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The Cabinet of Dr. Strangelove

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by [Steve Coll](#)

[A Fiery Peace in a Cold War: Bernard Schriever and the Ultimate Weapon](#)

by Neil Sheehan
Random House, 534 pp., \$32.00

On November 1, 1952, American scientists led by the Hungarian émigré Edward Teller oversaw the detonation of the first hydrogen bomb, code-named Mike, on an atoll in the Pacific Ocean. Mike possessed more than eight hundred times the destructive power of Little Boy, the bomb that flattened Hiroshima. The following March, Teller and his collaborator, the Hungarian-born mathematician John von Neumann, spoke about their work at a classified meeting of the Air Force Scientific Advisory Board at Maxwell Air Force Base in Alabama.

An obscure Air Force colonel named Bernard Schriever happened to be in attendance. He was a handsome former pilot whose career had evolved into the unglamorous field of project management. At the meeting, Schriever thought he understood Teller and von Neumann to say that the technical characteristics of hydrogen bombs meant that it should be possible, by about 1960, for the United States to build extraordinarily destructive nuclear weapons—eighty times more powerful than Little Boy—that were also small enough to fit onto the tips of accurate, high-flying missiles.

In hindsight, it might seem inevitable that rocketry and atomic weapons, independent inventions of the demon-shadowed latter months of World War II, would be married into nuclear ballistic missile systems—the “ultimate weapon” of Sheehan’s subtitle. Within the United States military of the early 1950s, however, there was little understanding of this technological potential. Curtis LeMay, then the head of the Strategic Air Command, America’s newly christened nuclear deterrent and fighting force (both roles were considered valid and plausible at the time), believed ardently in the primacy of airplane bombers; he scoffed at the Air Force’s missile men as impractical dreamers.

Schriever, however, had a visionary streak. On May 8, 1953, he traveled to the Institute for Advanced Study at Princeton to meet with von Neumann, to make sure that he understood correctly what had been said in Alabama. As he waited in a lounge, Albert Einstein walked by, and Schriever rose to greet him. “There was a certain irony in the encounter,” Neil Sheehan notes in his account of the scene in *A Fiery Peace in a Cold War*. Two years before his death, Einstein regretted the role he had played in educating Franklin Roosevelt about the possibility of the atomic bomb. In a matter of hours at Princeton, after an informal lecture by von Neumann, Schriever would be confirmed in his ambition to pursue a transformational advance in the atomic weapon’s military potential.

In part because of LeMay’s resistance, it was not until the summer of 1955 that Schriever and von Neumann obtained an audience with President Eisenhower, at the White House, to lay out their vision of a full-fledged intercontinental nuclear missile force. Vice President Richard Nixon, Secretary of State John Foster Dulles and CIA Director Allen Dulles also attended the briefing, according to Sheehan’s fascinating account, which he developed from interviews and contemporary diaries. Schriever and von Neumann sketched out a world in which both the United States and the Soviet Union might soon be able to deliver nuclear bombs to the other’s cities within thirty minutes of launch. For dramatic effect, their presentation included a movie clip of rocket engines roaring to life. Sheehan quotes Eisenhower’s reaction:

This has been most impressive, most impressive! There is no question this weapon will have a profound impact on all aspects of human life, not only in the United States but in every corner of the globe—military, sociological, political.

Some weeks later, Eisenhower signed National Security Council Action No. 1433, which noted that “there would be the gravest repercussions on the national security and on the cohesion of the free world” if the Soviet Union were to prevail in the coming race to place atomic bombs onto intercontinental rockets. Eisenhower designated the American effort—which Schriever would eventually supervise—as the “highest priority above all others.”

The US–Soviet nuclear missile competition between World War II and the Cuban missile crisis provides the frame for Sheehan’s narrative in *A Fiery Peace in a Cold War*. It is an inspired choice. Fred Kaplan, in his definitive intellectual history of early nuclear deterrence, *The Wizards of Armageddon* (1983), covered related ground from the perspective of defense strategists in and around the RAND Corporation, the Air Force’s think tank. Richard Rhodes, in *Dark Sun* (1995), traced the spying and competition that surrounded US and Soviet drives to develop the hydrogen bomb. Sheehan draws extensively upon this and other published work, but in focusing on the military’s nuclear missile program, he has written a distinctive and original history of the early cold war. Through his exhaustive interviews with Schriever and other scientists and military officers involved in the programs, Sheehan has also added a substantial body of new research about one of the most perilous periods in human history—a time when two global powers simultaneously acquired the means to destroy human civilization in nearly a blink of an eye, but had not yet digested the implications of their discoveries.

