bombers, 20 B-2 bombers, and 500 Minuteman III missiles carrying single warheads divided into three wings. While these were the final recommendations, there was not unanimity from the beginning. For example, during the review, different strategies were proposed, even deep cuts in strategic weapons with retaining only enough to hold a small number of Russian cities at risk. As discussed above, this is the type of argument that had occurred during the Truman, Eisenhower, and Kennedy administrations.

President Clinton approved a revised U.S. nuclear policy in 1997 that superseded NSDD-13. Robert G. Bell, senior director for defense policy at the National Security Council, reported that the new policy “recognizes that we’re at the end of the Cold War and that nuclear weapons now play a smaller role in our nuclear strategy than at any point during the nuclear era.” He also stated that “most notably the PDD removes from presidential guidance all previous references to being able to wage a nuclear war successfully or to prevail in a nuclear war... The emphasis in this PDD is therefore on deterring nuclear wars or the use of nuclear weapons at any level, not fighting [with] them.”<sup>99</sup>

The Helsinki Joint Statement on START III signed by Clinton and Yeltsin stated that once START II enters into force, U.S. and Russia will immediately begin negotiations on a START III agreement to include establishment by December 31, 2007, lower aggregate levels of 2,000-2,500 strategic nuclear warheads for each side. (More recent indications are that the Russians would like lower levels than this.) The two countries would also negotiate measures relating to transparency of warhead inventories and the destruction of strategic nuclear warheads plus explore measures relating to sea-launched cruise missiles and tactical nuclear systems.

The Rumsfeld Commission Report released in July 1998 concluded that North Korea, Iran, and Iraq would be able to inflict major destruction on the U.S. within about five years of a decision to acquire such a capability. It further stated that “the threat to the U.S. posed by these emerging capabilities is broader, more mature, and evolving more rapidly than has been reported in estimates by the Intelligence Community.”

The *National Security Strategy* released by the White House in December 1999 discussed the role of nuclear weapons in U.S. security strategy. “Our nuclear deterrent posture is one example of how U.S. military capabilities are used effectively to deter aggression and coercion against U.S. interests. Nuclear weapons serve as a guarantee of our security commitments to allies and a disincentive to those who would contemplate developing or otherwise acquiring their own nuclear weapons. ... The United States will continue to maintain a robust triad of strategic nuclear forces sufficient to deter any potential adversaries....”

## 2.8 Enduring Principles of Deterrence Policy

A striking feature of the preceding discussions is that a number of issues have appeared and reappeared during the 55 years of the nuclear era. Debates about them continue to this day, and because the debates continue, the issues are perhaps best phrased as questions. These questions include:

- For what purpose does the U.S. have nuclear weapons? Are they a sword or are they just a shield, that is, do they exist to fight wars if necessary or do they exist only to prevent wars? If they exist to fight wars, are they to be used in a limited (less than the entire inventory) fashion? If so, how are such wars, once initiated, stopped? If they are not for war-fighting but just for war prevention, how do we signal to potential adversaries that we will use them if necessary so that they *know* we will use them?
- Following from the above, what are the appropriate targets for nuclear weapons? For example, if minimal deterrence is the purpose, then holding the population of a potential enemy state at risk has been considered to be the target. Intentionally targeting civilians, however, raises moral issues, which have been debated since St. Augustine postulated about “just war” conditions.
- Should preemption against a developing threat be a possible U.S. policy, or is it never to be an option? What about preventive strikes as another side prepares to shoot at the U.S.? Should the U.S. allow itself the option of striking first, without warning? Would such a policy be at odds with fundamental U.S. principles? Would these policies, if implemented and announced, be de-stabilizing in a crisis?
- What is the proper allocation of defense resources first between conventional and nuclear forces, and, second, among the various elements of the nuclear forces?

Over the decades, we conclude that certain principles have guided policy makers in answering many of these questions. Although details and emphases of the principles have changed from one administration to another, the principles themselves have endured. We believe they are

- Nuclear weapons exist fundamentally to deter nuclear attack against the U.S. and its allies.
- At a minimum, the U.S. will never be without nuclear weapons.
- War plans have provided flexibility and options to the National Command Authorities.

- Sufficient nuclear forces (and associated command and control) are maintained to assure their survivability and capability to inflict “unacceptable damage” to any adversary, even if that nation strikes first.
- Generally, the targets for the nuclear weapons have been the potential enemy’s nuclear forces, other military forces, leadership, and war supporting industry. Population, *per se*, has generally not been targeted.

### 3. The Future of Nuclear Weapon Deterrence

Nuclear deterrence did not fail during the Cold War, and as discussed previously, at least some hold that it definitely succeeded. In fact, Malcolm Rifkind in his speech to the House of Commons in 1993 stated that the fact that he was standing there speaking was a “tribute to the contribution that nuclear weapons have made to stability in the world.” Furthermore, in contrast to some, he emphasized that nuclear weapons are here to stay for the foreseeable future and that that is not something to regret. “[N]uclear weapons cannot be dis-invented. The knowledge exists and cannot be expunged, just as we cannot recreate a world without Maxwell’s equations or Faradays’ law.” He postulated that a world without nuclear weapons, but with the knowledge and the capability to make them, could be similar to Europe prior to World War I—an unstable situation where everyone was worried about the mobilization by others and whoever mobilized first could very well go on and win. Hence, a rush to mobilize ensued. A solution to this problem has not arrived.<sup>100</sup> Until a solution is found it is more stable to have the weapons than not to have them. And, as noted above, Rifkind very much believes that the existence of nuclear weapons has prevented major wars. Schlesinger has stated, “In the long sweep of history, it is arguable that mankind would have been better off had nuclear explosives never been developed. But that is *only* in the long sweep of history.”<sup>101</sup>[emphasis in original] In the recent past, without them, he has written that “...the kind of semidarkness that held the nations of Eastern Europe in its grip for more than four decades might also have afflicted much of Western Europe.”<sup>102</sup>

While still Secretary of Defense, McNamara also acknowledged the value of nuclear weapons. In an address to the North Atlantic Council six weeks after the Cuban Missile Crisis, he gave credit to the nuclear umbrella.

...During the Cuban crisis, Soviet nuclear power was in effect neutralized by U.S. nuclear power. In the Caribbean area, the United States had superior non-nuclear land, sea, and air forces which were quite capable of destroying the Soviet missiles. The Soviet Union’s non-nuclear forces in the area were inferior. Since the controversy between the United States and the Soviet Union was not over the issue of Soviet national survival, the Soviet Union was not prepared to use its nuclear power. And it had no other force it could effectively use. We faced a challenge which forced us to support diplomacy with military action; in this action military and diplomatic moves were meshed; there was an effort on both sides to localize the confrontation. And, perhaps, most significantly, the forces that were the cutting edge of action were the non-nuclear ones. Nuclear force was not irrelevant but it was in the background. Non-nuclear forces were our sword, our nuclear forces were our shield.<sup>103</sup>

Nuclear weapons will still exist in the future and probably should from a stability standpoint. But, the actors have changed, so will deterrence be the same in the future? With the demise of the Soviet Union, the paradigm upon which the theories for nuclear deterrence were formed has changed. Weapon levels are decreasing, more actors are entering the picture, and some of them in the future may be non-state actors. If the U.S. has had difficulty understanding the motivations of just one foe during the Cold War, that difficulty is compounded with the proliferation of potential foes and their changing character in the post-Cold War world. For example, it is arguable if a non-state actor can be deterred at all, at least in the sense of such a massive (to an individual or small group of individuals) response to his actions as a nuclear weapon.

This should not be a startling statement. Deterrence and the changing world has been a subject much in the news lately. For example, in early July 2000, the Senate held a hearing concerning deterrence.

Deterrence worked in the past because we understood much about those we were deterring, retired Air Force General Larry Welch told a Senate hearing last week. The US knew what the Soviet leadership valued. US commanders had high confidence that they could hold those assets at risk—and the Soviets knew it.

Such mutual understanding doesn't exist between the US and North Korea, or the US and Iraq, or the US and Iran. If these states of concern (formerly called "rogue states" by the State Department) develop nuclear missiles capable of reaching the US, traditional deterrence may not stop them from pushing the button. "I simply do not know what deters those particular kinds of threats," said Welch.<sup>104</sup>

Gaddis is skeptical about the future of deterrence:

The Cold War once seemed a matter of life and death; but as the years rolled by and the Apocalypse did not arrive, it took on the character of a latter-day 'great game,' reminiscent of the long nineteenth-century conflict between the British and the Russians in Asia, which never quite produced a great war. Even the language of the Cold War became that of games: policy makers warned gravely of falling dominoes; theorists built billiard-ball models of world politics; critics of détente complained that the Soviet Union was playing chess while the most the Americans were managing was checkers." But, everyone knew there were rules to the game. That no longer holds and we are going back to geology in international relations, not games—historian Samuel Huntington talks of "fault lines" between civilizations, economist Lester Thurow talks of "tectonic plates" colliding, and journalist Robert Kaplan writes of seismic shifts resulting from demographic pressures.

The Cold War...was Clausewitzian to the core. With the development of nuclear weapons, the means of violence had swollen to unimaginable proportions; but the great powers maintained such tight control that none resorted to any of those devices.

Confronted with the possibility of their use, leaders as dissimilar as Eisenhower, Khrushchev, Macmillan, De Gaulle, and Mao Zedong found in the urgency of living to play the game another day. Clausewitz's insistence that the instruments of violence not overwhelm the uses to which they are put has served us well, therefore. We probably owe our survival to it.<sup>105</sup>

Gaddis notes that wars that occurred prior to the advent of the nation state were not Clausewitzian in the sense that the force was not the minimum necessary to achieve the objectives of the belligerents, that the wars were not tightly controlled. A number of military historians<sup>106</sup> hold that a Clausewitzian war is a modern construct, applicable to a particular form of social order, the social order of the nation state. Subnational groups such as terrorists are not likely to follow the same rules of behavior.

How will deterrence work against either states whom the U.S. has not in the past needed to deter and whose culture or values we do not understand (what would deter them)? How will it work against subnational groups? This latter question has been posed by ADM Richard Mies, commander-in-chief of the U.S. Strategic Command as, "How do you deter a non-state actor who has no return address?" and "How do you deter or dissuade someone whose reward is in the after-life?"<sup>107</sup>

Mies, in a speech to the Army War College, posited that the concept of deterrence should be broadened in the post-Cold War world to include policies and actions not normally considered as part of a military posture of deterrence. In particular, he stated that deterrence—mutual vulnerability and assured retaliation—must be broadened to include dissuasion, defense, and denial as well (the 4 Ds) and that incentives as well as penalties should be offered. "[D]eterrence alone won't suffice in this more unpredictable, multi-polar world." So, we must dissuade as well, prevent others doing their worst by engagement, whether by trade, diplomacy, or confidence building measures. In addition, some form of strategic defense is "both appropriate and inevitable." The fourth D is denial, "the prevention of aggression by our own or allied offensive actions—diplomatic, economic, and military—when all other means fall short." This is not preventive war, but, if necessary, preemptive war, one which can probably be carried out by precision conventional munitions.

(We must note that preemption against the early Soviet nuclear weapons program was discussed during the Truman administration and raised again during the Eisenhower years. It was obviously not implemented. The discussions that occurred have relevance today. They centered on the philosophical such as the morality of such an action as well as the more mundane such as the, then, relative lack of good intelligence of Soviet nuclear targets. Although we now have satellite surveillance and much better signal intelligence, the earlier debates on preemption are worth re-visiting should such a policy be debated anew.)

The 4Ds can be applied to proliferation of

- nuclear, chemical, and biological weapon
- means of delivery of these weapons

- hard, deeply buried targets
- asymmetric threats of wild cards and transnational terrorists

Mies went on to state that we need to examine these threats and hold their “centers of gravity” at risk.<sup>108</sup>

Amb. C. Paul Robinson in his address to the National Defense University also noted the need to broaden our past applications of deterrence theory to the new world. He stated, “I believe that the concept of deterrence is quite robust and is, at its heart, capable of sufficient complexity to be adapted as the preferred national and military strategy for whatever the future holds.” He posited that we can broaden deterrence by going back to the theories offered by Herman Kahn:

Kahn’s treatment of the abstract conflict spectrum led to the development of a generalized escalation ladder with 44 rungs—from an emerging crisis (in which political, economic, or diplomatic gestures are the appropriate response) all the way up to Insensate (unlimited, sustained) War. Our deterrence strategy for the future should be thought of as the appropriate steps the U.S. should take at any position on such an escalation spectrum in order to prevent war or, if fighting should break out, to be able to restore a stable peace at the lowest level of conflict....For any real or emerging conflict in which the U.S. becomes engaged, the fact of the U.S. powerful arsenal of nuclear weapons cannot be dismissed from the thinking of the potential adversary, nor in my mind should it ever be so. In the escalation metaphor of Herman Kahn, we should approach each policy, strategy, or tactical decision only in the context of seeking a “system solution” for the entire spectrum of possible future events. The existence of U.S. strategic or theater nuclear forces and highly capable conventional forces should give potential adversaries pause, and it is appropriate that we preserve ambiguity as to just what our response would be...

Doubtless the future will be far more complex than the past, but the U.S. deterrent strategy must be made the equal of that more complex world. We should attempt to integrate, by design, all of our military preparations and planning into a cohesive strategy to effectively deal with any contingency, *at any stage of escalation*. We must, in turn, take special care to be sure that our strategies are backed up by forces that are equally robust—survivable against the most aggressive attacks, even surprise attacks, and able to inflict either a very selective or a devastating retaliatory attack.<sup>109</sup> [emphasis in original]

Both Robinson and Rifkind hold that the nuclear stockpile should not be used as a deterrent solely against a future nuclear threat. Robinson stated that the burden of proof lies with those who advocate not deterring chemical and biological attacks with our nuclear arsenal to show that such attacks would be deterred by other means.<sup>110</sup> Rifkind does not believe in a declaration of “no first use” because “Put crudely, it implies, if it is believed, that conventional war is a safe option.”<sup>111</sup>

These thinkers all wonder, however, whether the existing stockpile, designed for particular missions against the Soviet Union, is the right stockpile for possible missions in the future. This

is not just a situation of having a missile MIRVed with high yield warheads when a single low yield weapon is what is desired to hold the “center” of some adversary at risk. It is broader than this. As Mies said, “...we need forces which are capabilities-based and effects-based rather than purely threat-based. Otherwise we run the risk of being self-deterred.”<sup>112</sup>

We need to implement a theory of deterrence for the more uncertain post-Cold War world. Since the collapse of the Soviet Union, India and Pakistan have overtly become members of the nuclear weapons club. Both of them as well as North Korea and Iran have tested fairly sophisticated missiles. Terrorists have used chemical weapons (Japanese subway attack) and large conventional explosives were used in the bombings of the World Trade Center in New York City, the Federal Building in Oklahoma City, the U.S. embassy in Kenya, and the USS Cole. China is modernizing its nuclear forces. All of these events show that, since the end of the Cold War, the world has become more uncertain and, to the average citizen, more dangerous. Each individual threat may be less than that posed by the two large stockpiles during the Cold War, but each individual threat now is not that much smaller from the standpoint of an individual—when one is killed or maimed, one is killed or maimed--and the threats come from more directions. From a societal survival standpoint, the threat today is less than that posed by global nuclear war. We need, however, to construct a new theory which addresses the new environment with new options for as Freedman has observed “If we have nothing sensible to do should deterrence fail, then deterrence will surely fail.”<sup>113</sup>

This discussion of the future of deterrence will end with several of Keith Payne’s thoughts. First, we must remember the uncertainty involved in deterrence, even with the best policies and plans.

