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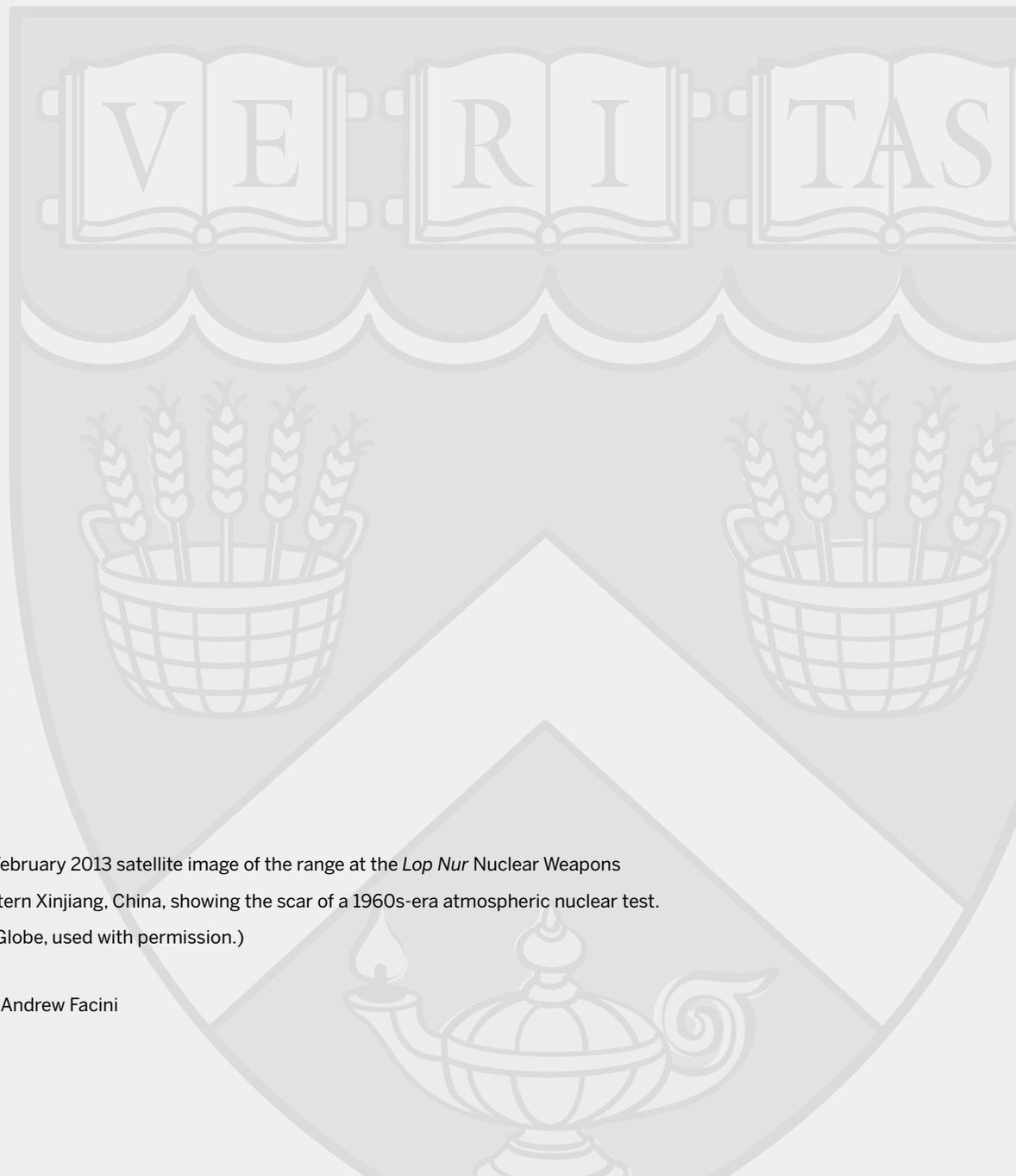
Restraint by Design

The Ideological Origins of
“Minimum Deterrence” in
China’s Nuclear Weapons Program

Andrew Facini

A Thesis in the Field of International Relations
for the Degree of Master of Liberal Arts

May 2018



Cover photo: A February 2013 satellite image of the range at the *Lop Nur* Nuclear Weapons Test Base in eastern Xinjiang, China, showing the scar of a 1960s-era atmospheric nuclear test. (Google/DigitalGlobe, used with permission.)

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Dedication

This project is dedicated to my sister, **Susie**, whose boundless love and energy I strive to emulate every day.