Hitler's V-2 program, supervised in part by Wernher von Braun, inaugurated the military rocket age. The single-stage short-range V-2 caused terror and death in Great Britain but never evolved into a war-changing weapon; among other limitations, it carried only conventional explosives. After the war in Europe, the United States and the Soviet Union picked up the rocket race on roughly equal footing in part because each had captured German scientists who had worked with von Braun. (An amoral character deeply fascinated by the potential of travel to outer space, von Braun surrendered to American forces in Germany; he later emigrated to the United States, where he participated in the US space program.¹) As Sheehan documents, the US–Soviet ballistic missile race was often a messy and discouraging competition, punctuated by launch pad explosions, wayward test flights, and mysterious mechanical bugs. If the atomic bomb was an elegant physics problem largely cracked at the chalkboard, the long-range missile was a challenge of engineering that would only yield to expensive trial and error.

In popular understanding, the US–Soviet “race” to conquer space and apply rocketry to atomic warfare took off in October 1957, with the successful Soviet launch of Sputnik 1. *A Fiery Peace* describes how the competition actually began much earlier, shrouded in secrecy, and how it unfolded in a way that often managed to confuse both sides. For example, Sheehan reports that the Soviet Politburo decided in November 1953 to make missiles the primary delivery system for their emerging nuclear arsenal, even though Soviet scientists had not yet successfully tested a hydrogen bomb, which would be essential to make a missile force plausible. (Fission bombs were so heavy at the time that only enormous and unwieldy rockets could deliver them: the first Soviet ICBM, designed to carry a 5.4-ton fission warhead, was so huge that it could be moved only by rail, and required twenty hours to prepare for flight.) It would be years, however, before the US would learn of this Soviet decision. The first American impressions of the Soviet missile program often came in fragments, drawn from interviews with German scientists from the original V-2 program who were captured by the Soviets after the war and subsequently released. Throughout the 1950s, on each side, intelligence about a technological competition of profound danger was collected and assessed in a fog.

The American missile program's development was informed by arguments over what role atomic bombs should or would play in the future of warfare. “Thus far the chief purpose of our military establishment has been to win wars. From now on its chief purpose must be to avert them,” wrote Bernard Brodie, the prescient defense thinker who helped to conceive of nuclear deterrence, in early 1946. Brodie's wisdom was slow to take hold, however. Sheehan's book suffers from a failure to engage with the development of strategic thinking about deterrence in tandem with missile technology; Brodie is not even mentioned. Still, *A Fiery Peace* shows how, during the 1950s, several factors conspired to slow the spread of deterrence doctrine—that is, the notion that in using nuclear forces to deter land invasions or to guarantee the security of a state, it was also necessary to deploy them in a way that would ensure none would ever be used.

One problem was the rapid but uneven pace of transformational technological advances. Great leaps in offensive capacity—the hydrogen bomb, the distance-shattering insight that a separating warhead could be accurately delivered from a rocket—occurred before the full deployment of reliable defensive surveillance systems that could allow decision-makers in Washington and Moscow to track the other side's tests and military preparations.

Pearl Harbor had left early cold war military planners in the United States with an acute fear of surprise attack. U-2 reconnaissance flights over the Soviet Union, after 1955, helped gradually to calm American nerves about Soviet missile capability, which was emerging more slowly than anti-Communist hysterics in the United States sometimes claimed. From the U-2 photography, for example, Eisenhower knew that candidate John F. Kennedy's claims in 1960 about a “missile gap” between the US and the Soviet Union were untrue, but Eisenhower had to swallow his frustration in silence, lest he reveal the U-2's existence.