This discussion arrives at the same destination as have virtually all empirical assessments of deterrence: understanding the opponent, its values, motivation, and determination, is critical to the success or failure of deterrence policies. Unless one is very lucky, in the absence of such an understanding, policies of deterrence sooner or later will fail. As the United States ponders policies of deterrence for the second nuclear age, the first positive step will be shedding the overconfident and naïve belief that “how to deter” can be known in practice with a high level of certainty, and that deterrence policies backed by nuclear threats will work in the future just as predictably and reliably as they are thought to have worked throughout the Cold War.

Rather, we should recognize that deterrence can fail, even when it “should” hold, and that in prospective WMD crises of the second nuclear age we may not have any confident basis for anticipating whether deterrence will, in fact, fail or hold.<sup>114</sup>

To continue to be able to deter potential enemies, then, the U.S. must come to understand them and discover what they value. Then, the U.S. can put that at risk to achieve deterrence. In addition, there is something else the U.S. must do—know its vital interests and not over-extend them.

The possible role for nuclear weapons in compensating for an apparent weakness of resolve points to one of the primary problems likely to confront U.S. deterrence policies in the second nuclear age: how to inspire the challenger to attribute resolve to U.S. deterrence commitments for nonintrinsic interests. Nuclear weapons may assist in presenting a fearsome threat, but empirical studies typically point to the requirement for a historical record of commitment to a state if threats on its behalf are to be judged as credible by challengers.<sup>115</sup>

We cannot simply state our commitments; the U.S. must demonstrate them, again and again, consistently. In the application of deterrence, Teddy Roosevelt is again correct: “Speak softly, but carry a big stick.”

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86. Kaplan, p. 317.
87. "Draft Memorandum from Secretary of Defense McNamara to President Johnson," Washington, December 6, 1963, No. 151, in Patterson, *1961-1963*, p. 549.
88. Kaplan, p. 318.
89. Steven J. Zaloga, *Target America: The Soviet Union and the Strategic Arms Race, 1945-1964*, Presidio Press, 1993, p. 216-217.
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92. *Policy for Planning the Employment of Nuclear Weapons*, National Security Council, NSDM-242, January 17, 1974, Washington, D.C.
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98. Herken, p. 319.
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100. Rifkind.
101. Schlesinger 1993, p. 11.
102. Schlesinger 1993, p. 11.
103. "Address by Secretary of Defense McNamara at the Ministerial Meeting of the North Atlantic Council," Paris, December 14, 1962, No. 120, in Patterson, *1961-1963*, p. 440.
104. Peter Grier, "The End of a Defense Doctrine," *The Christian Science Monitor*, July 7, 2000, p. 1.
105. John Lewis Gaddis, "Living in Candlestick Park," *The Atlantic Monthly*, April 1999.
106. See, for example, Martin van Creveld, *The Transformation of War*, The Free Press, New York, 1991.
107. Richard W. Mies, "Deterrence in the 21<sup>st</sup> Century," *Army War College Symposium*, December 8, 1999.
108. Mies.
109. Robinson.
110. Robinson.
111. Rifkind.
112. Mies.
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114. Payne, p. 117-118.
115. Payne, p. 141.

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## *Appendix A*

### *Deterrence: Caveats and Examples*

As discussed in Chapter 1, the practitioners of deterrence have valued nuclear weapons in that they argue that, in the Cold War, the weapons successfully deterred the major powers from engaging in war with each other, both nuclear and conventional.<sup>A1</sup> Deterrence, however, has not always worked in the past; elements of it have failed leading to overall failures of deterrent policies. With the changing world since the dissolution of the Soviet Union, with further proliferation of nuclear weapons, and with hostile actions and threats from non-state terrorists, the deterrent policy of the U.S. may need to adapt. To aid the reader in understanding why such an adaptation may be necessary, this appendix briefly presents elements upon which deterrence lies. Then, several historic examples of the failure of deterrence are given, examples in which one or another element has failed.

First of all, deterrence is not solitaire. At least two players are involved. The nuclear strategist Colin Gray has written “[A] relationship of deterrence...necessarily is cooperative.”<sup>A2</sup> There is a side that is deterring and a side (at least one) that is being deterred. One cannot exist without the other. Furthermore, deterrence requires an understanding by one side of the other. In its report in 1983 recommending the MX, the Scowcroft Commission wrote, “Deterrence is not an abstract notion amenable to simple quantification. Still less is it a mirror image of what would deter ourselves. Deterrence is the set of beliefs in the minds of the Soviet leaders, given their own values and attitudes, about our capabilities and our will.”<sup>A3</sup> Or, as Gray has written, “The quality of our forces for deterrence is decided abroad, not at home.”<sup>A4</sup>

Gray describes “the barest essentials of how mutual deterrence works....”

Two states or coalitions in a relationship of more or less acute political hostility

- reason consequentially and strategically in a rational manner about the probable implications of their behavior
- understand well enough their own and each other’s political wishes, policy goals, and domestic constraints
- are able to communicate intentions and anxieties in ways that will be understood accurately enough by the recipients
- will have operational control of the salient military forces
- will have military forces reasonably congruent with the scope and character of the contingent threats that are issued
- will not only understand each other’s positions, purposes, and general situation well enough, but also share some key values (e.g., abhorrence of war)<sup>A5</sup>

These are Gray’s elements of deterrence. Some are familiar to the reader, those dealing with military forces. Several of the others, particularly the more “people-oriented” ones may not be.

What does it mean to “reason...in a rational manner” or to “communicate intentions” or to understand the others’ wishes and values? It is these elements that are explored below.

## The Rational Actor

Deterrence theory, as well as almost all political economic analysis, requires the participants to be “rational actors.” Game Theory, conceived by John von Neumann, requires the participants to be “rational.” What does it mean to be a “rational actor?” Bruce Bueno De Mesquita is a prominent political scientist who consults for various government agencies. He has written extensively about the subject. In his book, *The War Trap*, he states:

[T]he leader is guided by a desire to maximize the net benefits he expects from his foreign policy choices. A policymaker will never choose an action that is expected to produce less value—or utility—than some alternative policy. In other words, the leader is assumed to be a rational utilitarian interested in maximizing his own welfare. His welfare, in turn, is assumed to be intimately tied to the overall costs and benefits imposed on the society by his foreign policy. The key leader would not, therefore, start a war or continue to fight in a war if he perceived the net expected result to be less than that of remaining at peace or surrendering to the adversary. Of course, this does not mean that he must expect his nation always to win its wars. Rather, he must expect it to win or at least not to lose more than the leader believed would be lost without the war.<sup>A6</sup>

He goes on to state that the goal of the rationality of political economists is that of expected-utility maximization. “This assumption is intended to convey the notion that choices between war and peace are made *as if* to maximize the strong leader’s welfare and, by assumption the welfare of those at whose pleasure the leader remains in a position of leadership.” [emphasis in original] Furthermore,

- “The rational actor always chooses the outcome he considers most desirable.”
- Rational behavior is not necessarily normal behavior. Rational behavior “simply implies that the decision maker uses a maximizing strategy in calculating how best to achieve his goals. The rationality assumption tells us nothing about how actors form their preferences but rather shows how actors behave, given their preferences.”
- Not all rational actors would choose the same actions—there is no objectively “best” choice. “Different individuals have different tastes or preference orderings, which will lead them to make different decisions, even though each of the decisions is rational.”
- “Not all rational actors respond to the same information in the same way.”<sup>A7</sup>

Thomas Schelling incorporates rationality in another way in his thinking. He holds that “reciprocal vulnerability” leads to deterrence:

Most of what we call civilization depends on reciprocal vulnerability. I am defenseless against almost everybody that I know, and while most of them would have no interest in harming me there must be some that would. I feel safer in an environment of deterrence than I would in an environment of defense. It is often said that terror is a poor basis for

civilization, and the balance of terror is not a permanently viable foundation for the avoidance of war. Fear can promote hostility, and fear can lead to impetuosity in a crisis. I agree, but I do not equate a balance of deterrence with a balance of terror, even though the roots of “deterrence” and “terror” are the same. Twenty years ago I wrote and still believe:

The extent of the “fear” involved in any arrangement—total disarmament, negotiated mutual deterrence, or stable weaponry achieved unilaterally by conscious design—is a function of confidence. If the consequences of transgression are plainly bad—bad for all parties, little dependent on who transgresses first, and not helped by rapid mobilization—we can take the consequences for granted and call it a “balance of prudence.”

People regularly stand at the curb watching trucks, buses and cars hurtle past at speed that guarantee injury and threaten death if they so much as attempt to cross against the traffic. They are absolutely deterred. But there is no fear. They just know better.<sup>A8</sup>

Hence, Schelling argues that they only know better because they assume that the drivers in the traffic, and the people waiting with them, are rational. Unfortunately, we all know of the stories when a driver is not, to our way of thinking, and drives into a crowd of pedestrians or a member of a crowd pushes someone out into traffic.

The historian John Lewis Gaddis, has noted:

Cold War statesmen behaved so rationally, in fact, that theorists today rely heavily on “rational choice” models in thinking about the future. “Realists” and “neo-realists” assume that states know their interests and will consistently pursue them; a few have even advocated the controlled proliferation of nuclear weapons....Political economists, assuming aggregate if not individual rationality, are confident that states contemplating war in a globally interdependent economy will find that they cannot afford it.<sup>A9</sup>

(We can note that the world’s economy was more interrelated, as measured by a percentage of the world’s GDP, in 1913 than it was in 1998. Prior to World War I, Norman Angell published *The Great Illusion* in which he argued that the economic conditions of interdependent trade made war unthinkable. “By impressive examples and incontrovertible argument Angell showed that in the present financial and economic interdependence of nations, the victor would suffer equally with the vanquished; therefore war had become unprofitable; therefore no nation would be so foolish as to start one.”<sup>A10</sup>) Gaddis goes on to remind readers that our experience with “rational actors” on the political stage has almost always been with leaders of nation states. That probably will not be the situation in the future, and we do not know if those leaders will be “rational.”

In fact, the whole concept of the “rational actor” is being challenged by some political scientists.<sup>A11</sup> To get away from that argument, Keith Payne, a nuclear strategist, would rather not get bogged down into defining what is rational, particularly when it involves trying to decipher the thought process and the values of the opposition. Rather he thinks about “being ‘sensible’ or ‘reasonable.’” He goes on to write

Rational refers to a method of decision-making: taking in information, prioritizing values, conceptualizing various options, and choosing the course of action that maximizes value. In contrast, sensible refers to whether one is perceived as behaving in ways that are understandable to the observer, and may therefore be anticipated. This may involve having goals, a value hierarchy, and behavior patterns that, if not shared, are familiar to the observers. One can be quite rational within one's own decision-making framework, yet be grossly outside the observer's understanding or norm. One can be quite rational within one's own framework of values, but be viewed as unreasonable and not sensible by an opponent.<sup>A12</sup>

Barbara Tuchman studied similar political behavior. Some of what many have dubbed "irrational" or "unreasonable" behavior on the part of rulers and governments, Tuchman has called "folly."

A phenomenon noticeable throughout history regardless of place or period is the pursuit by governments of policies contrary to their own interests. Mankind, it seems, makes a poorer performance of government than of almost any other human activity. In this sphere, wisdom, which may be defined as the exercise of judgment acting on experience, common sense and available information, is less operative and more frustrated than it should be. Why do holders of high office so often act contrary to the way reason points and enlightened self-interest suggest? Why does intelligent mental process seem so often not to function?

She wrote that misgovernment is of "four kinds." First, there is tyranny or oppression. Second, there is excessive ambition. Third, there is incompetence or decadence. And, fourth, there is folly or perversity. Part of how she defined folly is not applicable here in that her study dealt with policies of governments (individual rulers were excluded) that "...persist[ed] beyond any one political lifetime."<sup>A13</sup> But, "folly" is akin to irrational or unreasonable behavior. The actions are deemed inexplicable from the outside looking in, not from the inside itself.

Hence, although one can argue about what word or phrase can best describe such actions, the basic problem remains. One still needs to discern how the other side will act to know whether a particular strategy will deter. It does not make much difference if we say that a particular unexpected action is irrational for the other person, is unreasonable from our perspective, or is pure folly. In any case, the action was not anticipated and definitely not deterred.

### *Honor*

Another very brief point to make is that sometimes people and nations do things that have nothing to do with maximizing utility functions, that are not "rational." In a conclusion to his insightful opus, *On the Origins of War and the Preservation of Peace*, Donald Kagan observes "The reasons for seeking more power are often not merely the search for security or material advantage. Among them are demands for greater prestige, respect, and deference, in short,

honor.”<sup>A14</sup> On the other hand, if a nation is not seeking to increase power, it may still not be deterred. “[T]he intended deterrees may decide that national death is preferable to dishonor.”<sup>A15</sup>

Hans Morgenthau wrote, in *Vietnam and the United States* (1965), “The prestige of a nation is its reputation for power. That reputation, the reflection of the reality of power in the mind of the observers, can be as important as the reality of power itself. What others think about us is as important as what we actually are.”<sup>A16</sup>

This is all abstract in this day and age; most of Kagan’s examples date to earlier ages. Has anyone fought a war for honor recently? Yes, many would argue that Japan did in World War II. As Payne notes:

At roughly the point when Prime Minister Tojo Jideki told the Japanese emperor, “Our empire has no alternative but to begin war,” Assistant Secretary of State Acheson was advising the president persuasively that war was unlikely because “no rational Japanese could believe an attack on us could result in anything but disaster for his country.” As Acheson’s statement suggests, the U.S. policy of attempting to coerce the Japanese out of China via an oil embargo was based on an assumption that the Japanese leadership would concede to U.S. demands rather than risk battle with a foe whose economic and military potential was so much greater than its own. Clearly Acheson’s expectations were only half right: the attack on Pearl Harbor did ultimately bring disaster to Japan, but Japanese leaders nevertheless ordered the attack.<sup>A17</sup>

Prior to the Pearl Harbor attack, Admiral Yamamoto had told the Japanese Privy Council that the Japanese Navy would have much freedom in the Pacific for awhile after which it would be unable to halt the U.S. buildup. He said, “If I am told to fight regardless of the consequences, I shall run wild for the first six months or a year, but I have utterly no confidence for the second or third year.”<sup>A18</sup> Still, the Japanese government preferred the probability of ruin to the certainty of dishonor, in its culture, if it acceded to the U.S. demands over China.

Today honor continues to play a role in international relations. One can argue that a major factor in the decision of India to test its atomic designs in 1998 was a point of honor. It wished to shed the image of being a colony and to be considered to be a major, if not a great, power, commensurate with its history, culture, and population. For several decades, it has wanted to attain a permanent seat on the U.N. Security Council and to be a prominent player in arms control negotiations. Call it a sense of patriotism or cultural pride, but the concept is one of honor. (Pakistan followed suit with its own overt tests more because of its dynamics with India and less because of a point of honor in the international arena.)

Another situation where honor is evident in the international relations of today is that of Russia. As the dominant member of the Soviet Union, it used to be a great power, principally because of its military might and leader of one side of the Cold War. It lost that war, and the Soviet Union dissolved. Russia still wants to be taken seriously. Witness its need to be included as the 8<sup>th</sup> country in the G8 economic talks although its economy is not anywhere near being the 8<sup>th</sup> largest in the world. The symbol of its might remains its nuclear weapons, and the U.S. must realize

that any negotiations with Russia about them is more than just about weapons, powerful though they may be. Such talks involve the Russian “manhood”—its honor.

It is just not the Greeks and Romans who esteem honor, but honor is one of those concepts that is difficult to quantify when trying to evaluate how a country might “maximize its utility.”