Abstract

The nuclear weapons program of the People's Republic of China has, by the decrees and proclamations of its leaders, maintained an ardently defensive posture for over 50 years. Through difficult times and various crises, Beijing has declined to pursue a large stockpile of nuclear warheads and delivery systems, opting instead to field a system of "high quality but low quantity." This novel approach contrasted with the approaches of its chief rivals, the United States and the Soviet Union.

The goal of this project is to investigate the qualitative motivations for Beijing's unique disposition, hypothesizing that the Maoist ideologies which shaped the PRC's development so heavily are responsible. By analyzing the statements of its leaders and corresponding those with historical developments and the ongoing evolution of China's weapons systems, this project reveals an ideological dilemma: that the very concept of nuclear arms conflicted with Mao's strong philosophies on conflict and development.

Over several decades of conflict, chiefly with the United States, Mao reluctantly turned to nuclear weapons as a means of solidifying his own sovereignty and establishing China's place in the world order. As the PRC continued to develop in the post-Mao eras, however, his original reluctance has remained, as China's nuclear weapons maintained its defensive posture and relied on the then-unique approach of "minimum deterrence."

The author concludes that the case of China's unique, long-lasting philosophy when it comes to nuclear weapons represents a break in the typically realist view of the field, and can offer helpful insights for deciphering the motivations China's modern-day developments and policies.

Table of Contents

Acknowledgments.....	iii
Abstract	v
Introduction.....	1
Post-War Geopolitical Context and Imbalance	5
Characterizing Early Nuclear Development, 1945-1960.....	9
The United States.....	11
Discovery and Development	12
Policy and Rhetoric	14
The Soviet Union	17
Early Aspirations and Development	17
Policy and Rhetoric	19
The United Kingdom and France	21
Lessons for China	23

“Atomic Diplomacy”—the People’s Republic of China Under Nuclear Threats in the 1950s	27
The Korean War, 1950-1953	27
The First Taiwan Strait Crisis, 1954-1955.....	32
Mao’s Evolving Calculus: From “Paper Tigers” to National Security Necessity	35
Mao’s Philosophical Roots	35
Resolutely Facing Nuclear Threats in Korea	38
The Taiwan Strait Crisis Turning Point	39
China’s Unique Nuclear Development	45
“Small Quantity but High Quality”	48
A Consistent Philosophy	53
Conclusions and Implications for the Nuclear Weapons Field	59
Bibliography	63



Five-Nine-Six

A February 2013 satellite image of the range at the *Lop Nur* Nuclear Weapons Test Base in eastern Xinjiang, China, showing the scar of a 1960s-era atmospheric nuclear test. (Google/DigitalGlobe, used with permission.)



Introduction

On October 16, 1964, with an ominous mushroom cloud rising over its northwestern frontier, the People's Republic of China entered the exclusive group of nuclear weapons states, then a four-member club. Leaders in Beijing embarked on the path of nuclear weapons development reluctantly, they claimed, in response to continued atomic “brandishing” from the United States that had steadily abraded their nation's security in times of conflict. Indeed, it was not until the late 1950s, after experiencing repeated threats of nuclear attack, both coded and explicit, that Chinese leader Mao Zedong determined that the atom bomb was truly a necessary component of their national security strategy.

It was such “nuclear blackmail” scenarios, in which the United States menaced China via unrequitable threats of nuclear attack—as endured through the Korean War and the first Taiwan Strait Crisis—that Mao particularly loathed. His steadfast, unique ideology was rooted in traditional Chinese philosophy on conflict, in which human conviction played a more important role than technology. While yet decrying nuclear weapons as “paper tigers,” according to his famous phrase, and maintaining steadfast opposition to high technology as a means of winning wars, he ultimately came to see that bringing the PRC into the nuclear club would not only be the only way to put an end to such intolerable threats, but also would firmly establish his young country as one of the great world powers.¹

He sought this technological coup despite highly unfavorable conditions: the rotting of domestic industry during the abortive Great Leap Forward campaign and the early days of the Sino-Soviet split meant that China was generally ill-equipped to complete a national program of such complexity. Further, the prospect of a Chinese nuclear bomb alarmed both the Soviets and the Americans, and serious

¹ Guang Zhan Shu, “Between ‘Paper’ and ‘Real Tigers’: Mao's View of Nuclear Weapons,” in *Cold War Statesmen Confront the Bomb: Nuclear Diplomacy Since 1945*, ed. John Gaddis et al. (Oxford: Oxford University Press, 1999), 195; Zedong Mao, “The Chinese People Cannot Be Cowed by the Atom Bomb,” remarks to Finnish Ambassador Carl-Johan (Cay) Sundstrom, January 28, 1955.

consideration was given to armed intervention from both Moscow and Washington.² Nonetheless, effective cadres of Chinese scientists and technicians were collected to work toward building the bomb, and a preventive war against PRC never materialized.