Still, even as overhead reconnaissance improved, a sense of blindness and uncertainty about Soviet nuclear capabilities and intentions persisted in the United States. This anxiety encouraged some generals—particularly Curtis LeMay—to engage in loose talk about a possible preemptive nuclear strike against the Soviet Union, if it were discovered that Moscow was preparing an attack. Neither the United States nor the Soviet Union understood the other's geopolitical intentions correctly, Sheehan argues; nor had the science of radiation poisoning and the specter of nuclear winter yet emerged in popular consciousness to chill those who thought of “winning” a nuclear exchange. Many of these problems of atomic disequilibrium would converge during the Cuban missile crisis.

Bernard Schriever appeared on the cover of *Time* in April 1957, his profile enhanced by an illustration of a missile bursting through the clouds. Apart from this brief turn before the public as Henry Luce's celebrated “missileman,” his work supervising the Atlas and Titan missile projects often took place in secret, based at a headquarters in Inglewood, California, known as the “Schoolhouse.” When Schriever retired as a four-star general in 1966, he was not a particularly well-known or influential public figure. In his “Source Notes,” Sheehan discloses, “Until I decided to write a book on the Cold War and the Soviet-American arms race, I had never heard of Gen. Bernard Adolph Schriever.” Nonetheless, early in his research, “someone suggested that I look up Schriever.... He turned out to be living in retirement only about six blocks from my own home in northwest Washington.” Sheehan telephoned; they met; and Schriever ultimately granted the author fifty-two interviews over a period of years.

In 1988, Sheehan published a masterful narrative of the Vietnam War, *A Bright Shining Lie: John Paul Vann and America in Vietnam*, for which he was awarded the Pulitzer Prize. In that book, Sheehan distilled American failure and disillusionment in Vietnam through the life of a single lieutenant colonel, John Paul Vann, whom Sheehan had first encountered in the field as a *New York Times* foreign correspondent. (During his *Times* career, Sheehan also helped to unearth the Pentagon Papers.) It seems clear that he decided to cast Schriever in a similar role for his cold war narrative. He describes Schriever as “the indispensable man” in the missile race, and even credits him with an indispensable role in “America's penetration of space and [the creation of] an unspoken but permanent truce of mutual deterrence with the Soviet Union.”

This is a sizable claim for Schriever, and not a particularly convincing one. Perhaps Schriever was, at times, an indispensable man in the military rocket program, but at a minimum, the general shared his place with other figures, many of whom populate *A Fiery Peace*—particularly the brilliant von Neumann and the cantankerous engineer Edward Hall (whose brother Ted spied for the Soviet Union at Los Alamos, even as Ed helped the United States overcome the humiliation of Sputnik). Moreover, Schriever does not emerge as an interesting man. He played golf well; he got along with his peers (other than LeMay, with whom hardly anyone got along); and he usually completed his projects successfully, even under great pressure. He was an outstanding technocratic leader and manager, that is, but also a conventional military careerist of his era. After retirement, Schriever spent some of his days playing golf at the Burning Tree Country Club, outside of Washington, where he joined other members in resisting ardently the admission

of women.

It is a testament to Sheehan's gifts as a writer that these difficulties with his choice of a protagonist do not burden his book unduly. Sheehan turns great swaths of his narrative over to more interesting figures, such as von Neumann, Hall, and Trevor Gardner, a Welsh-born civilian technology specialist assigned to the Air Force who periodically balled up sheets of paper during meetings and chewed them, and who, not incidentally, had a serious drinking problem. Of all the secondary figures the author brings to life, however, it is LeMay, who was often Schriever's antagonist, who looms largest. Sheehan offers a partially revisionist, consistently thoughtful account of the general, who was one of the less thoughtful architects of the early atomic age.

Like Bernard Schriever, Curtis LeMay came of age in the US Army Air Corps during the 1930s, one of a generation of military and civilian pilots who learned about instrument navigation and night flying through perilous trial and error. At the onset of World War II, LeMay held the rank of major. He made his reputation—and won rapid promotions—as the commander of a bombardment group of B-17s that flew against German targets from England. Sheehan observes that LeMay displayed “the genius of the implementer.” Under unimaginable pressure, as scores of pilots alongside him fell to their deaths from the skies, LeMay not only held his nerve, but he developed one bombing innovation after another—better flying formations, expanded gunnery training, insights into navigation problems, and improved bomb-dropping techniques. At thirty-seven, he became the youngest major general in the United States Army; by then, Sheehan writes, the modern bomber aircraft had become “a fighting machine to which he was deeply wedded emotionally.”