### *Perceptions and Understandings*

Several strategic thinkers have been quoted concerning the importance of how actions are perceived by the potential deterree. This section develops this idea, followed by examples of failures to deter due to misperceptions and misunderstandings. Because deterrence is a “dance” for at least two participants (in Payne’s somewhat whimsical description), failures of the deterrent message cause failure of deterrence irrespective of the might of the deterrent forces.

The importance of perceptions was recognized early. Paul Nitze composed NSC-68, which was presented to Truman in the spring of 1950. He recognized that “the enemy’s perception of American strength and will was as important as their reality in the great power game.”<sup>A19</sup> The importance of perceptions has also been recognized by political craftsmen such as Nixon. At the height of Syria’s attempted overthrow of King Hussein of Jordan in 1970, he said that “it would not be such a bad thing if the Soviets believed he was capable of irrational action.”<sup>A20</sup> “Perceptions are often everything in crises...”<sup>A20</sup>

Other commentators have noted that U.S. discussions about deterrence abound with confidence and precision. “[I]t should be recognized that such claims reflect considerable hubris with regard to their understanding of how to deter.”<sup>A21</sup>

### *Additional Historic Examples*

As mentioned, it is arguable, but not strictly demonstrable, that deterrence worked during the Cold War. There have been many failures of deterrence, however, throughout history. Following are a few examples of such failures.

The onset of the European theater conflict in World War II had failures of understanding of the other side. The appeasement strategy of Neville Chamberlain toward Adolf Hitler was based on a misreading of Hitler, and Hitler’s strategy was also based on a misreading of the British and the French. They had different frames of reference and different values.

[I]n 1939 Adolf Hitler could not understand the genuineness and depth of the British and French distress over his sequential destruction of the former Czechoslovakia. Similarly, he could not even begin to understand why foreign statesmen should be upset over his breaking of his apparently solemn word. When you do not care about small countries and when you view words (promises) merely as diplomatic weapons, it is all but impossible to empathize with people who approach matters differently. For the other side of the coin, it is understandable that British and French leaders in 1938 and 1939 failed to

realize that they were endeavoring to cope with a German statesman who actually wanted war. Hitler did not want to have to wage a two-front war, but he was determined to secure his objectives by force. The Munich agreement came as a bitter disappointment to him when he found himself negotiated out of a short, limited, and victorious war....<sup>A22</sup>

The British assumed that Hitler would be “rational” or “sensible” and would behave accordingly. Hitler also assumed that the British and French would be “rational” or “sensible” and also behave accordingly. Unfortunately, both viewed what was “rational” or “sensible” from their own set of values and not from the perspective of the other. But, Hitler wanted a war, and with that war, Britain and France would honor their agreement with Poland when it was attacked, and declare war on Germany as the aggressor. In Hitler’s worldview, honoring such an agreement was not a rational thing to do. In the British and French worldview, starting a war was not a rational thing to do.<sup>A23</sup>

Failures have also arisen due to the misinterpretation of “signals” one side has sent another. The message received was not the message meant to be delivered. One such failure is explored in depth by Kagan and resulted in the Second Peloponnesian War when Athens’ actions failed to deter, first Corinth, and then its “big brother” (leader of its alliance) Sparta. Kagan argues that Pericles, the ruler of Athens, tried to be too clever in the “messages” he sent to Corinth and Sparta, which were first sending a small portion of its fleet, which was defeated, and then laying siege to a minor opposition alliance member, which provoked the entire opposing alliance,

If the Corinthians were led astray by the passion for vengeance and the Spartans by jealousy and fear, the Athenians may have suffered from an excess of reasoned calculation. Pericles’s diplomacy counted on the Spartans to see Athenian actions as what he intended—moderate responses to provocations—responses meant not to bring on war or challenge Spartan leadership, but to deter war and preserve the status quo. He counted on equally cool calculation, first on the part of the Corinthians, then of the Spartans, but passion proved stronger. Their decisions should not be seen as miscalculations, for that implies a simple error of judgment. In both cases passion, for honor in the form of revenge for the Corinthians, for the Spartans in the shape of defense of their allies, and for the Spartans also the passion of fear, were stronger than interest, reasonably understood....

The problem facing the Athenians was very difficult and the resources available to them limited. They needed to deter the Corinthians from creating a dangerous crisis in such a way as to avoid frightening and angering the Spartans, because they lacked the military power to deter Sparta effectively. In the end, they failed to deter the Corinthians, and yet they frightened and angered the Spartans. One Athenian’s error lay in making inadequate allowance for the role of such passions as fear and anger in important decisions. A policy of deterrence can work even where passions reign, but to be effective it must counterbalance passion with passion, fear with fear. Athens’ best chance of deterring Corinth would have been to make a clearer and larger commitment. Perhaps a full offensive and defensive alliance such as the Corcyraeans proposed would have convinced the Corinthians that Athens was serious. It is far from clear that it would have brought Sparta into the war more quickly. If the Athenians had sent an armada to Sybota instead

of ten ships, that would surely have prevented the battle and might have compelled the Corinthians to put off their hopes for revenge against Corcyra entirely. If that had led to a battle the result would have been the destruction of Corinth's fleet and the end of its challenge to Corcyra. Such an outcome need not have brought Spartan involvement in the conflict; it might well have discouraged it. In any case, the outcome could not have been worse than what happened....<sup>A24</sup>

What happened was a war lasting nearly thirty years ending in a victory for Sparta.

The 20<sup>th</sup> Century has given us a number of additional examples of diplomatic misunderstandings leading either to unexpected conflict or to unplanned changes in the direction of that conflict. These misunderstandings can result from the inability to see the world from another's perspective or from communication failure, whether they arise from the "fog of war" or from missed signals.

One misunderstanding primarily resulting from psychological rigidity concerns the start of the Russo-Japanese War in 1904.

Tsar Nicholas clearly discounted Japanese expressions of concern regarding Russian expansion into Korea, in part because he simply denied the possibility that Japan, a non-European power, would dare to challenge Russia. He held the Japanese in particular contempt, as did many of those providing him with advice on the dispute with Japan over Korea. This view led the tsar to deny the possibility of a Japanese attack because it simply did not fit his disdainful view of Japan. When told of Japanese preparations for war by Kaiser Wilhelm II in November 1903, Tsar Nicholas reportedly replied that "there would be no war, because he did not wish it." He appears to have felt at liberty to antagonize Japan by declaring the disputed areas of Port Arthur and territory on the Liaotung Peninsula a viceroyalty of the Russian Empire. Consequently, he was shocked by Japan's 6 February attack on Port Arthur, despite ample warnings of Japan's frustration with Russia's stalling in negotiations and a growing Japanese inclination to resolve the dispute militarily.<sup>A25</sup>

He was probably even more shocked when his Baltic fleet, sent halfway around the world to fight the Japanese, was crushed in the Battle of Tsushima, May 27-29, 1905, with little Japanese loss. Two-thirds of the fleet was sunk, and six ships were captured.

As Payne points out, "bolstering" can also lead to, what looks from the outside, inexplicable decisions or acts, and not knowing the other side prohibits taking this into consideration prior to the decision or act. Payne writes:

[Bolstering] is the psychological tendency of decision-makers who are compelled to choose from several unsatisfying courses to select the least miserable, to minimize its possible negative consequences, and to exaggerate its positive attributes. The possibility for unwarranted overconfidence on the part of desperate leaders as a result of this psychological mechanism is obvious....

A possible example of how psychological defense mechanisms and misperceptions of an opponent's likely behavior can impair decision-making may be demonstrated by Kaiser Wilhelm II's behavior in 1914. The Kaiser hoped and believed that Britain would not participate in the Entente against Germany if the crisis between Germany's ally Austria-Hungary and Serbia—set in motion by the 1914 assassination of the Austrian archduke [and heir to the throne], Franz Ferdinand—escalated. He hoped and believed that Britain would at worst be neutral: this had become accepted wisdom in Berlin. On the calculation that a war could be so localized, and in loyalty to the assassinated archduke, Germany pressed Austria-Hungary toward an aggressive approach toward Serbia, and the Kaiser issued a sacred pledge of support...to Austria-Hungary. Cables identifying Britain's likely involvement as a belligerent against Germany from the iconoclastic German ambassador in London, Prince Karl Max Litchnowsky, were edited and largely discounted until very late in July in favor of the accepted wisdom.

When, on 30 July, the Kaiser no longer could deny the actual British direction in the now-boiling crisis, he appears to have been overcome with anxiety, despair, and bouts of aggressiveness. He spoke of holding the line, "whatever the cost," and wrote that evening of the coming conflict as if it had been forced upon him. He writes, as consolation for his pessimistic expectations for Germany, "If we are to bleed to death, England will at least lose India." The Kaiser's cognitive process and behavior do not appear to conform well to the specifications of deterrence theory, with its assumption of clearheaded, informed, and rational cost-benefit calculations. Nevertheless, the Kaiser's behavior clearly helped to steer Germany's ill-fated course into World War I.<sup>A26, \*</sup>

A further misunderstanding of motives occurred at the beginning of World War I. Tsar Nicholas II was crowned as more than a political sovereign, the "Tsar of all the Russias" as his oath stated. At coronation, he also swore to be the defender of the Orthodox Church (some looked to Moscow as the third Rome, after Rome itself and then Constantinople). As defender of the church and to maintain his legitimacy, he needed to defend Orthodox Serbia. This aspect of his reign was not fully understood by those in Central and Western Europe.<sup>A27</sup>

Deterrence can fail because the deterrence is not all-encompassing. Much has been written about the failure of the French Army and Air Force in World War II. Cohen and Gooch call it a "catastrophic failure."<sup>A28</sup> For present purposes, remember that the Maginot Line did not deter. In fact, one could argue that it also was not defeated. It was made irrelevant by a strategy—an "end run" through the Ardennes--that made it superfluous, and the decay of the armed forces--leaders, strategists, intelligence, and men--assured defeat. The Maginot Line did not extend to the Ardennes because that would have given the appearance of the French defending themselves against the Benelux countries, although in August 1914, Germany had attacked France through them. (One can also argue that the French in the interwar years were self-deterred in their strategic thinking by the horrors of World War I.)

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\* For a detailed history of German/British relations in the thirty years prior to World War I, the psychological frailty of the Kaiser, his ambivalence toward the British (from gushing adoration to deep loathing), and the anatomy of an arms race, refer to Robert K. Massie, *Dreadnought: Britain, Germany, and the Coming of the Great War*, Random House, 1992.

Perhaps the bombing of cities in World War II would have occurred anyway, but the way it started was a result of the “fog of war” and misunderstood signals. Sallagar of RAND performed a comprehensive study on the subject of escalation during World War II. His narrative concerning the start of the deliberate targeting of city centers shows that, during the Battle of Britain, the initial Luftwaffe bombing of London was accidental and not intentional. In fact, the Luftwaffe chain of command as well as Hitler probably did not even know it had occurred. The Brits, not knowing this, responded with bombing attacks on Berlin.

In the night of August 24, 1940, about a dozen German aircraft dropped bombs on Greater London. The City itself was hit for the first time since 1918, fires were started in several suburbs, and many homes were destroyed in Bethnal Green. Inasmuch as Hitler had given strict orders against bombing London without his express permission, the crews must have done it unintentionally.

The incident occurred at the start of an intensified round-the-clock air offensive, during which the night bombers were to attack RAF installations and aircraft factories. The targets for that night included factories at Rochester and Kingston and oil tanks at Thameshaven, all in the vicinity of London. Some of the crews assigned to these targets may have made a navigating or bombing error—not unusual in night operations—and dropped their bombs on the city itself.\*

Considering the importance of this incident, and its subsequent repercussions, it is remarkable that, with a single exception, none of the German sources consulted for this narrative even so much as mentions the first bombing of London. It is possible, of course, that the crews responsible for the error did not know what they had bombed, or that they were afraid to report it.... It is also possible that the German records deliberately omitted the incident or, if they did describe it, that the records themselves were destroyed. None of this explains, however, why this crucial event is not mentioned by postwar German historians who have had access to the British sources that deal with the incident and who list these sources...

At the time it happened, the British could not have known that the bombing of London was an accident; they must indeed have assumed that it was deliberate.... Churchill reports: “The War Cabinet were much in the mood to hit back, to raise the stakes, and to defy the enemy. I was sure they were right, and believed that nothing impressed or disturbed Hitler so much as his realisation of British wrath and will-power.”

On August 25, the day after London had been bombed, the British did hit back by attacking Berlin...<sup>A29</sup>

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\* Sallagar comments in a foot note that the Brits were employing electronic countermeasures against the German “Knickebein” radio beam used for night navigation and observes that it would be ironic if the countermeasures were the cause of the navigational error.

Hitler, now thinking that the British had escalated the air war, ordered the deliberate bombing of British cities. "...Hitler's decision to "rub out" British cities also marked the abandonment of his last restraint, and introduced a new level of violence, which was to be surpassed only in scale but not in kind. As the ultimate step in the process of escalation, it was comparable to what, in a future war, would be a decision to launch intercontinental ballistic missiles against the opponent's capital."<sup>A30</sup>

As an additional example of misunderstandings, the U.S. policy in Vietnam contained numerous "signals" to North Vietnam concerning U.S. resolve such as troop deployments and specific bombing campaigns. This policy was praised by a number of the nuclear strategists as being in keeping with their theory for deterrence and flexible response. Both Thomas Schelling and Herman Kahn supported the "exemplary" communication of threats by the U.S. It is arguable that North Vietnam did not receive the message about the resolve and only received the message about limiting the war.<sup>A31</sup>

Misunderstanding the motives of Anwar Sadat, not understanding his values and needs, almost cost Israel its existence. The failures of the Israeli Defense Forces in October 6-9, 1973 were "...the products of a failure to think though the many dimensions of a changing strategic challenge. By confining their implicit net assessment to only one level of military effectiveness—essentially, the tactical dimension of warfare—...the IDF set itself up for a calamity."<sup>A32</sup> What were the other dimensions of military effectiveness? Sadat was not seeking a military victory, per se. He had other objectives, more strategic/political.

First and foremost, Sadat thought it essential to break a diplomatic stalemate intolerable for Egypt (and his own position as president); by the very act of opening fire the deadlock would break, and fluidity would return to Middle Eastern politics. Anything short of a catastrophic Arab failure, and perhaps even that, would force the United States and the Soviet Union to renew the quest for a Middle East settlement. Sadat's second set of objectives emerged from his reading of Arab and Israelis psychology. Egypt had to purge itself of those complexes—'whether defeatist "inferiority" ones or those born of suspicion and hate'—brought about by mortifying Israeli victories. If Egypt could seize and retain even a morsel of Sinai, Sadat thought, its-self-confidence and self-respect would return and its honor be redeemed. The preconditions on the Egyptian side for a settlement with Israel would then exist.

But Sadat thought it equally or more important to destroy through war what he termed the "Israeli Security Theory." In the Egyptian view, this theory consisted of five propositions: Israeli military and technological superiority must convince the Arabs that they could not achieve their objectives by force; in the event of war Israeli mobility and internal lines, coupled with Arab disunity, would allow Israel to concentrate her forces against one opponent at a time; Israel must immediately move a war into Arab territories; a war could not be permitted to last more than a week; Israel could not tolerate high losses. Sadat believed that the breaking of this theory required that the Arabs convince their opponent that "continued occupation of our land exacts a price that is too high for him to pay, and that consequently his theory of security—based as it is on psychological, political, and military intimidation—is not an impregnable shield of steel which could

protect him today or in the future.” This could be achieved only by “*inflicting the heaviest losses on the enemy.*” [emphasis in Sadat’s original writing]...Sadat had shrewdly formulated intangible war objectives—the smashing of an enemy’s theory, the resurrection of Egyptian pride, and the alarming of the superpowers—although they could require, as he well knew, massive blood shed. He did not command his armed forces to seize all or even most of the Sinai by force: Indeed, he would content himself with very limited territorial gains, provided Israel suffered enough in battle.<sup>A33</sup>

The Israelis had a failure to anticipate because they thought a war would be about defeating the other side’s military on the field, but Egypt fought with different rules, with the winner for them being decided in a totally different way.

