

INTRODUCTION

Henry S. Rowen

Nuclear weapons were introduced to the world in an era when cities were being massively bombed. That became their immediate, and has been their only, use so far. After Hiroshima and Nagasaki, they were still viewed as only for civilian destruction, a belief that was reinforced by the fact that fission weapons, with a thousand-fold release of energy compared with their conventional predecessors, were soon succeeded by thermonuclear ones capable of another thousand-fold-plus yield. Thermonuclear bombs were the ultimate in terror weapons.

The large-scale attacks on cities in World War II, as Richard Mueller notes in Chapter 1, were accompanied by a moral numbness. There were objectors to mass killings, but they were neither numerous nor effectual. After World War II, a popular movement against nuclear weapons arose, but it did not deflect programs that moved the technology ahead, or slow weapons production in the United States and the Soviet Union, or prevent Britain and France from acquiring them.

For the United States, assigned targets in the Soviet Union were industrial or military establishments. The location of many military-industrial targets in or near cities meant the possibility of huge numbers of civilian deaths. This was due to the high yields of the weapons combined with low delivery accuracies. As in World War II, collateral damage to civilians was seen as a plus, not a minus.

As long as the United States had a monopoly on nuclear weapons, all was well, at least from an American perspective. But this monopoly lasted only 4 years. When it ended in 1949, complications arose: the Russians eventually would be able to attack our cities; it made a class of military forces, specifically those assigned to carry these bombs, highly desirable as targets. The latter possibility was first clearly identified by the RAND Corporation in the early 1950s.¹ According to a recent book by Philip Taubman, it had a galvanizing effect on defense officials in Washington.² It gave a big boost to reconnaissance technologies to better observe Soviet programs. Actions were also

taken to reduce the vulnerability of the U.S strategic bomber force, most obviously by immediately putting our strategic bombers on high alert. The Russians' development of a nuclear bomb created another problem—the stability of the nuclear balance. To wit, if an opponent's nuclear delivery force was vulnerable, there could be a large advantage in striking first rather than waiting to be struck. The incentives to attack preemptively increases if both sides have vulnerable strike forces. This was the famous “delicate balance of terror” first introduced to the public by Albert Wohlstetter in 1959.³

Starting in the mid-1950s more actions to protect our long-range forces were taken: the hardening and dispersal of land based missiles, the building of the submarine missile force, and the protection of our command and control apparatus. (The protection of command and control was harder than one might assume, both because it was not designed for survival and because of the need for concentrated control of these dangerous weapons.) Because Soviet offensive capacities were also improving rapidly, there was a continual probing to identify our vulnerabilities. Vulnerabilities emerged, especially as missile accuracies got better.

In hindsight, perhaps the most important aspect of the nuclear competition in the Cold War was the Soviet Navy's inability to locate our missile submarines along with the U.S. Navy's ability to track Soviet ones, including those carrying missiles, a topic Harvey Sapolsky details in his chapter. Eventually, the Russians quieted their subs and restricted their operations to remote so-called bastions. These steps offered them better protection, but their quiet subs were deployed in substantial numbers only in the 1980s—late in the Cold War. They also built large, protected land-based forces, including mobile intercontinental ballistic missiles (ICBMs). These actions by both countries went far in reducing the preemptive attack instability of the balance.

A widely held belief from 1949 on was that nuclear war could not happen, especially as both sides acquired large and protected forces. However, there were several arguments why it could, nevertheless, occur. One was the temptation to threaten use of nuclear weapons in support of a vulnerable position, most prominently ours in Western Europe. How could it be rational to adopt a strategy that if carried out would have resulted in vast devastation—including to

its purported beneficiary, Europe? The idea was that Soviet leaders would recognize the dangers of invading Europe, perhaps less for concern of a carefully decided American nuclear response than that an unplanned event, perhaps in the fog of war, could somehow lead to nuclear weapons being launched. Thomas Schelling labeled this phenomenon “The threat that leaves something to chance.” That brinkmanship was not just an analytic artifact was illustrated by Secretary of State John Foster Dulles’s doctrine of “massive retaliation.” This doctrine called for an American nuclear response to a Soviet attack on Europe, and was introduced several years after the Soviet Union acquired nuclear weapons.

The situation in Europe with growing numbers of these weapons (ultimately thousands) in the West, and also many in the East, made concerns of nuclear war vivid. Conditions for a crisis were present, especially with respect to Berlin. Its protection depended on the threat of escalating violence if Western access was restricted, as it had been in 1948 and as was threatened again in the early 1960s.