Just under ten years later, China successfully developed and detonated its first fission device, making headlines around the world and marking a turning point for Beijing's international standing. Policymakers in both the east and west were stymied at the fact that a rather undeveloped state like China could build nuclear weapons, and advanced nations could do nothing to prevent it.³ While Moscow and Washington moved to reassess and construct the global nonproliferation regime, the spotlight fell on Beijing and its newly acquired nuclear capability: leaders and analysts pondered what a nuclear-armed China would do in a conflict, and how Mao's fierce contempt for such weapons could play a role in this new reality.

Surprisingly, China moved slowly to build up its nuclear arsenal, breaking the trend set by its largest rivals. Instead, its leaders used their bomb in a more rhetorical way, aiming to affect the flow of international politics and putting pressure on the United States in particular to shift its priorities toward nonproliferation and disarmament.⁴ Despite giving the ultimate go-ahead for nuclear development, Mao continued his staunch rhetoric denouncing the technology. He advocated for nuclear disarmament, and championed a groundbreaking public "no first use" nuclear strategy along with his continued public holding that China would prefer not to have the bomb in any case.⁵ This restrained approach broke with the previous and contemporary behavior of other nuclear states, as the United States and Soviet Union continued to develop vast arsenals and systems, and as the U.K. and France, with somewhat newer arsenals, committed to pursuing advanced technologies in step with the U.S. and USSR.

2 William Burr and Jeffrey T. Richelson, "Whether to 'Strangle the Baby in the Cradle': The United States and the Chinese Nuclear Program, 1960–64," *International Security* 25, no. 3 (Winter 2000/01): 95.

3 *Ibid.*, 54–60.

4 Jeffrey Lewis, *Paper Tigers: China's Nuclear Posture* (New York: Routledge, 2014), 20–22.

5 Susan Turner Haynes, *Chinese Nuclear Proliferation: How Global Politics is Transforming China's Weapons Buildup and Modernization* (Lincoln, NE: University of Nebraska Press, 2016), 70.

In line with Mao's unique ideological view of the world (and specifically of conflict in general), the Chinese would come to pioneer a novel nuclear doctrine which relied on small numbers of nuclear weapons and a firmly responsive posture. This approach has remained remarkably stable for the PRC through five decades and various leaderships, and is unlikely to shift away from Mao's original philosophical roots in the near future.

This project investigates the origins of this "minimum deterrence" doctrine from a normative perspective, showing that Mao's original reluctance has instilled a deliberate and lasting culture of restraint when it comes to nuclear weapons in China.



Wartime Roots

Mao Zedong addresses his followers, 6 December 1944.
(Franklin D. Roosevelt Library, NAID 196235)



Post-War Geopolitical Context and Imbalance

The 1950s marked a distinctly new era in East Asia, as the entire region reeled from the ravages of World War II and sought to rebuild. Mao's nascent communist republic focused on rapidly building out the wrecked mainland, strengthening the People's Liberation Army, and establishing key partnerships, mainly with the Soviet Union.⁶ The United States meanwhile expanded its interests, building pro-Western outposts along East Asian frontiers which divided many competing factions, including most notably China and Korea. Key priorities for the United States included rebuilding and defending Japan, Philippines, Taiwan, and the newly formed government in South Korea. The geopolitical fissures in these regions would provide not only the tinder necessary for future Cold War flashpoints, but would closely inform Mao's early strategic outlook and policies.

For him and the Chinese communists, winning the Civil War meant inheriting a largely ruined country. The ravages caused by Japan in World War II were followed by years of deep and continued violence in the fight against the Chiang Kai-Shek's nationalist forces. Having previously made contact with sympathetic Soviet advisers during the Civil War, Mao found the USSR and especially its erstwhile leader Josef Stalin to be a compelling supporter and investor—despite the Soviet Union's own decimation during the war in Europe. By 1950, the PRC began receiving aid and expertise from Moscow as part of a “brotherly” exchange from one revolutionary peoples to another,⁷ even as Soviet leaders had some initial reservations about fully supporting Mao. From Beijing's viewpoint, this crucial support was seen as the extension of an ideological alliance between Soviet and Asian communist movements, and helped solidify its pro-Moscow leanings.⁸

6 Dong Wang, *The United States and China: A History from the Eighteenth Century to the Present* (Lanham, MD: Rowman & Littlefield Publishing Group, 2013), 195.