It is difficult to find examples of successful deterrence for in order to do so, one must prove a negative—these countries *did not fight* each other because they deterred one another. It is far easier to find cases of the positive—these countries *did fight* each other because they failed to deter one another. Some hold that the resolution of the Cuban Missile Crisis demonstrated the success of deterrence. Others disagree, particularly with several decades of hindsight and changing views towards defense issues in general and nuclear weapons in particular. Much has been written about this, and a detailed discussion will not be attempted here. An entire volume of the Foreign Relations of the U.S. is devoted to the crisis (David S. Patterson, Gen. Ed., *Foreign Relations of the United States--1961-1963, Volume XI: Cuban Missile Crisis and Aftermath*, U.S. Department of State, U.S. Government Printing Office, Washington DC, 1996.) Other books span the decades from Robert Kennedy’s *13 Days*, reprinted in 1999 (paperback, Dutton/Plume, December 1999) to the publications of the transcripts of taped discussions (Ernest R. May (Editor) Philip D. Zelikow (Editor), *The Kennedy Tapes: Inside the White House During the Cuban Missile Crisis*, Harvard University Press, July 1998). In addition, there have been several seminars involving still-living participants from all sides during the past decade. For the purposes of this primer, a detailed discussion and dissection of the Missile Crisis is not needed. For a short overview of the crisis that touches on the main points, we include this description from the on-line Encyclopedia Britannica (<http://www.britannica.com/bcom/eb/article/4/0,5716,28554+1+28105,00.html>)

Having promised in May 1960 to defend Cuba with Soviet arms, the Soviet premier Nikita Khrushchev assumed that the United States would take no steps to prevent the installation of Soviet medium- and intermediate-range ballistic missiles in Cuba. Such missiles could hit much of the eastern United States within a few minutes if launched from Cuba. The United States learned in July 1962 that the Soviet Union had begun missile shipments to Cuba. By August 29 new military construction and the presence of Soviet technicians had been reported by U.S. U-2 spy planes flying over the island, and on October 14 the presence of a ballistic missile on a launching site was reported.

After carefully considering the alternatives of an immediate U.S. invasion of Cuba (or air strikes of the missile sites), a blockade of the island, or further diplomatic maneuvers, President John F. Kennedy decided to place a naval "quarantine," or blockade, on Cuba to prevent further Soviet shipments of missiles. Kennedy announced the quarantine on October 22 and warned that U.S. forces would seize "offensive weapons and associated

matériel" that Soviet vessels might attempt to deliver to Cuba. During the following days, Soviet ships bound for Cuba altered course away from the quarantined zone. As the two superpowers hovered close to the brink of nuclear war, messages were exchanged between Kennedy and Khrushchev amidst extreme tension on both sides. On October 28 Khrushchev capitulated, informing Kennedy that work on the missile sites would be halted and that the missiles already in Cuba would be returned to the Soviet Union. In return, Kennedy committed the United States never to invade Cuba. Kennedy also secretly promised to withdraw the nuclear-armed missiles that the United States had stationed in Turkey in previous years. In the following weeks both superpowers began fulfilling their promises, and the crisis was over by late November. Cuba's communist leader, Fidel Castro, was infuriated by the Soviets' retreat in the face of U.S. power but was powerless to act.

The Cuban missile crisis marked the climax of an acutely antagonistic period in U.S.-Soviet relations. The crisis also marked the closest point that the world had ever come to global nuclear war. It is generally believed that the Soviets' humiliation in Cuba played an important part in Khrushchev's fall from power in October 1964 and in the Soviet Union's determination to achieve, at the least, a nuclear parity with the United States.

During the crisis, Kennedy had formed a small team of advisors, dubbed the Ex Comm, to discuss options for him (and it was their deliberations which were secretly taped—only the Kennedy brothers knew of the taping). “Nearly a generation later, the principal members of the Ex Comm would conclude that the chief lesson learned from the experience concerned how little America’s unquestioned nuclear superiority had counted in the showdown with Russia.” McNamara would comment, “Nuclear played a zero role in Cuba.”<sup>A34</sup> This is the opposite of what he believed at the time (see Section 4 above). It seems strange for a participant to now say that a crisis that started with the deploying of Soviet nuclear weapons and ended with their withdrawal and involved a secret understanding of withdrawal of U.S. nuclear weapons from the border of the Soviet Union did not have the nuclear equation on its horizon. And, if the nuclear balance played no part in 1962, why then did the Soviet Union substantially build up its nuclear forces to reach parity?

On the other hand, Burr argues that the nuclear equation was certainly in the back of Khrushchev’s mind during the Berlin crisis of 1958-1962, with the concomitant issue of the U-2 overflights. The nuclear balance likely tempered some of the Soviet actions, provocative as they still were.<sup>A35</sup>

The “people aspects” of deterrence, however, may not be quite as important when nuclear weapons are the deterrent weapon. When it comes to their deterrence value, some have argued that knowledge of the potential deterree is not that important because of the damage they can cause. Discussing that argument, the British nuclear strategist Lawrence Freedman writes “[D]eterrence is about risk rather than certainty. It can operate even if the possibility of nuclear use is extremely small, given that the consequences of use would be so horrendous...[T]he mere existence of nuclear weapons constitutes sufficient risk.”<sup>A36</sup> For non-state actors, this may not be a factor. As noted in Section 3 of the main report, ADM Mies, commander-in-chief of the U.S. Strategic Command, has said “How do you deter a non-state actor who has no return address?”

and “How do you deter or dissuade someone whose reward is in the after life?”<sup>A37</sup> The horrific consequences of nuclear retaliation may not apply in the same way to a non-state actor as to a nation state.

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## *Appendix B*

### *Some Important Contributors to Strategic Nuclear Thinking*

Many individuals have made significant contributions to strategic nuclear policy during the past fifty-five years as theoreticians, scientists, politicians, and members of the military. This appendix presents short discussions of some of the most noted. Most of the material is taken from encyclopedias and other general reference books such as *Who's Who*. In addition, Richard Rhodes' two books, *The Making of the Atomic Bomb* (1986) and *Dark Sun: Making of the Hydrogen Bomb* (1995), and David Holloway's *Stalin and the Bomb* (1994) were also valuable. The contributors are generally presented in chronological birth order. We also will present more detail on one aspect of George Kennan's career that bears on nuclear strategy in that we believe our research gives a new perspective on the sequence of a few events in early 1950, when Truman made the decision to proceed with the thermonuclear weapon research and development and NSC-68 was written.



**Dulles, John Foster** (1888-1959) — Secretary of State for Eisenhower, 1953-59, and architect of many elements of U.S. foreign policy in the Cold War. Earlier relatives of Dulles were Secretaries of State for Benjamin Harrison and Woodrow Wilson. His brother, Allen, was head of the CIA. Dulles served on Wilson's staff at the Versailles Peace Conference and was a delegate for Roosevelt at the San Francisco Conference that established the United Nations. He was a passionate anti-Communist, which was at least partially based on being the son of a Presbyterian minister and having a deep religious faith. Dulles believed that the basic differences between the U.S. and the Soviet Union were the differences between good and evil, and hence viewed anti-Communism as a moral crusade.

Dulles practiced a type of diplomacy described as "brinkmanship." In the mid-50s he wrote an article in which he said, "If you are afraid to go to the brink, you are lost." In a January 1954 speech, he outlined the policy of "massive retaliation" in which a U.S. response to aggression would be "at places and with means of our own choosing." Many commentators took this to mean retaliation with nuclear weapons, although the speech never specifically mentioned using them. Generally, people have viewed this policy as holding Soviet homeland targets at risk for Soviet aggression of any kind anywhere in the world. Eisenhower and Dulles believed that relying on nuclear weapons could reduce conventional force size and cost. Dulles championed policies in favor of a European army, believing that Europe was "the world's fire hazard," but when France balked, he avoided a crisis by winning the admission of the Federal Republic of Germany into the NATO military alliance.



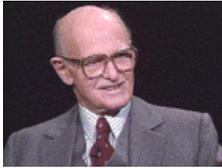
**Burke, Arleigh** (1901-1996) — A distinguished naval commander during World War II who was promoted to Chief of Naval Operations (CNO) in 1955 over 92 more senior admirals as a reward for his skills in leadership and strategic planning. He served an unprecedented three terms as CNO, until 1961, and oversaw the modernization of the Navy, adapting it to the nuclear age with the design, development, and launching of the first Polaris submarines. He argued successfully for including the Navy in nuclear war planning, which directly led Eisenhower to create the Joint Strategic Target Planning Staff (JSTPS) and the first Single Integrated Operational Plan (SIOP). Burke's career was temporarily stymied when he became part of the so-called "admiral's revolt" in the late 1940s, wherein he questioned the growing dominance of the Strategic Air Command. He fought so hard for a strong Navy that he was temporarily taken off the promotion list. ADM Burke was awarded the National Medal of Freedom in 1977.



**Oppenheimer, J(ulius) Robert** (1904-1967) — A theoretical physicist and director of Los Alamos during the Manhattan Project and director of the Institute of Advanced Study at Princeton University thereafter. He did his undergraduate work at Harvard and his graduate work at the Cavendish Laboratory at the University of Cambridge and Gottingen University, where he received his doctorate. In Europe, Oppenheimer worked with physicists such as Lord Rutherford, Niels Bohr, Max Born, and Paul Dirac. He then taught physics at the University of California, Berkeley, and Cal Tech where he stayed until chosen to be the scientific head of the Manhattan Project. His work with the project entailed administering the program at Los Alamos, technically leading the research and development, and interacting with the Engineering Corps as well as personnel at Oak Ridge, Hanford, and the rest of the weapons complex. It was Oppenheimer who chose the location of the laboratory at Los Alamos since he had visited northern New Mexico often and owned land near Pecos, New Mexico. Oppenheimer personally recruited most of the scientists that staffed Los Alamos, many of whom he had taught in college. His scientific contributions prior to the Manhattan Project include research into subatomic particles and cosmic rays. Oppenheimer's teams at Los Alamos produced two successful weapon designs: a "cannon" Little Boy using enriched uranium 235, which was never tested until dropped on Hiroshima, and an implosion Fat Man using man-created plutonium, which was tested on July 16, 1945 at White Sands, New Mexico and dropped on Nagasaki.

After World War II from 1947 to 1952, Oppenheimer served as chairman of the General Advisory Committee of the Atomic Energy Commission (AEC), which in 1949 opposed the development of the hydrogen bomb. As chairman, he argued for producing many small atomic weapons, which would come to be called "theater" and "tactical" nuclear weapons, instead of pursuing the large hydrogen bomb. His loyalty was called into question during this time of espionage revelations and wide-ranging and intensive investigations of many individuals. In the

1930s, he was a member of the Communist Party for a brief period but left it when the purges by Stalin began. A security hearing found him not guilty of treason but ruled that he should no longer have a security clearance. This ruling led to the cessation of his advising the AEC. President Johnson awarded him the AEC Enrico Fermi Award in 1963.



**Kennan, George F.** (1904- )—U.S. diplomat most noted for analysis of the Soviet Union that led to his arguing for a policy for its containment and, from a nuclear strategy perspective, for heading the policy-planning staff at the State Department between 1947 and the beginning of 1950. Kennan entered the foreign service in 1925 and served in Geneva, Berlin, Tallinn, and Riga prior to the U.S. recognition of the Soviet Union in 1933 when he was first posted to the Soviet Union. After several other postings, he was back in Moscow at the end of World War II, and it was from there in February 1946 that Kennan sent a cablegram enunciating the containment policy. Later that year he returned to the United States, and in 1947 he was named director of the State Department's policy-planning staff.

Kennan's views on containment were publically presented in a famous and highly influential article, signed "X," that appeared in *Foreign Affairs* magazine in July 1947 and that analyzed in detail the structure and psychology of Soviet diplomacy. In the article Kennan questioned the wisdom of the United States' attempts to conciliate and appease the Soviet Union. He suggested that the Russians, while still fundamentally opposed to coexistence with the West and bent on worldwide extension of the Soviet system, were acutely sensitive to the logic of military force and would temporize or retreat in the face of skillful and determined Western opposition to their expansion. Kennan then advocated U.S. counterpressure wherever the Soviets threatened to expand and predicted that such counterpressure would lead either to Soviet willingness to cooperate with the United States or perhaps eventually to an internal collapse of the Soviet government. This view subsequently became the core of U.S. policy toward the Soviet Union. The counterpressure most often took the form of political, economic, and military assistance to countries facing Soviet pressure, but it also included covert operations and an attempted rollback of the Soviet expansion itself into Eastern and Central Europe. Kennan was at the forefront of the creation of the government agency that would eventually become the Directorate of Operations within the Central Intelligence Agency (see Peter Grose, *Operation Rollback: America's Secret War Behind the Iron Curtain*, Houghton Mifflin, 2000).

Kennan accepted appointment as counselor to the State Department in 1949, but he resigned the following year to join the Institute for Advanced Study at Princeton. He would later serve as ambassador to both Moscow and Yugoslavia. As noted in Chapter 2, Kennan's departure as head of the Policy Planning Staff in early 1950 meant that Paul Nitze, not Kennan, headed the effort of formulating NSC-68, and different people and sources whom we have consulted describe the departure differently, specifically as to whether Kennan did so in disagreement with Truman's decision to proceed with thermonuclear bomb research and development. To perhaps put the matter to rest concerning this bit of history, we will discuss these events in some detail.

We have perused a number of primary documents found in the publications of the U.S. State Department and can be found in

S. Everett Gleason and Fredrick Aandahl, Gen. Ed., *Foreign Relations of the United States 1950, Vol. I, National Security Affairs; Foreign Economic Policy*, Government Printing Office, Washington, D.C. 1977.

Fredrick Aandahl, *Foreign Relations of the United States 1949, Vol. I, National Security Affairs; Foreign Economic Policy*, Government Printing Office, Washington, D.C. 1976 (noted as Aandahl 1949 below).

Fredrick Aandahl, Gen. Ed., *Foreign Relations of the United States 1950, Vol. II, The United Nations; the Western Hemisphere*, Government Printing Office, Washington, D.C. 1976 (noted as Aandahl 1950 below).

Did Kennan resign as director of the Policy Planning Staff over Truman's decision to proceed with research and development of thermonuclear weapons or did he, as a reviewer of the draft of this primer suggest after conversing with Nitze, resign and go to the Institute for Advanced Study at Princeton University? The answer is "Neither."

In 1949 at the State Department, Kennan was wearing two hats, that of Counselor (a high level advisor) and Director of the Policy Planning Staff. In November 1949, Kennan wrote Acheson a memo concerning the superbomb. (Kennan, "Draft Memorandum From the Director of the Policy Planning Staff (Kennan) to the Secretary of State," November 18, 1949, in Aandahl, 1949, p. 585-587.) In the memo, he argues that many people, inside and outside of government, need to be heard on "this emotional subject" of the superbomb decision. If Truman were to address the issue at all in the near future, Kennan suggested a statement for him to make (Aandahl 1949, p. 587):

Research is being carried forward on all phases of nuclear energy, including a line of research which could, although there is no certainty that it will, make possible the release of nuclear energy of an order of magnitude which would justify the description of "super" bomb.

All the necessary facts about this hypothetical weapon are not in yet, either for the purpose of properly informing the public, or making a decision of policy about it. I am not sure that all of them are even known. One thing is certain and that is that I will have nothing to say and will make no decisions until I have had a chance to consider exhaustively every relevant fact, and every factor, military, psychological, political and ethical that has a bearing on the value of a super bomb both as a deterrent to war, which is the main purpose of our military effort, or as a means of winning one if we are forced into it.