We judged NATO forces to be inferior to those of the Warsaw Pact so the threat to use nuclear weapons first if Europe was in danger of being lost seemed appropriate.⁴ In short, the appearance of Mutual Assured Destruction (MAD) doctrine in the 1960s notwithstanding, the United States continued to have a first-use-of-nuclear-weapons policy throughout the Cold War—a fact that rested uncomfortably alongside assertions that nuclear war was impossible. The main setting was Europe (with some consideration of nuclear weapon use in the Korean War) but the notion that such use could or should be limited to that region was never developed or advocated. Among other reasons, it would have been political poison.

Because the doctrine of MAD played a large role in the Cold War (much more on the American than on the Soviet side), it is useful to repeat a succinct definition of it: 1. Don’t attack weapons, aim at people; and, 2. Don’t defend against the adversary’s weapons. Each of these rules had a voluntary and an existential aspect. Justification for the first proposition might be, don’t attack weapons because that would be destabilizing and lead to an arms race; or, don’t attack weapons because it can’t be done successfully. Justification for the second might be, don’t defend because it’s a bad idea; or, don’t

defend because, although it might be desirable, it isn't feasible. These different justifications produced some confusion.

Before MAD there was Assured Destruction (AD). This construction, detailed by Charles Fairbanks in Chapter 4, came from Secretary of Defense Robert McNamara's endeavor in the early 1960s to hold down Air Force lobbying for thousands of Minuteman missiles. His Systems Analysis Office developed a measure of population and industrial damage to the Soviet Union that was large and deemed sufficient. Allowing for estimated losses to our forces from a Soviet attack, it enabled a cap to be put on our forces well below the Air Force requests. However, AD was described as a "capability," not as a plan for operations.⁵

It was not much of an extension from AD to MAD. MAD was based on the observation that, since only a few nuclear weapons delivered on a city could produce vast damage, why buy more than the number needed to assure that result? As Sapolsky reports, this concept, dubbed "Finite Deterrence," fitted the attributes of the early sea-based ballistic missile system, the Polaris: secure (presumed, and as it turned out, actual) and inaccurate (hence not good against hardened, land-based targets).

If the Soviets saw the nuclear competition as some Americans had come to see it by the mid-1960s, they would rationally decide that building more missiles was a mug's game. Similarly, it was at best a waste—and at worst destabilizing—to make qualitative improvements, such as installing multiple, independent, reentry vehicles (MIRVs) that would enable a single missile to destroy many enemy silos. Increased missile accuracy was deplored. Also deplorable from this perspective was to try to defend against oncoming missiles. As John Battilega shows in Chapter 5, for a long time the Soviet leadership did not see things this way.

Arguably the biggest obstacle to the thorough embracing of MAD by the United States was its commitment to the defense of Europe and its understanding of what was required for Europe's defense. The nuclear link with Europe remained crucial throughout. A huge controversy occurred over the North Atlantic Treaty Organization's (NATO) stationing of Pershing missiles in the 1980s to offset the Soviet SS-20s that had already been deployed. The issue was wholly symbolic but no less important for that fact.

Aside from the escalation of a conflict in Europe, another way nuclear war might come was through a subordinate in the chain of command launching nuclear missiles on his own. The installation of locks, “permissive action links” (PALs), on weapons controlled by higher authority first proposed by Fred Ikle, went far to eliminate that danger. In due course the Russians also installed them but not completely. Long after the event, we learned that the Russian general in charge of the missiles sent to Cuba in 1962 had the authority—and apparently the means—to launch them.

What were we to do if nuclear weapons were used by an enemy? Should the United States carry out massive retaliation? Should it limit further damage through diplomacy or military action or both? Some believed that having a choice between doing nothing and initiating a huge, indiscriminate, nuclear response courted disaster. In any case, much would depend on the context and on what had happened. Our system, and as far as we can tell also the Soviet one, did not cope well with this class of situations, as explained in Tod Lindberg’s chapter. Such possibilities provided a strong incentive not to rely on a quick nuclear response to signals of an attack and to have a robust command and control system.

Another response to these dangers was to negotiate limitations on types of weapons or their numbers. The treaty limiting the deployment of defenses of ballistic missiles was the most important example of a limit on types and it fitted MAD doctrine. Nonetheless, in 1967, McNamara came out in favor of a thin ballistic missile defense oriented against the small and unsophisticated Chinese ICBM force and any small, accidental missile attack. There were also advocates of building a large shield. Opponents argued the merits of not defending oneself. On the one hand, they held that ballistic missile defenses would not be technically feasible because of Russian countermeasures. So they would be a waste. On the other, if they worked, they would fuel the arms race and foster preemptive instability. The upshot was the Anti-Ballistic Missile (ABM) treaty in 1972 which severely restricted deployment of defenses and a long period of relatively low spending on research and development (R&D). It was disrupted by President Ronald Reagan’s Strategic Defense Initiative in 1983 which expanded R&D on missile defenses. In 2001, President George Bush announced American withdrawal from the treaty.