7 George Ginsburgs, “Trade and Air Relations, 1950-1957: Credits,” in *The Legal Framework of Trade between the USSR and the People's Republic of China* (New York: Springer, 1976).

8 John W. Lewis and Xue Litai, *China Builds the Bomb* (Palo Alto: Stanford University Press, 1991), 4-10.

Simultaneously, the PRC's previously chilly relationship with the United States began to turn outwardly hostile. Following the Kuomintang's final retreat to Taiwan in 1949, the United States drew a hard line in defending Chiang and the exile government from pursuit by the mainland PRC. After North Korean communist forces abruptly invaded the South in June 1950, sparking the Korean War, the U.S.-PRC relationship turned bloody, as the U.S.-dominated UN Force came into direct conflict with Kim Il-sung's troops, Chinese "volunteers," and Soviet fliers. China incurred staggering losses in its Korean campaign, as "many tens of thousands of the best PLA's best troops" were lost in the bloody stalemate,⁹ providing not just an ongoing source of estrangement with the West, but also an open wound for the national pride of a young nation staunchly committed to political independence.¹⁰

At home, Mao faced a great struggle to build up domestic production and maintain social cohesion. While his victory in the civil war was owed in large part to the high morale and energy of the communist forces, an equally major factor was their ability to gain favor with the peasantry by promising agricultural reform and food stability.¹¹ Growing and distributing sufficient (and affordable) food stocks became just as important as supporting and leading the burgeoning People's Liberation Army, which by 1950 had more than 5.5 million soldiers.¹² Mao described agrarian development as paramount, but only in the supporting context of nationalized industrial development: "...agrarian reform liquidates the obstacles to the development of an agricultural economy, but does not yet resolve the question of technical and industrial development."¹³ PRC Foreign Minister Zhou Enlai viewed the challenge of heavy reconstruction as the "special burden of victory."

9 Ibid., 8-9.

10 Wang, *The United States and China*, 194.

11 Wayne C. McWilliams and Harry Piotrowski, *The World Since 1945: A History of International Relations*, 7th ed. (Boulder, CO: Lynne Rienner Publishers, 2009), 58.

12 Wang, *The United States and China*, 195.

13 "Memorandum of Conversation between Anastas Mikoyan and Mao Zedong," February 5, 1949, History and Public Policy Program Digital Archive, APRF: F. 39, Op. 1, D. 39, Ll. 64-73, <http://digitalarchive.wilsoncenter.org/document/113322>. Reprinted in Andrei Ledovskii, Raisa Mirovitskaia and Vladimir Miasnikov, *Sovetsko-Kitaiskie Otnosheniia*, Vol. 5, Book 2, 1946-February 1950, trans. Sergey Radchenko (Moscow: Pamiatniki Istoricheskoi Mysli, 2005), 72-78.

With these unfriendly circumstances unfolding around a struggling PRC, Mao and the Chinese Communist Party were hard-pressed to find self-sufficiency when it came to national security and stability, even with the early support of the Soviets under Stalin. External pressures were mounting, particularly from the United States via the devastation in Korea and from the looming humiliation of unmatchable nuclear threats. In this, the Chinese “felt themselves alone in a tightening vise.”¹⁴ It was out of these formative experiences in the 1950s that Beijing determined that it must build its own nuclear bomb.

¹⁴ Lewis and Litai, *China Builds the Bomb*, 13.



Rapid Development

The fireball created during Operation Teapot-Turk, a March 1955 U.S. nuclear test at the Nevada Test Site. (LLNL)

Characterizing Early Nuclear Development, 1945-1960

Along with the deep ramifications of the post-war geopolitical shifts in Europe and Asia, the early post-war decade was distinctly marked by the world's coming to terms with the new era of opportunity and horror under the invention and spread of nuclear weapons. Even with a limited preliminary understanding of such weapons, change and evolution came at a ferocious clip in this field. In the first decade, the United States attacked Japan with the world's first nuclear bombs (1945), the Soviet Union and United Kingdom successfully completed their own independent bomb programs (1945/1952), the early fission bomb was outdone by new and powerful thermonuclear devices (1952), and the total number of nuclear warheads in the stockpiles of world had grown by more than a factor of 50 after the first year.¹⁵ In the subsequent five years, France would join the nuclear club (1960), intercontinental ballistic missiles would make their debut, and China would be deep into its own development program.