On January 1, 1950, Nitze succeeded Kennan as director of Policy Planning, but Kennan kept his position of State Department Counselor (p. 22f, Kennan, "Memorandum by the Counselor," January 20, 1950, in Gleason). Over the next seven weeks he would complete two documents. The first was finished on January 20, 1950, and it addressed the interrelated issues of

international control of atomic energy, thermonuclear weapon development, and national strategic plans (Kennan, "Memorandum by the Counselor," January 20, 1950, in Gleason, p. 22-44). In it, he wrote:

As to international control, any decisions about it "...must also have an important effect on our domestic atomic energy program, and particularly on what we do about the superbomb. If we decide to hold weapons of mass destruction only for deterrent-retaliatory purposes, then the limit on the number and power of the weapons we should hold is governed by our estimate as to what it would take to make attack on this country or its allies by weapons of mass destruction a risky, probably unprofitable, and therefore irrational undertaking for any adversary. In these circumstances, the problem of whether to develop the superbomb and other weapons of mass destruction becomes only a question of the extent to which they would be needed to achieve this purpose....

If on the other hand, we are resolved to use weapons of mass destruction deliberately and prior to their use against us or our allies, in a future war, then our purpose is presumably to inflict maximum destruction on the forces, population and territory of the enemy, with the least expenditure of effort, in full acceptance of the attendant risk of retaliation against us, and in the face of all moral and political considerations.... Depending, therefore, on which of these courses is selected, our decision on the superbomb might be one of two diametrically opposite ones. (p. 29-30)

And:

Weapons of mass destruction...reach backward beyond the frontier civilization, to the concepts of warfare which were once familiar to the Asiatic hordes. They cannot really be reconciled with a political purpose directed to shaping, rather than destroying, the lives of the adversary.(p. 39)

Kennan was arguing that weapons of mass destruction are unethical.

The second report is Kennan, "Draft Memorandum by the Counselor (Kennan) to the Secretary of State," February 17, 1950, in Gleason, p.160-167. One could call it "Theory of Containment, Round 2." Although Truman's decision on the bomb research had already been made, in this memorandum, Kennan argues to stay the course. "There is little justification for the impression that the 'cold war,' by virtue of events outside of our control, has suddenly taken some drastic turn to our disadvantage." He argues, p. 164, that the U.S. should act quickly to "get rid of our present dependence, in our war plans, on the atomic weapon." He further argues that the refutation of Moscow (communism) is not primarily military, but multi-dimensional, and that concentration on the military aspects of the situation distorts it. He seems to be anticipating NSC-68 and arguing against its conclusions.

Recall that Kennan could not have been ignorant of the currents occurring around him concerning the superbomb discussions, Congressional hearings, and ultimately Truman's decision. In addition, the writing of these two documents could not have just commenced on January 2, 1950. Their formulations were undoubtedly gestating for awhile prior to his starting

to write them. So, although Kennan did not resign as director of the Policy Planning Staff as a direct result of the thermonuclear bomb decision, given his beliefs expressed in these documents, that pending decision had to have affected his thinking.

Did he quickly go to Princeton? No. In his morning meeting on Jan. 3, 1950, Acheson had complained that he did not know what was happening in Latin America—“[A]re they going Communist, Fascist, or what?” (In “Unsigned Draft Memorandum Prepared in the Department of State,” January 4, 1950, in Aandahl 1950, p. 589ff.) Acheson requested that someone needed to take a fact-finding mission on the subject. On February 18, 1950, one day after submitting the second of his two reports, Kennan left on a fact-finding mission to Central and South America. (footnote to “Draft Memorandum by the Counselor (Kennan) to the Secretary of State,” February 17, 1950, in Gleason p.160ff.)

Kennan also did not go to Princeton upon his return. In the latter part of June and in July, 1950, he would head an NSC committee quickly examining the broader national security implications of the invasion of South Korea by North Korea (e.g., Should the U.S. expect the Soviet Union to cause trouble in Europe?) (See Gleason, p.324-330 & 361-367.) He did not return from Princeton to head this; he was already at the State Department. On June 25, 1950, the day the North Koreans invaded South Korea, Kennan has stated

At about 3:30 in the afternoon, the Secretary [of State, Dean Acheson,] broke off the discussions we [the Department of State advisors] had been having with him and said he wanted time to be alone and to dictate. We were called in about 6:30 p.m. and he read to us a paper he had produced, which was the first draft of the statement finally issued by the President, and which was not significantly changed by the time it appeared the following day [June 26], as the President's statement.

(This can be found in the Papers of Dean Acheson, Yale University, in Counselor George Kennan "Princeton Seminar" comment from contemporaneous note, February 13, 1954)

Kennan was working two jobs at the State Department at the end of 1949 and undoubtedly needed relief. There can be little doubt, however, that he disagreed with proceeding with thermonuclear weapon research and development and, because of the documents he wrote in early 1950, had he remained as director of the Policy Planning Staff, NSC-68 may well have been a different document.



**LeMay, Curtis** (1906-1990) — Best known as the architect of the Strategic Air Command (SAC) and was its longest serving commander, 1948-57. LeMay joined the Army Air

Corps in 1928, shortly after graduating from Ohio State University. By the age of 37, during World War II, he had become a major general. As such, he played a key role in planning bombing raids on Germany and Japan, including the bombing of Hiroshima and Nagasaki. LeMay developed several bombing tactics while a group commander in the 8<sup>th</sup> Air Force in England, and then he was transferred to the Pacific Theater. Under his leadership, the 20<sup>th</sup> Air Force, flying against Japan, perfected the low-flying, incendiary raids against Japanese cities, a strategy he had originated. After the war, LeMay commanded the U.S. air forces in Europe and, in 1948, was one of the main organizers of the Berlin Airlift that lasted into the next year. LeMay was recalled from Europe and given command of the new Strategic Air Command. Under his leadership, SAC controlled strategic nuclear policy, and the Air Force became the principal vehicle for its implementation. He was appointed Air Force Vice Chief of Staff in 1957 while retaining command of SAC. In June 1961 LeMay was promoted to Air Force Chief of Staff. In this position, he clashed with McNamara. LeMay wanted more funding for bombers, and McNamara wanted more funding for missiles. He retired from the Air Force in 1965. In 1968 he ran with George Wallace as the vice-presidential nominee of the American Independence Party. During the campaign he advocated the use of nuclear weapons against North Vietnam.

At SAC, his strategy was not one of restraint. Should a nuclear war start, LeMay did not believe in holding back some of the stockpile, but rather in delivering the entire stockpile in the first blow, the so-called “Sunday punch.”

With the creation of the JSTPS, LeMay became an advocate of the counterforce strategy because the short-range naval bombers and relatively inaccurate Polaris missiles could not hold the counterforce Soviet targets at risk while the SAC assets could. During the Cuban missile crisis, he advocated attacking Cuba, even after the Soviets had agreed to remove the missiles.



**Nitze, Paul H.** (1907- ) — Served as an advisor to every president since Franklin Roosevelt except Jimmy Carter and Bill Clinton. Among his past government posts are director of the U.S. Department of State Policy Planning Staff, Secretary of the Navy, Deputy Secretary of Defense, member to the U.S. delegation to the Strategic Arms Limitation Talks, head of the U.S. negotiating team on Intermediate Nuclear Forces at the Arms Control Talks in Geneva, and Special Advisor to the President and Secretary of State on arms control matters. Nitze was one of the first Americans to arrive at Hiroshima after the bombing, and he was one of the directors of the *Strategic Bombing Survey* of the air war against Germany and Japan. In particular, Nitze led the part of the study dealing with Hiroshima and Nagasaki. Results of the atomic bombings from that survey led him to believe that some population protection was possible and that some structures and industries were less vulnerable than others. While others saw only the destruction, the survey discovered indications of survivability. One recommendation of the report was that U.S. cities should construct bomb shelters. The work left him with the belief that nuclear weapons were different in degree from conventional weapons but not fundamentally different in kind. Nitze calculated Little Boy and Fat Man to be about two orders of magnitude greater than

a conventional attack. After the survey Nitze, joined the State Department's Policy Planning Staff, then headed by George Kennan, with whom he would disagree on the degree of military might needed. Nitze became an advocate of thermonuclear weapons and succeeded Kennan, who left the position after it was decided to proceed with thermonuclear weapon development. Nitze was now in charge of writing NSC-68, presented to Truman in the spring of 1950. NSC-68 called for a vigorous program of both nuclear and conventional arms buildup to meet the threat posed by Communism. For nearly fifty years his nuclear weapon philosophy has been that the U.S. must be second to none. Strategic superiority should be sought so that nuclear weapons could be used as chess pieces in international relations. Due to his experience with the survey, Nitze held that nuclear war is winnable; furthermore, he argued that the U.S. should reject a "no first use" policy as it lessens the uncertainty for Soviet leaders. Later in the 1950s, Nitze was a member of the Gaither Committee and was the principal writer of its report, which was presented to Eisenhower one month after Sputnik had been launched. The report led to the injection of a possible "missile gap" between the U.S. and the Soviet Union into the political discourse of the former. During the 1970s and 1980s as a lead arms control negotiator, however, Nitze sought stability between the U.S. and the Soviets. He also believed that Reagan's SDI was a breach of the ABM Treaty, which he had helped negotiate. He was, however, a "Team B" member, the team of experts formed by President Ford to review the estimates made by the CIA concerning Soviet military might. The team found that the CIA consistently underestimated the Soviet military. He was a negotiator of the INF treaty under President Reagan and had the "walk in the woods" in July 1983 with Yuliy Kvitsinskiy, his Soviet counterpart. Recently, on the *The New York Times* editorial page, Nitze called for the U.S. to unilaterally disarm, because he believed precision conventional munitions could now do the work of deterrence.

Nitze has been diplomat-in-residence at the Paul H. Nitze School of Advanced International Studies, The Johns Hopkins University, since his retirement from the State Department in 1989.

Nitze has written the books, *Tension Between Opposites: Reflections on the Practice and Theory of Politics* (1993), and *From Hiroshima to Glasnost: At the Center of Decision—A Memoir* (1989).



**Teller, Edward** (1908- ) — Managed Los Alamos research on the development of the "super" (the hydrogen bomb) and was later instrumental in forming Lawrence Livermore Laboratory. Teller was born in Budapest, Hungary, when it was still part of the Austria-Hungary Empire. He received degrees from universities in Karlsruhe, Munich, and Leipzig, Germany. He further studied under Niels Bohr in Copenhagen and subsequently taught at the University of Göttingen (1931-1933). With the rise of Hitler in Germany, Teller and his wife departed for the United States where he secured a teaching position at George Washington University. His pre-Manhattan Project contributions to physics include theoretical insights into the structure of the hydrogen molecule and, with George Gamow, an explanation of radioactive decay. With the onset of World War II, he joined Enrico Fermi's team at the University of Chicago that built the first nuclear reactor and then accepted a position with the

Manhattan Project. Although Teller aided in the research on the atomic bomb, he spent much of his time examining the possibilities of a thermonuclear weapon, despite requests from Oppenheimer to help the atomic bomb effort more. At the conclusion of World War II, Teller wanted the government to immediately fund research on such a weapon. When that did not occur, he moved to the University of Chicago but continued as a consultant at Los Alamos. Pressure built on President Truman to proceed with thermonuclear weapon research and development following the detonation of the Soviet atomic bomb in August 1949 and the revelations of Klaus Fuch's spying for the Soviets during the Manhattan Project. Truman authorized the weapon against the advice of his AEC advisory committee, and Teller toiled at Los Alamos to make it a reality. Little progress was made at first on a thermonuclear weapon. The initial ideas of Teller and others would not work when they examined them further. In 1951 mathematician Stanislaw Ulam proposed using mechanical shock of an atomic bomb to compress a secondary of fusion material. Teller refined this to use the radiation of the "primary" to compress the "secondary." His single-minded, stubborn pursuit of the thermonuclear weapon concept paid off in the detonation of a thermonuclear device at Enewetak Atoll in the Pacific Ocean on November 1, 1952.

During the security hearings against Oppenheimer, the animosity between Teller and Oppenheimer came forward. Teller testified, "I would feel personally more secure if public matters would rest in other hands." Although his testimony was not the decisive factor, many of his former Manhattan Project colleagues still felt he had betrayed Oppenheimer. This division between Oppenheimer supporters and opponents still arises today during debates of science and technology issues that affect public policy.

Teller was director of Lawrence Livermore Laboratory from 1958-60 and associate director from 1954 to 1958 and again from 1960 to 1975. Through the years, he has argued vigorously for more and newer nuclear weapons and strategic defense, whether it is X-ray lasers, "brilliant pebbles," or the more limited national missile defense system.

**Brodie, Bernard** (1910-1978) — Known as the "dean" of nuclear strategists. Brodie was a native of Chicago and received a Ph.D. in international relations from the University of Chicago in 1940 and became a Yale University professor. From 1951 to 1966, he worked at RAND before returning to Yale. Brodie was married to the noted biographer Fawn Brodie.

During his graduate studies and while at Yale, Brodie became an expert on the strategic impact of navies. Upon hearing of Hiroshima and Nagasaki, Brodie realized that all his previous work had become irrelevant, that the world had just fundamentally changed. He edited *The Absolute Weapon* (1946), the first book on nuclear strategy, and in his writings in that volume argued that the purpose of armed forces in the future would be to deter others from war, no longer to win wars. Although he believed that nuclear weapons would be scarce, Brodie did not believe that a nuclear exchange was winnable, although in the late '50s and early '60s he was one of those who promoted counterforce targeting as the accuracy of the weapons increased. Later in life he changed again, back to the belief that nuclear war could only have losers, that regardless of which targets had first priority, in a thermonuclear exchange, cities and populations would eventually be destroyed. In the first and last phases of his nuclear strategist career, Brodie held

that weapon parity was most stable. He also authored *Seapower in the Machine Age* (1941), *A Layman's Guide to Naval Strategy* (1942), *Strategy in the Missile Era* (1959), *Escalation and the Nuclear Option* (1966), and *War and Politics* (1973).

**Wohlstetter, Albert** (1913-1997) — One of the world's leading nuclear and national security strategists and advocate of the "second strike" and "fail safe" concepts of deterrence. Wohlstetter was a government-employed mathematician during World War II who joined RAND in 1951 and stayed there through the 1960s. He subsequently became a professor at the University of Chicago in 1974. Throughout his career he was one of the principal thinkers on military strategy and produced some of the most original nuclear strategy work while at RAND. His analyses continued until his death in 1997. Some of his last work concerned the Gulf War and the U.S. involvement in Bosnia. Wohlstetter was an extensive writer.

In the 1950s, Wohlstetter produced a seminal work that demonstrated that SAC bomber bases were vulnerable to a surprise attack and that such vulnerability could lead to instability during a crisis—a "use them or lose them" situation. If they were lost, the U.S. strategic retaliatory capability was lost. This argument was later extended to include "soft" missile silos. A force that is vulnerable to attack can invite aggression rather than deter it. The original work was publicly disseminated as "The Delicate Balance of Terror", *Foreign Affairs*, Vol. 39, No. 3, April 1961. (Note: His wife, Roberta Wohlstetter, also at RAND, produced one of the first systematic studies of the Pearl Harbor attack – *Pearl Harbor: Warning and Decision*, Stanford University, 1962 – which showed how closely it resembled a vulnerable SAC base in that Pearl Harbor was vulnerable to attack and invited aggression rather than deterred it.) The vulnerabilities of the bases arose because the weapons were becoming more accurate and could be used in a first strike against "point" targets and not just against area targets such as cities.