The ABM treaty came out of a sequence of negotiations that included ones on offensive forces (Strategic Arms Limitation Talks [SALT] and Strategic Arms Reduction Treaty [START]). These symbolized a mutual recognition of the virtue of limiting the size of the nuclear forces, but they had little practical effect on nuclear capabilities.

Central to the MAD way of thinking was the concept of the arms race. The model was a game in which each party tried to out do the other by developing new technologies or fielding more forces. Both parties ratcheted up their capabilities but achieved nothing. If one side deceived itself by thinking it had gained a decisive advantage, it could end in a nuclear war.

Although arms race worries did involve an aspect of reality because there were always reactions and counter-reactions by the players, the model had serious limitations. As Battilega's chapter on Soviet nuclear doctrine describes it, it took a long time for the Soviet side to conclude that nuclear war was unwinnable. They went on developing new types of missiles and fielding them, making nuclear weapons and building air and civil defenses long after our way of thinking said they should not have. To our dismay, they built a missile defense system for Moscow. Although they came to see that it was not sensible to add more nuclear forces, they never accepted that it was a good thing to be vulnerable. In short, they rejected MAD as policy.

The second main defect of arms race thinking was the asymmetry in resources between the two sides. Without endorsing the view that President Reagan's arms buildup in the early 1980s and his support for "Star Wars" missile defenses decisively tipped the Soviet Union into collapse (because there are too many good candidates for this award), in fact the United States was much better able to run the "race" than the Soviet Union was.

Over time, changes in technology invalidated the original assumptions about nuclear weapons causing vast and indiscriminate damage. At first such damage was thought to be a necessary attribute of thermonuclear weapons but, as it turned out, they could be (and were) made small, light, and with low yields. Also, missiles came to be deliverable with great precision (as demonstrated in two Gulf wars). This combination created the possibility of a nuclear

conflict with low collateral damage to civilians, but it still left the considerable worry that actions taken in a conflict would cause huge civilian damage.

One might ask about the connection between the doctrinal debate over MAD and operational plans. There was little direct connection. The case for having something other than a huge Single, Integrated, Operational Plan (SIOP)—what Herman Kahn called a “Wargasm”—began to be made in the 1950s. Not much was done about it until the 1960s. In 1961, McNamara directed the Joint Strategic Targeting Staff to prepare plans that included options limited to strategic offensive forces and related air defenses and to other military targets. However, the planned attacks remained massive, not selective. McNamara also called for the study of “controlled and deliberate” use of weapons. Not much came of these initiatives. Secretary of Defense James Schlesinger tried again in the mid-1970s to create “limited” and “regional” nuclear options, but the theory and planning for them remained unsatisfactory.

The lack of American seriousness about the possibility of nuclear war is vividly described in Bill Odom’s chapter on President Carter’s inquiries into emergency procedures: “No president before him, it turned out, had ever practiced these emergency procedures, and therefore, no president had ever given the J-3 in the Pentagon guidance as to what the president desired.”

The British and French faced many of the same problems as the two larger nuclear powers. They needed (1) to acquire long range delivery systems; (2) to be secure from nuclear attack; (3) to decide how much to invest in this category of arms; (4) to develop targeting doctrines and plans; (5) to have a public explanation for what they were doing; and (6) to work out relations with the United States on some of these matters. Bruno Tetrakis, David S. Yost, and Michael Quinlan (chapters 2, 7, and 9, respectively) give excellent accounts of these programs and their rationales.

The British and French situations differed from the American by being closer to the Soviet Union and having fewer resources available. And they were far less willing than was the Soviet leadership to spend large amounts of money on resources. This, together with technical limitations, led them to adopt “counter value” targets, i.e., cities.

The British effort differed from the French in having been started as a joint effort during World War II and with much U.S.-United Kingdom (UK) cooperation. Quinlan discusses the dual nature of British planning: for a UK-only case (formulated as a “Second Centre” of decision making within the Alliance) and for participation with the United States as the other case. The “Second Centre” argument was that if the United States held back from responding in a conflict, Britain was capable of doing so independently. He also addresses British use of American weapons, notably the *Polaris* submarine missile system, and later the *Trident*.