Early in 1945, as the long-range B-29 Superfortress established itself in the Allied aerial forces, Hap Arnold dispatched LeMay to Asia to lead a strategic bombing campaign against Japan, one that might soften up the Japanese homeland for a US-led invasion. Asia's high-altitude jet stream thwarted some of the bombing tactics LeMay had employed over Germany. “LeMay was not a man to persist in a futile exercise and the challenge he faced brought out the ruthlessness in him,” Sheehan writes. Nearly all of the buildings in Tokyo and other Japanese cities were constructed of wood. This fact produced the most infamous tactical insight of LeMay's career: by dropping oil-gel and napalm bombs, he could ignite devastating fires that would spread uncontrollably, particularly on windy nights.

The firebombing of Japan commenced on March 9, 1945. It was a tactic supported at every level of the American chain of command. Ultimately, LeMay burned sixty Japanese cities. Six hundred and seventy thousand Japanese civilians died from American bombing, the majority because of LeMay's fire raids, Sheehan estimates. His judgment about this death toll is matter-of-fact:

While LeMay's willingness to engage in slaughter on such a scale demonstrated the remorselessness of the man, he was not attempting to be deliberately cruel.... Balanced against the bloodletting the American infantryman and Marine would have to endure to invade and physically conquer the Japanese home islands, the agony of Japan's civilians had no weight in the scales. No American leader, military or civilian, was going to protect Japanese civilians at the expense of American soldiers.

This is accurate about the historical setting, but it is also forgiving. LeMay eventually campaigned in 1968 for the vice-presidency on a ticket with the segregationist George Wallace, a decision that seems to have been motivated by defense issues, but which at least suggests the possibility that his racial attitudes lay outside even the then-prevailing mainstream. Sheehan does connect LeMay's coarsening experiences in Japan with his willingness in later years to contemplate nuclear exchanges with the Soviet Union, including during the Cuba crisis:

Taking human life on a horrendous scale once apparently made it easier for him to contemplate taking it on a far more horrendous scale the next time. It was therefore not that difficult for him to go from anonymous Japanese men, women, and children by the hundreds of thousands to the planned killing of tens of millions of anonymous civilians in the Soviet Union, the East European states, and China.

LeMay emerged from the war as America's preeminent Air Force commander. His heroic performance during the Berlin Air Lift further cemented his power. He was the obvious man to address the disarray and unprofessional practices that had built up at the Strategic Air Command during its first years. LeMay soon organized the SAC into a highly alert, well-drilled nuclear bombing force that could evade a Soviet surprise attack and drop atomic weapons on Soviet cities within hours of a presidential order.

During his rise in England, LeMay had succeeded by inviting fellow pilots to speak freely, without respect of rank, about the practical problems they confronted in the air. By the time Schriever began to tinker with missile research, “The Cigar,” as LeMay was known, had evolved from a pilot's pilot into an isolated, arrogant man whose attitude toward his superiors bordered on insubordination. LeMay fought Schriever over budgets, research priorities, and the very premise that missiles should play a significant role in America's nuclear force. “These things will never be operational, so you can depend on them, in my lifetime,” LeMay predicted. He once asked Schriever how large a warhead an intercontinental missile could carry. Told that the answer was a megaton—a bomb eighty times more powerful than Little Boy—LeMay replied dismissively, “When you can put something on that missile bigger than a fucking firecracker, come and see me.” Slowly, however, LeMay relented, overruled by the White House.

In Sheehan's judgment, LeMay “always remained subordinate to civilian authority.” The general did occasionally engage in loose talk about nuking the Soviets before they could nuke America, however. These remarks involved a scenario in which LeMay might judge it to be clear that the Soviets had already decided to attack, and were in the midst of advanced preparations. In that case, Sheehan writes, LeMay “would strike first. Whether he would check to make sure the president agreed with him, LeMay did not say.” At that time,

the generals had the ability to act on their own. That alternative had to exist in case the president was incapacitated and beyond reach. Knowing the characters of LeMay and [his contemporary Tommy] Power, one can again conclude that had an order to launch not been quickly forthcoming from the White House, they would not have waited.