Wohlstetter analyzed the "N+1" problem (proliferation from "N" countries to "N+1" countries) in a *Foreign Affairs* article in April 1961. There he argued that the best way to limit proliferation was the U.S. nuclear umbrella. Furthermore, he argued that disarmament would only increase the ambitions of the Soviet Union. Other of his studies led to the "second-strike" and "fail-safe" concepts for deterring nuclear war.

Wohlstetter and Brodie did not get along very well. Wohlstetter was keen on "numbers crunching" or "scientific exercises" while the studies of Brodie were more "thought experiments" or "historical analyses."

It has been noted that Richard Perle and Paul Wolfowitz were Wohlstetter's protégés and that others he significantly influenced included Senator Scoop Jackson, Senator Robert Dole, and Prime Minister Margaret Thatcher.

**Kent, Glenn A.** (1915- ) — Director of the Weapons Systems Evaluation Group (WSEG), Office of the Secretary of Defense, from 1972-74. Kent, in 1963, created a quantification scheme for determining strike effectiveness. The scheme caught the eye of Schelling because it could be used as the basis for a capabilities-based approach to arms control. The damage metric of his scheme was the sum of lethal areas covered by all weapons in the inventory and tied to

throw-weights, etc. This could have been used for a possible framework for arms control based on overall magnitudes rather than numbers of weapons in sub-categories. He retired from the Air Force as a Lieutenant General in 1974.



**McNamara, Robert** (1916- ) — Secretary of Defense under Kennedy and Johnson and author of the nuclear concepts “flexible response” and second strike “counterforce.” He was a firm believer in systems analysis and operations research. He had developed logistical models and statistical analysis techniques for bomber raids and troop and supply movements during World War II. After World War II, McNamara and nine cohorts went to Ford Motor Co. as the “Whiz Kids” to revamp that enterprise using statistical control methods. He rose to become the first non-Ford family-member president, from which he was tapped to be Secretary of Defense. McNamara was disenchanted with the inherited policy of “massive retaliation” and changed it to “flexible response” and second strike “counterforce” because of its explicit targeting of objectives in urban areas. Before adopting counterforce, he briefly considered “minimum deterrence” until some strategists convinced him that the Soviets might not be deterred by a minimum response. The counterforce policy was announced in a commencement address for the University of Michigan at Ann Arbor, Michigan in June 1962. Shortly thereafter, when he came to the conclusion that there was no upper limit to the number of weapons counterforce could require, McNamara publicly changed his strategy again to “assured destruction.” Donald Brennan, an analyst at the Hudson Institute, added the “mutual” to the phrase in order to make the acronym “MAD.” McNamara relied heavily on analysts, many from RAND, and is also remembered for introducing the “body count” metric in the Vietnam War. McNamara resigned as Secretary of Defense in 1968, disillusioned with nuclear strategy and Vietnam, which he had initially championed, and accepted the presidency of the World Bank, in which capacity he served until 1982.

**Bundy, McGeorge** (1919-1996) — National Security Advisor and one of the main architects of foreign policy under both Presidents Kennedy and Johnson. In 1966, Bundy left the Johnson administration to become head of the Ford Foundation, where he stayed until 1979 when he became professor of history at New York University. During his government service, Bundy supported McNamara in his policy of assured destruction and advocated a policy of “sustained reprisal” against North Vietnam during the Vietnam War. After moving to his philanthropy post, he advised Johnson against escalation in the Asian war and eventually argued for much lower levels of nuclear weapons. Bundy wrote *Danger and Survival: Choices About the Bomb in the First Fifty Years* (1988) and, with Sidney Drell, Stanford University professor, and ADM William Crowe (Ret.), published the influential article “Reducing Nuclear Danger” in *Foreign Affairs* in the spring of 1993.

**Borden, William** (1921- ) — An early nuclear strategist who believed that nuclear war was “certain and inevitable” and was a crusader for thermonuclear weapons. Borden wrote *There Will Be No Time: The Revolution in Strategy* in 1946 when he was a law student at Yale. His

ideas resulted from the combination of the bombings of Hiroshima and Nagasaki and his observations concerning the V-2 rockets in Europe. One night a V-2 hurtled right past his B-24 bomber. Contrary to the assertions of Brodie, Borden believed nuclear weapons would not be scarce. Furthermore, Borden argued that enemies would have them and that missiles would deliver them. He did not believe that nuclear weapons would provide deterrence; therefore, to prepare for that future, the U.S. should plan for winning the nuclear war. One way to do that was to target Soviet bases so that their weapons could not be used. Borden became a staff member of the Joint Congressional Committee on Atomic Energy, working for Brian McMahon, Senator from Connecticut, and crusaded for thermonuclear bomb research. This led him to clash publicly with Oppenheimer. Borden left government service as Oppenheimer went to trial and became an attorney for the atomic power division of Westinghouse. By the 1980s, he was a Washington, D.C. attorney and no longer actively involved in nuclear strategy discussions.

**Schelling, Thomas C.** (1921- ) — A political economist, game theorist, and nuclear strategist who has written about deterrence and signaling with limited nuclear attacks. At various points in his career, Schelling has taught at Harvard, conducted research at RAND, and examined policy issues such as health care, as a government consultant. Throughout his nuclear strategy and economics-oriented work is the presence of the rational actor theory. Over more than two decades (from the late 1950s) he helped run “political exercises” at the Pentagon. These were games evolving from hypothetical, tense international situations such as a Berlin-type crisis.

Schelling disagreed with Wohlstetter’s conclusion about the threat to stability. Schelling thought that the real threat to stability was the reciprocal fear of surprise attack. That is, he disliked having both sides possess a first-strike capability as this would be destabilizing during crises—both would fear being struck by the other and so would be more prone to either launch first or to react to negative information, whether true or not. Hence, Schelling believed that possession of a secure, second strike capability, the ability to “ride out” a first strike and still have sufficient weapons to hold targets at risk, was a means to ensure crisis stability. Along with Henry Kissinger and others, he was one of the developers of the “Charles River Doctrine,” a major theory of stable nuclear deterrence. It was named for the Charles River in Massachusetts because its originators during the 1950s were primarily academics at institutions along the river. The doctrine argued that the purpose of arms control was not disarmament but stability.

In 1960, Schelling published *The Strategy of Conflict* that examined the resolution of many different types of crises, most of them having nothing to do with affairs of state (e.g., traffic jams). In keeping with the strategy outlined in the book, during the weeks following the erection of the Berlin Wall, he advocated signaling the Russians with a warning or “demonstration” detonation of a nuclear weapon over a remote part of the Soviet Union. The suggestion was firmly rejected when McGeorge Bundy pointed out that the initial trajectory of such a demonstration would look identical to that of a missile aimed at a “real” target such as Moscow. Learning from this, Schelling then argued that most war-fighting options were indistinguishable from the standpoint of the Soviet Union. The response to noting several hundred incoming missiles on a radar screen would probably not be different from the response to noting several thousand incoming missile signals had to be discernable from one another. Schelling also wrote *Arms and Influence* (1966).

In later years he argued that one must use force in such a way as to exploit “the bargaining power that comes from the capacity to hurt.” Also he wrote (circa 1971) that arms control changed from considerations of weapon characteristics to that of weapon numbers. Schelling believes that numbers are not the best way to compare arsenals because different sides have different requirements. Furthermore, Schelling thought, even in the summer of 1968, that the Gulf of Tonkin raids were an appropriate signal to North Vietnam. He continued in Kahn’s footsteps with the theory of escalation, particularly with using different forces to “send messages.” This theory was called into question by some following the Vietnam War, during which the signals we thought we were giving, by the application of escalating conventional forces, were not in fact the signals that were received by the Vietnamese opposition.



**Kahn, Herman** (1922-1983) — A physicist and futurologist who first became well known for his classic piece on nuclear strategy, *On Thermonuclear War* (1960). Kahn received his degrees from UCLA and Cal Tech and joined RAND in 1948, where he stayed until 1961, when he left RAND to establish Hudson Institute. He was a prolific lecturer and author. From notes of lectures he gave to the military and consultants, Kahn wrote *On Thermonuclear War* (1960), *Thinking About the Unthinkable* (1962), and *On Escalation* (1965). Other books include *The Emerging Japanese Superstate* (1970), *The Future of the Corporation* (1974), *The Next 200 Years* (1976), *The Japanese Challenge* (1979), *The Coming Boom* (1982), and *Thinking About the Unthinkable in the 1980s* (published posthumously in 1984). (Note how prescient he was, e.g., addressing the rising power of Japan in 1970 and the coming economic boom in 1982 at the depths of that stagflation.)

In many ways, Kahn was both the most public of the strategic thinkers of the late 1950s and 1960s. His many writings were filled with equations and numbers. Kahn had a flair for appearing on television shows to talk about “thinking about the unthinkable.” He did not so much have a specific argument as to the purpose of nuclear weapons in the world power structure as he analyzed how a nuclear war could be fought and what its effects could be. Kahn analyzed conflict from a theoretical basis and developed a generalized escalation ladder with 44 different “rungs” ranging from diplomatic gestures to unlimited war. In so doing, he produced a paradox in that he attempted to show that thermonuclear war was different only in degree from conventional war and not different in kind. Yet, by studying nuclear war and publicly articulating how it should be fought, Kahn helped to ingrain such ideas in all strategists which resulted in nuclear weapons being different in kind and not just degree from conventional weapons, the exact opposite from much of his work.

**Kaufmann, William** — Nuclear strategist and successful advocate of counterforce. Kaufmann was a student of Brodie’s at Yale and then went to RAND where he first worked on an Air Force-sponsored study of nuclear targeting. He came to believe that the growth of the stockpile and the growth in the power of the individual weapons from atomic to thermonuclear during the mid- and late-1950s had resulted in a war-fighting plan that would obliterate the Soviet Union,

Eastern Europe, and much of China. With others at RAND, Kaufmann proceeded to develop a “no-cities” targeting idea wherein the armed forces and fighting potential of the Soviet Union would be the targets. When he had the strategy sufficiently thought-out, he was able to brief McNamara and argued that with a minimum deterrence, in a “small crisis” the president could be faced with the alternative of either destroying Russian cities—inevitably inviting reprisals in kind—or surrendering. On the other hand, the ability to respond to a Soviet attack without hitting Russian cities would extend deterrence in those situations where all-out retaliation was not warranted. McNamara adopted counterforce as the U.S. nuclear strategy, at least until recent times. After his government service, Kaufmann would return to academia and eventually become Professor Emeritus from the Massachusetts Institute of Technology.



**Enthoven, Alain C.** — An economist at RAND who worked in the Pentagon for McNamara as Deputy Assistant Secretary for Systems Analysis where he was known as a “numbers man.” Later Enthoven became president of Litton Medical Products, then a professor at the Stanford Graduate Business School. Since the mid-1970s he has specialized in the economics of managed health care. At the Pentagon, however, Enthoven helped revamp the Pentagon budget and budget planning process. In addition to budget analysis, he had significant input to a new Defense Program Memorandum (DPM) that McNamara gave Johnson in December 1963 that emphasized deterrence rather than counterforce. The memorandum stated that the U.S. should have sufficient nuclear forces to absorb a first strike and still be able to destroy sufficient Soviet targets to deter them. The destruction metrics were 30 percent of the population and 50 percent of the industrial base. A delivered yield of 400 megatons could do this. Enthoven performed the calculations. They were based on a model of targeting one-megaton bombs against various Soviet cities and seeing at what point the rate of the increase in the returns started to diminish. This was at 400 megatons. (McNamara actually wanted a 1200-megaton stockpile by 1969, 400 megatons for each leg of the triad, according to his stockpile plan.)



**Kissinger, Henry A.** (1923- ) — U.S. Secretary of State (1973-77), expert in international affairs and nuclear matters, National Security Adviser (1969-75) to Presidents Nixon and Ford. Kissinger was born in Germany and came to the U.S. in 1938 when his family fled the Nazis. He became the study director at the Council of Foreign Relations in 1954 and taught at Harvard from 1957-69, during which time he consulted with the National Security Council and the Arms Control and Disarmament Agency. In the Nixon and Ford administrations, Kissinger played a major role in the formulation of U.S. foreign policy while serving first as the National Security Adviser and then as Secretary of State.

Along with Schelling, Kissinger was an original proponent of the Charles River Doctrine. Kissinger wrote *Nuclear Weapons and Foreign Policy* (1957) in which he opposed Dulles' professed strategy of massive retaliation and preferred "flexible response," which would combine conventional weapons and tactical nuclear weapons. He argued that the latter should be integrated into the former. The thinking was that if the NATO countries could strengthen their military by this means, then massive retaliation would not need to be relied upon regardless of the aggression. He was not convinced that the Soviets believed that massive retaliation would occur in response to a conventional thrust in Europe. Kissinger's 1960 book, *The Necessity for Choice*, issued the warning of a "missile gap" between the USSR and the U.S.

When he served in the Nixon and Ford administrations, Kissinger was both the primary theoretician and practitioner for U.S. foreign policy. In the arms control realm, his policy of détente with the Soviets led to the Strategic Arms Limitation Talks (SALT) negotiations, the ABM Treaty, and the implementation of the SALT I agreement.

For his work in negotiating a cease-fire with the North Vietnamese, Kissinger was awarded the Nobel Peace Prize in 1973. He was also instrumental in the thaw in relations between the U.S. and the People's Republic of China and in obtaining an end to the 1973 Arab-Israeli War.

**Sloss, Leon** (1926- ) — Director, Nuclear Targeting Policy Review (NTPR) Committee in 1978 that led to PD-59. Wohlstetter and Kahn also contributed to the Policy Review. PD-59 was an elaboration of NSDM-242 that grew out of the Foster Panel study that in turn was based on SIOP-63. PD-59 added more options to the nuclear warfighting doctrine of the U.S. while maintaining "assured destruction" in reserve. PD-59 was approved shortly before Carter left office, but the Reagan administration implemented most of its philosophy. Previously Sloss was acting director, Arms Control and Disarmament Agency.

Currently he is President of Leon Sloss Associates, Inc. which specializes in national security affairs. Sloss earned a B.A. from Stanford University and an MPA (Public Affairs) from Princeton University.



**Brown, Harold** (1927- ) — A physicist, Brown was Director, Defense Research & Engineering (DDR&E) under McNamara and Secretary of Defense for Carter.<sup>1</sup> Prior to becoming McNamara's chief scientist, Brown was director of Lawrence Livermore National Laboratory.

While not wholeheartedly an endorser of the sophisticated nuclear strike options envisioned by Schlesinger, Brown realized that having a full range of strategic options, in the unlikely event that an option would be needed, was better than having no options other than a full response. This was the "countervailing" strategy that was announced in 1980. In testimony before the Senate Armed Services Committee, Brown said that "the assets that the Soviet leaders appear to

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<sup>1</sup> Official biography located at [http://www.defenselink.mil/specials/secdef\\_histories/](http://www.defenselink.mil/specials/secdef_histories/)

prize [are] their nuclear and conventional forces and the hardened shelters that protect their political and military control centers, as well as their own lives.” In addition, Brown was fully aware of the importance of perception in deterrence. He believed that the nuclear threat should be “conclusive” in that wars have started in history because people have misjudged the consequences of actions. Hence, U.S. nuclear policy must leave no doubt as to what would happen to a nuclear aggressor.

Finally, in the 1960s, Brown had argued for a limited missile defense, one limited against the Soviet threat but protective against the threats of others.



**Brzezinski, Zbigniew** (1928- ) — Political scientist and National Security Advisor to Carter from 1977 to 1981 while Harold Brown was Secretary of Defense. He is the son of a Polish aristocrat who was a diplomat before World War II. After the Communist takeover of Poland following the war, the Brzezinski family fled to Canada. Zbigniew graduated from McGill University and Harvard. In 1958, he became an American citizen and taught at Columbia University, developing expertise on Communist affairs. He was the principal foreign policy advisor to Hubert Humphrey in 1968 and became director of the Trilateral Commission in 1973, where he met Carter.