Tetrais labels the French nuclear enterprise, “a program without a strategy.” That situation, as this volume shows, was not unusual. The French motivation was to protect its sovereignty, its security, and its great power status. Nuclear weapons were seen as essential to these purposes in which history played a large role (as it also did in the Russian case). The trauma from the defeat by Germany left France determined to protect its security. Moreover, the United States was not seen as reliable.

The doctrine that emerged was essentially one of “minimum deterrence.” This was the idea that a country with a small nuclear force could deter a large one from a wide range of threatening actions. The logic was no different from that of Britain or, for that matter, China. France saw minimum deterrence as requiring a mass destruction single strike; there was no room for flexibility or selectivity.

The role of the French nuclear program in the Alliance was fraught with ambiguity. While intended to protect France, it did not preclude a role in the defense of others, especially Germany, which formed a buffer between France and the Red Army. Nor did it preclude cooperation with the United States on certain nuclear contingencies.

A curiosity was the adoption of the *tous azimuts* formulation, one that could be construed as including the United States as a target. Tetrais interprets it as an expression of global ambition that was not followed up with corresponding military programs. It seems to have had no political consequences at least during the Cold War. More troubling was the notion of French actions “triggering” the use of U.S. forces in the defense of Europe. This was not argued explicitly

but was, quite naturally, met with American hostility. Again, its practical consequences were small.

Yost, in his chapter on France's nuclear strategy, emphasizes the shift to a dual approach after the collapse of the Soviet Union. One approach preserves a nuclear capability against the possibility of a new great power threat emerging at some point in the future. The other is addressed to smaller, regional countries that possess weapons of mass destruction. With regard to the latter there has been more emphasis on selectivity and discrimination in recent years along with associated military capabilities. However, the overarching rhetoric emphasizes the expected "non-use" of such weapons.

From an American perspective, the British and French nuclear forces were a complication, but not a huge one. Each was determined to have nuclear forces independent of American control. Each was faced with a formidable Soviet nuclear force and neither had the option of defending itself on the battlefield by using these weapons. In the end such defense was not seen as feasible by the Americans or the Soviets either. The main complication was the possibility of either government independently using nuclear weapons and thereby triggering a wider conflagration or disrupting an ongoing conflict. It hardly needs to be said that the likelihood of such actions was seen as quite small by everyone.

China's program under Mao, as presented by James Mulvenon in Chapter 8, was distinctive in publicly disparaging the importance of nuclear weapons. Its public face notwithstanding, the urgency with which the regime pursued their acquisition, including the prominence of nuclear weapons in the tension and ultimate break between Beijing and Moscow, shows the high importance that was attached to getting them. In any case, once possessed, Beijing's rhetoric evolved in an implicitly MAD direction. Mulvenon argues that it did not stop there and points to the growth of a stockpile of tactical weapons that look designed to be used in local conflicts. China, after all, borders on more nuclear weapon-possessing countries than any other (India, Pakistan, Russia, and presumably North Korea). Plus, it faces U.S. forces in its neighborhood. The evidence that China is investing in a full, intercontinental counterforce posture is scant; it is much more likely that it is building a nuclear war-fighting force at the regional level.

Mark T. Clark, in Chapter 10, challenges the widespread assumption that the Small Nuclear Powers will adopt mini-MAD operational doctrines. He discusses four of them: India, Pakistan, Israel, and South Africa and sees all as having considered or adopted nuclear war-fighting doctrines. But this is a heterogeneous set about which generalizations are suspect.

South Africa is a curious case because it has always been difficult for outsiders to understand the threats that pushed the regime over the brink to getting nuclear weapons. Clark offers some explanations that have varying degrees of plausibility. MAD was not one of them. Anyway, in due course South Africa disposed of its weapons.

Israel is a much more serious case. Its technologies are advanced, it has real enemies with whom it has fought three wars since 1948, and its doctrines are shrouded in secrecy and ambiguity. Clark says, plausibly, that Israeli nuclear forces were vulnerable to a Soviet nuclear attack, and that Israel wanted, and perhaps acquired, the ability to deliver nuclear weapons against it.

According to Clark, there is disagreement about Israeli concepts for use. Is use for counter value (i.e., cities) or for battlefield use? Is it to deter a large conventional attack or chemical, biological or nuclear attacks? Or should they be used to preempt enemy nuclear attack? Or is it intended to provoke U.S. intervention to prevent its use of these weapons? Perhaps it is all of the above, and more.

India, Pakistan, and China (along with China, Russia and presumably North Korea) share the distinction of having three-way nuclear-weapon borders. This pattern makes for complications that are poorly understood, certainly for outsiders and perhaps also for the participants.