Cold war nuclear deterrence strategy emerged in part from John von Neumann's work on what came to be called “game theory,” which Fred Kaplan has described as “a mathematically precise method of determining rational strategies in the face of critical uncertainties.” In the case of nuclear arsenals, the rational approach is obviously to manage the weapons and associated technologies

so as to prevent their deliberate or accidental use. In a sense, however, Sheehan's narrative describes the dangers of any "rational" regime grounded in these premises of deterrence—problems that have persisted until today, and may soon increase.

One of these problems is the occasional emergence of irrational or at least borderline personalities in control of nuclear weapons—in this respect LeMay and Mahmoud Ahmadinejad are two faces of the same recurring difficulty. Another problem is the persistence of uncertainty, deception, bewilderment, and miscalculation in the decisions of global statesmen. Nuclear weapons can make a state more dangerous but they have not yet made any state smarter about its adversaries. Even the most rational leaders repeatedly make bad decisions because they possess poor information. The Cuban missile crisis, where Sheehan's narrative ends, is the best-known example of how routine failures of this kind can produce terrifying risks when nuclear weapons are involved. Although less severe than Cuba, the miscalculations that have unfolded along the India–Pakistan border since both countries tested nuclear bombs in 1998, particularly Pakistan's rash covert raid into the Kargil section of Kashmir in 1999, have a similar quality.

Sheehan implies in his treatment of Schriever that the emergence of nuclear missile forces stabilized the deterrence regime between the United States and the Soviet Union. It is true that the strong improvement and huge buildup of nuclear missiles on both sides, after the shock of the Cuban crisis, coincided with a more stable era. However, as David Hoffman's recent volume *The Dead Hand* (2009) documents, the political arrangements of détente hid automated nuclear strike systems on the Soviet side that were fundamentally unstable. American nuclear planning also became automated; during the late cold war, the Strategic Integrated Operational Plan, the basis for American nuclear bombing against Soviet targets, made assumptions about the number of bombs required for deterrence that, in hindsight, appear absurdly large.

All along, both governments recognized that some of the particular properties of nuclear missiles—their rapid flight times and their potential to deliver an overwhelming surprise attack—were fundamentally destabilizing. For one thing, they sped up dangerously the time that leaders in Moscow and Washington had to make decisions about the other's actions in a crisis. As soon as the ideological and strategic competition of the cold war ended, both governments moved quickly not only to reduce the sizes of their missile arsenals, but to create more transparency and confidence around their previous hair-trigger alert systems. There is more work to be done in this field of nuclear weapons policy, but the chances of miscalculation have been reduced.

It is possible to delineate three periods in the sixty-four-year history of nuclear weapons. The first is the subject of Sheehan's narrative, the period of zigzagging technological changes and disequilibrium culminating in a clarifying crisis around Cuba. (*Dr. Strangelove*, which mocked the assumptions of early nuclear strategists, helped to mark the end of this era by rendering it comical.) The second period, between the Cuban missile crisis and the Indian nuclear tests of 1998, was one in which, despite the enormous US–Soviet buildup, the risks of nuclear war receded. The number of nuclear weapons deployed declined dramatically; a test ban entered into force; several states voluntarily surrendered their weapons; and many other industrialized states effectively froze their potential weapons capabilities.

We are now a decade into a third and much less encouraging epoch. Three states have tested nuclear weapons since 1998, and a fourth, Iran, seems determined to acquire them. All four of the newest entrants—India, Pakistan, North Korea, and Iran—also have robust missile programs that are related to their nuclear ambitions. It is not difficult to imagine, within twenty or thirty years, a crisscrossing array of nuclear missile and deterrence regimes in Asia and the Middle East. We can assume that strategists in these emerging nuclear states will be no more or less rational than their earlier Western exemplars, but this, as Sheehan's narrative makes frighteningly clear, will prove to be of little comfort.

LETTERS

["The Cabinet of Dr. Strangelove"](#) May 13, 2010

1. See Freeman Dyson's [review](#) in these pages of Michael J. Neufeld's *Von Braun: Dreamer of Space, Engineer of War*, January 17, 2008. ↩