In the area of nuclear strategy, Brzezinski provided major impetus to PD-59 and was a firm supporter of MX. For deterrence, he recognized that psychological factors were at least as important as technological ones. What the Soviets perceive us to be doing can be more important than what we are doing. He thought that our old nuclear policy was only relevant as long as the U.S. had nuclear superiority, but the policy needed to be changed to reflect the new reality of nuclear parity. PD-59 added more options, both in numbers and sophistication.

Regarding the MX, Brzezinski noted that proceeding with the new missile was as much a geopolitical issue as a technological issue. Indeed, he also successfully argued for the larger of the two MX designs from a “macho” perspective. He did not believe that it would be good for the image of the U.S. to build a missile smaller than that allowed by the SALT II treaty.



**Schlesinger, James** (1929- ) — An economist at RAND, chairman of the AEC, and Director of the CIA under Nixon, Secretary of Defense<sup>2</sup> under Nixon and Ford, and Secretary of Energy under Carter. Schlesinger entered government service in 1968 as the deputy director of the Office of Management and Budget. He received his Ph.D. in economics from

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<sup>2</sup> Official biography located at [http://www.defenselink.mil/specials/secdef\\_histories/](http://www.defenselink.mil/specials/secdef_histories/)

Harvard and had taught at the University of Virginia and the Naval War College before going to RAND in 1963.

As a nuclear strategist, Schlesinger believed in giving the President numerous nuclear options, and he reintroduced theories of counterforce and nuclear war fighting into U.S. policy. More than counterforce and war fighting *per se*, however, Schlesinger believed in selectivity, being able to select what weapon one wanted to send to what target. In addition, he thought that uncertainty was necessary for deterrence. He wanted to establish uncertainty as to how the U.S. would respond to a specific provocation and whether the U.S. would not strike first. Schlesinger thought that a goal of arms control should be to keep a nuclear war as confined as possible and directed toward military, not civilian, targets. He held that MAD was “wrong,” unconvincing, “logically inconsistent,” and contained “moral defects.” The Foster Panel, headed by John Foster, DDR&E, provided much of the background for what became the “Schlesinger Doctrine” (1974) as documented in NSDM-242. It stated that “the destruction of enemy cities should not be the only option and possibly not the primary option” for the President to authorize in the event of nuclear war. He believed that the President should have limited nuclear options that might be as limited, in theory, as the destruction of an individual missile silo. In addition, his doctrine targeted Soviet assets critical to Soviet post-war “power, influence and ability to recover”; secure reserve forces for “protection and coercion during and after major nuclear conflict”; consideration of nuclear response to conventional aggression; and damage limitation for the United States and its allies. A metric introduced into the targeting was that seventy percent of the industry required for Soviet economic recovery should be destroyed.

**Ball, Desmond** — A citizen of the United Kingdom and regarded as Australia’s leading strategic analyst. He is a special professor in the Strategic and Defence Studies Centre at the Australian National University, Canberra, which he headed from 1984 to 1991, and specializes in analyses of military affairs, principally nuclear strategy. Ball has reassessed the past and published extensively over the last twenty-five years on all aspects of deterrence theory and strategies. He has authored more than 30 books and monographs on global strategic matters. The thrust of his work is closer to Brodie than Borden. Ball is a member of the governing council of the International Institute for Strategic Studies and has written Adelphi Papers No. 169 and No.185, “Can Nuclear War be Controlled” (1981) and “Targeting for Strategic Defense” (1983), respectively.

He has written perhaps the best unclassified description of strategic war plans. See for example, Desmond Ball and Robert C. Toth, “Revising the SIOP: Taking War-Fighting to Dangerous Extremes,” *International Security*, Spring 1990, 14:4, pp. 65-92.

**Gray, Colin S.** — UK political scientist with interests in national security policy, strategic theory and military history who has written 16 books on deterrence. Dr. Gray is professor of International Politics and director of the Centre for Security Studies at the University of Hull in England. He is Canadian born and formerly of Kahn’s Hudson Institute. Gray has written reports for the U.S. government on a wide range of topics that include nuclear strategy, arms control, space strategy, and strategic defense. He has examined both the calculus and the psychological aspects of deterrence and has argued that one must know one’s opponent, e.g.,

Chamberlain did not know Hitler — he chose to ignore the fact that Hitler was not an English gentleman — so in essence had no understanding of his opponent. Gray is in the tradition of the Borden/Kahn side of nuclear strategy. He has argued that in a nuclear war, victory is possible. Furthermore, he does not believe that the analysis of nuclear war should “stop when the button is pushed” but should proceed throughout the conflict. He definitely follows Kahn in this respect (e.g., Kahn multi-tiered levels of escalation.) In the early 1980s, Gray advocated targeting the government and Communist Party of the Soviet Union—the leadership—because in that totalitarian state, eliminating the leadership could quickly lead to a collapse of the state. He further argued possessing a first strike capability was an asset to be sought. His latest book is *Modern Strategy* (1999).

**Freedman, Lawrence** — Chairs the Department of War Studies at King’s College, University of London, and is an analyst of military affairs. In addition to considering the future of deterrence following the end of the Cold War, he has eloquently advocated the psychological aspects of deterrence and that “deterrence is about risk rather than certainty.” Freedman has written *The Evolution of Nuclear Strategy*, 2<sup>nd</sup> ed. (1989). Freedman is also a critic of the “Revolution in Military Affairs.” He argues in Adelphi Paper No. 318 that no amount of technological gadgetry can totally remove the “fog of war.”

**Payne, Keith B.** — President of National Institute for Public Policy, historian, and analyst of nuclear deterrence. Payne has analyzed missile defenses in the past, but most recently he has examined what deterrence means in the post-Cold War world with respect to new threats to the U.S. He is editor-in-chief of *Comparative Strategy: An International Journal* and has published more than 70 articles and 14 books, including *Deterrence in the Second Nuclear Age* (1996). Payne is also an adjunct professor at Georgetown University. He has been a consultant to the White House, the Arms Control and Disarmament Agency, and the State Department.

## *Appendix C*

### *Some Important Strategic Nuclear Documents, Reports, and Studies*

#### **Weapons Systems Evaluation Group (WSEG) X**

The WSEG was established in 1947 by Secretary of Defense Forrestal to provide technical analysis of weapons systems and programs. The WSEG played a significant role in nuclear policy evolution over the years through the series of studies they conducted.

#### **NSC-30** — “United States Policy on Atomic Warfare,” 16 Sep 1948

The objective of NSC-30, approved by Truman during the Berlin airlift, was “to determine the advisability of formulating, at this time, policies regarding the use of atomic weapons.” NSC-30 had the following conclusions: “It is recognized that, in the event of hostilities, the National Military Establishment must be ready to utilize promptly and effectively all appropriate means available, including atomic weapons, in the interest of national security and must therefore plan accordingly. The decision as to the employment of atomic weapons in the event of war is to be made by the Chief Executive when he considers such decision to be required. In the light of the foregoing, no action should be taken at the present time: to obtain a decision either to use or not to use atomic weapons in any possible future conflict; to obtain a decision as to the time and circumstances under which atomic weapons might or might not be employed.”

#### **NSC-20/4** — “U.S. Objectives with Respect to the USSR to Counter Soviet Threats to U.S. Security,” 24 Nov 1948

This was the basic set of war objectives used through 1954. It stated that “Both the immediate purposes and the ultimate objective of the Soviet leaders are inimical to the security of the United States and will continue to be so indefinitely.” The Soviet threat was characterized as “dangerous and immediate” and would “progressively increase and that by no later than 1955 the USSR will probably be capable of serious air attacks against the United States with atomic, biological and chemical weapons, of more extensive submarine operations, and of airborne operations....”

#### **Harmon Report** — “The Harmon Report: Evaluation of the Effects of Atomic Bombing,” 12 May 1949

Secretary of Defense James Forrestal requested that the Joint Chiefs of Staff (JCS) examine the impact on the Soviet Union if all the atomic bombs in the U.S. inventory were delivered on the USSR. The JCS established an ad hoc interservice committee, chaired by Lieutenant General H. R. Harmon, USAF. The responsibility for assessing the capabilities for delivering bombs to the target was assigned to the Chief of Staff of the Air Force. The Harmon Committee submitted its report, “Evaluation of the Effects of Atomic Bombing” to the Joint Chiefs of Staff. The report concluded that “the planned atomic attack on seventy Soviet cities would not, per se, bring about

capitulation, destroy the roots of Communism, or critically weaken the power of the Soviet leadership to dominate the people.” The report estimated that the expected Soviet casualties would be 2.7 million deaths and that physical damage to installations, personnel casualties suffered in industrial communities, and other direct or indirect cumulative effects would result in a 30 to 40 percent reduction in Soviet industrial capability. The attack would not halt a Soviet invasion of Western Europe, the Middle East, or the Far East and by itself would not defeat the Soviet Union. The report went on to argue though that this did not mean that we should not have the capability to attack the Soviet Union with an all-out atomic air assault. “From the standpoint of our national security, the advantages of its [the atomic bomb’s] early use would be transcending. Every reasonable effort should be devoted to providing the means to be prepared for prompt and effective delivery of the maximum numbers of atomic bombs at appropriate target system.” (Note that at the beginning of World War II, the Soviet Union lost several million soldiers, killed or captured, and almost two thirds of its coal, iron, steel, and aluminum production.)

**NSC-68** — “U.S. Objectives and Programs for National Security (NSC-68),” 14 Apr 1950  
NSC-68 was largely a reaffirmation of the policy objectives in NSC-20/4. It was primarily authored by Paul Nitze and presented to Truman in the spring of 1950. NSC-68 was an attempt to account for Oppenheimer’s observation, during the debate as to whether to proceed with fusion weapon research, that no one had yet devised a foreign policy in a world that could be armed with thermonuclear bombs. An important part of the document’s thesis was that the Soviet leaders would favor preventive war if they thought the U.S. was weak, either militarily or in will. On the latter point, Nitze argued that “the enemy’s perception of American strength and will was as important as their reality in the great power game.” For this reason, he rejected the U.S. declaring a “no first use” policy. Furthermore, the document put forth four alternative policies for the U.S.: the continuation of the status quo; a return to isolationism; a preventive war by us against them; and a rapid build-up of the “political, economic, and military strength of the free world.” Nitze opined that the first three were unworkable and/or unacceptable. He wanted the U.S. to maintain strategic superiority over the Soviet Union. He saw nuclear weapons as chess pieces: “The atomic queens may never be brought into play; they may never actually take one of the opponent’s pieces. But the position of the atomic queens may still have a decisive bearing on which side can safely advance a limited-war bishop or even a cold-war pawn.” In drafting NSC-68, Nitze believed that the “year of maximum danger” was 1954. He arrived at that date from his estimate of when the Russians would be able to drop two hundred atomic bombs on the United States. “This threat is of the same character as that described in NSC 20/4... but is more immediate than had previously estimated. In particular the United States now faces the contingency that within the next four or five years the Soviet Union will possess the military capability of delivering a surprise atomic attack of such weight that the United States must have substantially increased general air, ground, and sea strength, atomic capabilities, and air and civilian defenses to deter war and to provide reasonable assurance, in the event of war, that it could survive the initial blow and go on to the eventual attainment of its objectives.”

### **Oppenheimer Disarmament Panel**

In 1952 Truman appointed Oppenheimer as chairman of a special State Department panel on disarmament. The report of the “Oppenheimer Disarmament Panel” warned of Americans thinking of nuclear war as a “one-sided conflict” and concluded that the nation would probably be unable to endure the destruction caused by the 600 to 1500 atomic bombs that the Russians were expected to have in their arsenal in “a few years.” It also recommended sharing the secrets of nuclear weapons with allies. Truman disregarded the panel’s recommendations.

### **NSC-162/2** — “Basic National Security Policy (NSC-162/2),” 30 Oct 1953

The Eisenhower administration's basic national security policy was spelled out in NSC-162/2 of October 1953 and was reflected in the three-year defense program approved that December. High priority was given to SAC's strategic striking power as the mainstay of the “massive retaliation.” The development and deployment of tactical nuclear weapons was also encouraged. NSC-162/2 established the policy that nuclear weapons would be considered “as available for use as other munitions” and encouraged the military to plan to employ them in limited as well as general war. Finally, NSC-162/2 stressed the need to protect the nation's mobilization base and marked the beginning of an intensive, long-term effort to develop early warning and continental defensive systems.<sup>C1</sup>

### **Killian Report** — “The Report to the President by the Technological Capabilities Panel of the Science Advisory Committee,” 14 Feb 1955<sup>C2</sup>

In 1954, President Eisenhower asked Dr. James R. Killian Jr., president of the Massachusetts Institute of Technology, to “direct a study of the country’s technological capabilities to meet some of its current problems.” The report examined the vulnerabilities of the United States to surprise attack and ways that science and technology could strengthen our offense and defense to reduce our vulnerability.

The 42-member Technological Capabilities Panel of the Science Advisory Committee of the Office of Defense Mobilization, frequently referred to as the Killian Committee after its director, interpreted its mandate broadly. The committee set as its objective an examination of the current vulnerability of the United States to surprise attack and an investigation of how science and technology could be used to reduce that vulnerability by contributing to the following five developments: An increase in U.S. nuclear retaliatory power to deter or at least defeat a surprise attack; an increase in U.S. intelligence capabilities to enhance the ability to predict and give adequate warning of an intended surprise attack; a strengthening of U.S. defenses to deter or blunt a surprise attack; the achievement of a secure and reliable communications network; and an understanding of the effect of advanced technology on the manpower requirements of the armed forces.

The Killian report “confirmed” the Oppenheimer Disarmament Panel estimate that the Soviets probably had 600-1500 bombs already in their stockpile. In addition, the report concluded that the Soviet arsenal already included hydrogen bombs, which in a few more years could be carried by rockets to targets in the United States. The panel called for improving the U.S. intelligence capability and communications, as well as making SAC less vulnerable to attack, hence improving its retaliatory capability. In addition, it called for improved defensive measures, both

anti-missile and civil. One of the recommendations for improving the retaliatory capability of SAC was deployment of ICBMs. Furthermore, the panel called for more research on ICBMs and on both land- and sea-launched IRBMs. An intelligence recommendation led to the overflights of the Soviet Union by the U-2s, but the Committee in its report kept the existence of the special plane a secret.

Overall, the conclusions of the report were not particularly upbeat. The panel believed that the technological prowess of both sides would lead to a stalemate in which an attack by either side would result in mutual destruction. While technology would get us into this situation, ultimately technology might also get us out. It was a time of “urgency and not despair,” if proper attention was given to the right technologies.

**Gaither Report** — “Deterrence and Survival in the Nuclear Age,” (NSC 5724, Document 158), 7 Nov, 1957

Eisenhower commissioned the Gaither Committee to recommend a course of action for him “if there was going to be a nuclear war.” Officially, the committee was called the Security Resources Panel of the ODM Science Advisory Committee and was chaired by H. Rowen Gaither Jr., a California attorney and chairman of the RAND board of directors. After Gaither took a leave of absence for health reasons, Robert C. Sprague, president of an electric company, headed the committee. The committee was supposed to limit itself to the subject of civil defense, but the nearly 100 experts it had for its staff expanded its scope tremendously to include a review of the administration’s entire military policy. The final report, “Deterrence and Survival in the Nuclear Age,” was written by Nitze and briefed to Eisenhower on November 4, 1957.<sup>C3</sup> The date is important because Sputnik was launched on October 4, 1957, and this significant event would affect how Eisenhower reacted to the report. The report cited the danger looming from Soviet ICBMs — “by 1959, the USSR may be able to launch an attack with ICBMs carrying megaton warheads against which SAC will be almost completely vulnerable under present programs.” In NSC-68 Nitze had written that the year of “maximum danger” was 1954, but in the Gaither report he revised the critical date to 1959 or 1960. The report gave its highest priority to the survivability of SAC. Only by having a secure retaliatory force could the American people be protected.