Clark observes that India's public nuclear doctrine is unclear, including who is the main enemy: China, Pakistan, or the United States? Its National Security Advisory Board calls for forces designed for "punitive retaliation," a triad of aircraft, mobile land-based missiles and sea-based assets; a robust command and control system controlled by the prime minister, a no-first-use pledge, and a strong conventional force. The operational implication of these words is not clear. The development of short-range weapons also suggests a desire to be able to use them on the battlefield. This is a capability that suggests a focus on Pakistan rather than China.

For many years, the low level Indian-Pakistani conflict over Kashmir has had the potential to escalate to much higher levels of violence. Does the possession of nuclear weapons by both sides lower the odds of this, perhaps to nearly zero? It is too soon to know. What is clear is the need for protected and controlled nuclear forces on both sides.

Although there is a question about the primary orientation of India's nuclear program, this is not true of Pakistan's. It is designed to deter or defend against a stronger India. Unsurprisingly, Pakistan has not adopted a no-first-use pledge. Its doctrine might involve stages of escalation from a purely demonstrative use of nuclear weapons to battlefield use to counterforce to, as a last resort, counter value targets. If this is true, it decidedly is not a MAD one.

There are many important questions about Pakistan's nuclear program, including the control of the weapons. The military are evidently in charge of them, not prime ministers. There are also questions about the political stability of the country and who might in a period of turmoil get a hold of these weapons.

These considerations give rise to this book's last chapter by Henry Sokolski (Chapter 12). In it, Sokolski argues that any sound approach to controlling nuclear nonproliferation must eschew MAD-inspired assumptions, especially the notion that nations have a right to acquire nuclear weapons, and, therefore, should be compensated for not exercising this right. This thinking dominates the current popular reading of the Nuclear Nonproliferation Treaty (NPT). Sokolski argues that a new interpretation needs to be given to the NPT, or that the original 1958 Irish proposal for such a treaty should be revived. The Irish proposal gave no nation the "right" to atomic explosives or to be compensated for restraint with unrestricted access to so-called "peaceful" technologies (that in reality has brought many countries close to having bombs).

As part of an overall, bolder strategy for dealing with the spread of these weapons, he urges actively contesting the notion that anyone has a natural right to these weapons; i.e., no longer saying that possession is "understandable." Sokolski also suggests being much more rigorous in enforcing rules on nuclear-technology transfers, and for a larger reduction than planned in the nuclear stockpiles of the United States and its allies. He also proposes nontechnological

carrots as well as sticks for those countries that will be reluctant to go along with this strategy. He suggests, for example, in the case of Russia, that Washington remove U.S. nuclear weapons from Europe as a sweetener. He argues that the alternative for not taking such action is to continue to let the NPT be implemented in a manner that facilitates more states becoming nuclear weapons ready as North Korea has become.

That we averted disaster during the Cold War is considerable evidence in support of Mark Twain's saying that God protects fools, drunkards, and the United States of America. We—and others as well—will have to be much more serious than we have been about the dangers from nuclear weapons being in the hands of those prepared to use them.

ENDNOTES - INTRODUCTION

1. A. J. Wohlstetter, F. S. Hoffman, R. J. Lutz, and H. S. Rowen, "Selection and Use of Strategic Air Bases," RAND, R-266, April 2, 1954.

2. Philip Taubman, *Secret Empire*, New York: Simon & Schuster, 2003, p. 12.

3. Albert Wohlstetter, "The Delicate Balance of Terror," *Foreign Affairs*, January 1959.

4. This was despite work in the Pentagon in the early 1960s making the case that we either did not or need not have conventional inferiority at NATO's spending level. Army Lieutenant Colonel Jack Rogers, then in the Office of the Secretary of Defense (ISA), observed that NATO, having more soldiers and armor than the Warsaw Pact, ought to win a conventional war, contrary to the standard view. If the standard view were correct, it must be because of a defect in NATO organization. But the standard view might be wrong. The Systems Analysis Office, under the direction of Alain Enthoven, developed this insight and gave it prominence. It turned out to be convenient to various interests in the United States and Europe to stay with the position that NATO was conventionally inferior. The doctrine of first use of nuclear weapons remained.

5. As Charles Fairbanks explains in his chapter, in Ann Arbor in 1962, McNamara said,

... to the extent feasible, basic military strategy in a possible general war should be approached in much the same way that more conventional military operations have been regarded in the past. That is to say, principal military objectives, in the event of a major military attack on the Alliance, should be the destruction of the enemy's military forces not of his civilian population.

Robert McNamara, speech to NATO, Athens, Greece, May 5, 1962. Many European officials found this disturbing because it seemed to make nuclear war thinkable.