Sprague privately reported that SAC’s aircraft had such poor readiness that it was likely that on any given day not a single plane could have taken off within six hours of an alert. Furthermore, he believed that in an actual surprise attack, the U.S. could probably count on getting only 50 to 150 large weapons off the ground, and these would be totally inadequate to achieve a “substantial retaliatory attack.”

Eisenhower believed that the earlier Killian report was more correct than the Gaither report and that the U.S. was facing a gradual loss of strategic advantage, not a precipitous one. He did not support the building of hardened shelters for bombers but did support steps to increase their readiness so that they would be airborne before the airfields would be attacked. As a result, he supported the development of the Ballistic Missile Early Warning System (BMEWS) in January 1958, which was a complement to the Distant Early Warning (DEW) Line brought on-line in

August 1957. Additionally, steps were instituted to keep one-third of the bomber force on ground alert at all times.

By the time the report was delivered, Eisenhower had come to the conclusion that nuclear war was out of the question as an option. Jerome Wiesner reported that Eisenhower said at the Gaither report briefing, “You can’t have this kind of war. There just aren’t enough bulldozers to scrape the bodies off the streets.”<sup>C4</sup> Less than a month after the report was issued, Eisenhower requested help from scientists in pushing for a test ban. The report influenced several members of Congress, Henry Jackson and John Kennedy among them. They adopted the theory of a “missile gap” between the Soviet Union and the U.S. and brought it into public debate during the 1956-1960 time period. Eventually, McNamara, Kennedy’s Secretary of Defense, stated that there was no missile gap.

### **WSEG-12 X**

This study by the Weapons System Evaluation Group projected that the atomic offensive outlined in the Joint Strategic Capabilities Plan (JSCP) for Fiscal Year 1956 might achieve the ultimate goal of ending a general war in a single blow. It would destroy virtually all Soviet atomic production capability, obliterate 118 out of 134 major cities, cause 60 million deaths, and “virtually eliminate the Soviet bloc industrial capabilities, and preclude any significant recuperation for at least one year.” But WSEG-12 also pointed out that even if SAC destroyed the 645 targeted airfields, there would still be at least 240 remaining to which Soviet bombers could be dispersed and survive attack. “To achieve a high degree of assurance of destroying all known Soviet operational and staging bases,” the report concluded, “would require an allocation of approximately twice that evaluated.” Even these additional bombs and bombers, it added, “cannot prevent the Soviets launching a strike unless we hit first.”

### **Hickey Report X**

In 1958, the Net Evaluation Subcommittee (NESC) of the NSC was tasked to prepare a target list which would serve as the basis for a “national targeting policy” and “national strategic target system.” The Hickey Committee report, NESC-2009, issued in Feb 1960, was approved by the JCS and President Eisenhower as the basis for future planning for nuclear forces. NESC-2009 was used in planning the first SIOP (SIOP 62) in 1960.

### **WSEG-50 X**

This study by the Weapons Systems Evaluation Group in 1961 was entitled *Evaluation of Strategic Offensive Weapons Systems*. Its conclusions were against having a policy of counterforce because it was believed to be ineffective in that it would not substantially decrease the damage that the Soviets could cause the U.S. through a retaliatory strike. The problem was that the Soviets had weapons that the U.S. could not target either because we did not know about them (silos or bomber bases not yet identified) or the U.S. had no reliable means to defeat at that time (submarines). This study recommended a strategy similar to that proposed by Brodie, a doctrine of finite deterrence forces that were so invulnerable and destructive that no one would dare attack the U.S. The recommended targets were Soviet cities. The strategic forces needed to

be sufficiently large so as to be able to destroy them even after sustaining a Soviet first strike. Much of this study found its way into McNamara's thinking when he eventually spoke on assured destruction.

**RAND (Kent Study)** —“Damage Limitation: A Rationale for the Allocation of Resources by the U.S. and USSR,” 21 Jan 1964

A study group commissioned by McNamara and headed by Lt Col Glenn A. Kent developed the concept of damage limitation. The results of that and subsequent studies were reported by McNamara in his FY 1966 defense budget statement. “The strategic objectives of our general nuclear war forces are: 1) to deter a deliberate nuclear attack upon the United States and its allies by maintaining a clear and convincing capability to inflict unacceptable damage on an attacker, even were that attacker to strike first; [Assured Destruction] 2) in the event such a war should nevertheless occur, to limit damage to our populations and industrial capacities.”<sup>C5</sup>  
[Damage Limitation]

**National Security Study Memorandum (NSSM)-3** — “Military Posture,” 21 Jan 1969

Kissinger directed a review of U.S. military posture and asked for the development of criteria against which U.S. strategic needs could be measured. The study, completed in March 1969, raised the issue of whether more flexibility should be introduced into the U.S. strategic nuclear war plans. This effort resulted in the criterion of “strategic sufficiency” being developed and ultimately a more flexible structure of the SIOP.<sup>C6</sup>

**National Security Study Memorandum (NSSM)-169** — “Background Paper C: A Report to the Secretary of Defense by the Panel to Review U.S. Policies for the Employment of Nuclear Weapons,” 24 Oct 1972.

A DoD ad hoc task force was established to study the need for a more flexible structure of the SIOP's pre-planned responses. It was chaired by Dr. John Foster, Director of Defense Research and Engineering, and augmented with representatives from the CIA, the State Department, and the NSC. This work led to NSSM-169, approved by President Nixon in late 1973. NSSM-169 led directly to NSDM-242, signed by President Nixon on 17 January 1974.<sup>C7</sup>

Much of the background and analysis for the “Schlesinger Doctrine” came from this panel known as the Foster Panel. The panel recommended “greater flexibility” in nuclear options for the President. McNamara had added only three options to the SIOP. The panel urged an almost infinite range of options, with the exception that civilian residential areas should not be explicitly targeted. The panel conducted a number of war games and concluded that the “signaling of intentions” during the course of a war was appropriate (signaling prior to a war—warning shots—was considered to be nonsense). The change in strategy also owed much to technology, specifically MIRV, and to an increase in weapon accuracy. In addition, the number of targets identified in the Soviet Union had climbed to 25,000.

General Jasper Welch of the Air Force was a member of the panel. He has stated that another significant change to targeting recommended by the panel was to explicitly target the power

centers in the Soviet Union—the Communist Party, the army, and the technocrats. These power centers were where decisions were made and where deterrence had to work. Hence, it was imperative that they know that their “world was not going to survive” should nuclear war occur.

**National Security Decision Memorandum-242 (NSDM-242)**, — “Policy for Planning the Employment of Nuclear Weapons,” 17 Jan 1974

NSDM-242 implemented the “Schlesinger Doctrine” that had been analyzed and recommended by the Foster Panel. In January 1974, Schlesinger stated that the destruction of enemy cities “should not be the only option and possibly not the primary option” of the United States in the event of war. Instead, his strategy included a series of “limited nuclear options.” These ranged from targeting individual Soviet nuclear weapons to industries. In addition, counterforce was also included in the options. Perhaps more than the actual wording of the change in policy was the change in the mental attitude it embraced. If necessary, war-fighting with multiple options was the purpose of the weapons and not simply “mutual assured destruction.” The U.S. was no longer accepting potential national suicide as the price of having nuclear weapons.

NSDM-242 began: “Based on a review of the study conducted in response to NSSM-169 and discussions by the Verification Panel, I have reached the following decision on United States policy regarding planning for the nuclear weapons employment. These decisions do not constitute a major new departure in U.S. nuclear strategy; rather, they are an elaboration of existing policy. The decisions reflect both existing political and military realities and my desire for a more flexible nuclear posture. ... The fundamental mission of U.S. nuclear forces is to deter nuclear war and plans for the employment of U.S. nuclear forces should support this mission.” NSDM-242 directed limited employment options; targeting of Soviet assets critical to Soviet post-war “power, influence and ability to recover”; secure reserve forces for “protection and coercion during and after major nuclear conflict”; consideration of nuclear response to conventional aggression; and damage limitation for the United States and its allies. A more detailed policy was directed in Nuclear Weapon Employment Policy 1974 (NUWEP-74) issued by Secretary Schlesinger on 4 April 1974.

**Nuclear Targeting Policy Review (NTPR)** — “Nuclear Targeting Policy Review,” Nov 1978 President Carter’s Presidential Decision 18, U.S. National Strategy, issued on 24 August 1977, directed three studies: a Nuclear Targeting Policy Review (NTPR); a Modernization of the ICBM Force Study, and a Strategic Reserve Force Study. The NTPR was an interagency study headed by Leon Sloss. It examined nuclear war termination, urban and industrial targeting, Soviet strategic doctrine, and the destruction of the Soviet State. The results of the NTPR changed the notion of economic recovery targeting to a strategy of destroying the Soviet political and military structure. The NTPR formed the basis of PD-59, signed on 25 July 1980.<sup>C8</sup>

This study, started in 1978 in the Carter administration, was headed by Leon Sloss who had worked on the Foster Panel and the Arms Control and Disarmament Agency. Originally during his term, Carter and his Defense Secretary Harold Brown wanted to scrap the approach of NSDM-242. After Brown was briefed on the Foster Panel study, he testified to Congress that the U.S. should not have uncontrolled escalation as its only nuclear weapon policy. The NTPR was formed to reexamine the issue.

Included in a multitude of consultants for the NTPR were several of the original RAND nuclear strategists—e.g., Wohlstetter and Kahn. Just as the Foster Panel study formed the analytic basis for NSDM-242, the NTPR provided the technical basis for PD-59. The primary difference between them, according to Schlesinger, was the Foster Panel study conclusions focused on victory while the NTPR conclusions focused on selectivity and signaling. The NTPR stated that C<sup>3</sup>I should be given more value in targeting and that less value should be given to urban/industrial targets.

**PD-59** — “Nuclear Weapons Employment Policy,” 25 Jul 1980

This Carter directive followed the recommendations of the NTPR. William Kaufmann suggested to Harold Brown that “counterforce” be removed from the directive and replaced with “countervailing,” which was a strategy to deny the Soviets the possibility of winning without necessarily meaning that the U.S. would win instead.

“Although PD-59 represented no major changes to previous targeting guidance there were three noteworthy features. First, the directive de-emphasized the concept of targeting to impede Soviet economic recovery in favor of greater emphasis on targeting the Soviet war-supporting infrastructure. Second, PD-59 emphasized that the preplanned target packages in the SIOP should be supplemented by the ability to find new targets and destroy them during the course of a nuclear exchange. Third, the directive recognized that the U.S. C3 system was inadequate to support any policy of extended nuclear war fighting and imposed requirements to improve that system. These thoughts were incorporated into NUWEP-80 and supporting documents.”<sup>C9</sup>

**NSDD-13** — “Nuclear Weapons Employment Policy,” 19 Oct 1981

This decision directive was issued by the Reagan administration in October 1981, and while following the policy set forth in PD-59, it also established guidance for protracted nuclear war. It introduced relocatable targets and increased the emphasis on Soviet leadership as targets.

**DIA Damage Criteria Study (DCS) X**

The DCS followed the NTPR and NUWEP 80 and had the objective to produce an estimate, from the Soviet's perspective, of the targets required to be struck and the damage levels required to satisfy, with high confidence, U.S. national policy. The DCS was a series of three studies and other periodic updates. The three studies were the DIA Damage Criteria Study, 19 Oct 1982; the DIA Non-Soviet Warsaw Pact DCS, 16 Jul 1984; and the DIA Moderate Confidence DCS (MCS), 6 Jan 1986.

**Scowcroft Commission X**

This study group was formed in 1983 and headed by the former National Security Advisor (to Gerald Ford) Brent Scowcroft. Its official title was “Commission on Strategic Forces,” and its charter was the examination of the design and deployment options for the MX. The charter of the commission was to examine all land-based strategic policy options. The study emphasized the desirability of the U.S. being able to destroy the entire range of targets within the Soviet Union. Furthermore, it argued that having the two sides out of balance in stockpiles was unstable. If the Soviet Union had a class of weapon, the U.S. should too. It recommended that the MX system be based in existing Minuteman silos in Wyoming and Nebraska and also that a

smaller, single-warhead land-based missile be developed and deployed during the 1990s (“Midgetman”). The former recommendation was adopted while the latter was not.

**NSD-12** — “Lifting the No-Exceptions Policy,” 6 Jun 1989

President Bush signed this directive in June 1989 that lifted the “no-exceptions” policy. This new guidance included relocatable targets and the destruction of leadership.

### **Herres Targeting Study X**

In January 1988, the Vice Chairman of the Joint Chiefs of Staff, Gen Herres, was tasked by the Chairman to review SIOP targeting policies. The Chairman expressed concern about the asymmetry between Red and Blue target bases. The study examined Damage Expectancy (DE) and “military sufficiency.” It was conducted in three phases: Jan - Dec 1988; Jan - May 1989; and Jun - Oct 1989.

### **Strategic Target Review X**

On 25 November 1989, Secretary of Defense Cheney, by memo to the Chairman, Joint Chiefs of Staff, directed the conduct of a comprehensive review of strategic targeting. This review encompassed Department of Defense Policy, Joint Staff SIOP guidance, and actual SIOP planning to include the development of the NTB and the allocation of weapons against that target base. The review was conducted by selected individuals from the staffs of the Office of the Secretary of Defense (Strategic Policy), Joint Staff (J-3, J-5, J-8), the Defense Intelligence Agency, and the Joint Strategic Target Planning Staff (JSTPS). These individuals became known as the Target Review Group that functioned from January 1990 to March 1991. The group did not issue a formal written report but its work was reported in briefings to the SECDEF and C,JCS. The review ultimately resulted in two changes to NUWEP-87 and was implemented in SIOP 93. This effort constituted the most comprehensive review of strategic targeting ever conducted by the DoD. The effort covered the full spectrum of policy, intelligence support, targeting guidance and selection, and war plan production.

### **Nuclear Planning Working Group (NPWG) X**

On 4 Jun 1991, Secretary of Defense Cheney established the NPWG to institutionalize the working relationship between OSD (ISP), the Joint and CINC staffs, DIA and JSTPS for the development and modification of nuclear employment policy implementation in the development of the SIOP and other theater nuclear war plans.

### **Nuclear Posture Review (NPR) X**

The purpose of the Nuclear Posture Review (NPR) was to examine the role of nuclear forces in the security policy of the United States in light of the new and enduring dangers of the post-Cold War era and to recommend to the Secretary of Defense a revised nuclear posture (policy, strategy, doctrine, force structure, command and control, and supporting infrastructure) to fulfill that role. Secretary of Defense Perry announced the NPR results on September 22, 1994.<sup>C10</sup> The NPR made recommendations in the following areas: strategic nuclear forces; non-strategic nuclear forces; nuclear safety, security and use control; command, control, communications and intelligence; infrastructure; and threat reduction. It reaffirmed the role of nuclear weapons in providing a deterrent for the U.S. and also reaffirmed the importance of maintaining the triad to provide that deterrent. It found that START-II limits were not incompatible with deterrence but

that a reconstitution capability for the stockpile should be maintained. The START-II force levels were 14 Trident submarines carrying Trident II missiles, 66 B-52 bombers, 20 B-2 bombers, and three wings of Minuteman III missiles carrying single warheads.

**PDD-60 X**

President Clinton approved a revised U.S. nuclear policy on 13 Nov 1997 that superseded NSDD-13.

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