Yet in these early years, much mystery surrounded “the bomb,” and both policymakers and the public would struggle to identify its true nature and utility. WWII planners and tacticians tended to view the nuclear bomb as simply a more powerful explosive for military use, but suspected that, with aggressive policy, more value could be extracted somehow. In Washington and other world capitals, information was an extremely guarded commodity, sometimes stunting the development of clear policy in these years. Meanwhile, the few press reports and nuclear tests opened to the public yielded decidedly mixed accounts of its characteristics. Newspaper reports of American nuclear testing vacillated between dismissive accounts of the bomb's destructive effectiveness,¹⁶ incomplete descriptions of new

15 Hans M. Kristensen and Robert S. Norris, “Global nuclear weapons inventories, 1945–2013,” *Bulletin of the Atomic Scientists* 69, no. 5 (November 27, 2015): 75–81, <http://www.tandfonline.com/doi/abs/10.1177/0096340213501363>.

16 Associated Press, “Bikini Toll Rises to Five Ships Sunk, 31 Fired by Blast,” *New York Times*, July 2, 1946.

developments using dutifully cloaked language,¹⁷ and fearsome (if not also triumphant) declarations of improved explosive power.¹⁸ And so while policymakers grappled with the implications of nuclear weapons on war and peace broadly, the broader public (at home and abroad) was still learning what to call the technology, and how to describe its effects.

At the time, state programs and foreign intelligence-gatherers would undoubtedly have a clearer understanding of such developments, but it would be difficult to assume Beijing had a better source at the time than the somewhat confused Western media outlets. The Ministry of Public Security, Beijing's principle intelligence agency, underwent a protracted reorganization between the establishment of PRC in 1949 and 1955, drastically undercutting its effectiveness abroad. Premier Zhao Enlai candidly discussed the difficulty understanding nuclear weapons at a plenary meeting of the state council as late as 1955: "What after all is the power of atomic weapons? Many people are not clear. As a consequence, this has given rise to two types of attitudes in the world: one is ignorance and the other is terror."¹⁹

It was in these foggier years, then, that Mao observed the rapid pace of development around the world, and in conflict, was ultimately made to respond to a salvo of nuclear-backed threats from the United States. With few other examples to follow, he and other PRC planners would examine closely the actions of the nuclear powers and the dynamics that formed between them. As the intensity of threats against China increased during the Korean War and first Taiwan Strait Crisis, Mao was forced to consider those lessons, and consider new policies to relieve this pressure.

Over these years and through those experiences, his disdainful opinions on nuclear weapons would be forced to adapt. The intense crises of the 1950s, combined with news of continued nuclear proliferation around the world, would ultimately lead to his ordering of China's own nuclear program.

17 Jay Waltz, "Experiments for Hydrogen Bomb Held Successfully at Eniwetok," *New York Times*, November 16, 1952.

18 Gladwin Hill, "2d Atomic Blast in 24 Hours Jolts Wide Nevada Area," *New York Times*, January 29, 1951.

19 "Address by Zhou Enlai at the Plenary Session of the Fourth Meeting of the State Council (Excerpt)," trans. Neil Silver, January 31, 1955, History and Public Policy Program Digital Archive, Dang de wenxian (Party Historical Documents), no. 3 (1994): 16-19, <http://digitalarchive.wilsoncenter.org/document/114333>.

Key themes leading up to this decision included the rapid pace of development in the U.S. (both in technology and in production of weapons), the different approaches used by the U.S. and USSR in leveraging the bomb to achieve their geopolitical goals, and the stubborn shroud of mystery that surrounded the bomb in these early years. These factors all contributed to the pressurized environment in which such national security decisions were made.

Understanding the few examples of national nuclear programs and the history of their ensuing behaviors is key to seeing the world as Mao did in the late 1950s, and will reveal more about his rationale for reversing his beliefs about a Chinese bomb. This section will provide a brief overview of the nuclear weapons programs, statements, deployments of each of the four nuclear states through 1960: the U.S., USSR, U.K., and France.

The United States

The American nuclear program famously developed the world's first fission-based explosive device in July 1945, and infamously attacked two Japanese cities with atomic bombs in a bid to end the war the following month. The Manhattan Project, as the development program was code-named, had its roots in European academies and universities in the 1930s, and was fully underway by 1940, even before the U.S. was brought into the war.²⁰ The program was a success, and the Americans entered the post-war world as the only nuclear-armed state. As such, the world's first decade under nuclear arms would be largely defined by the United States's quest to find utility in this new technology: first, by asymmetrically leveraging it as an "ace in the hole" during attempts to coerce, and later, by reacting strongly to the USSR's growing capabilities, setting a precedent of rapid nuclear stockpiling and development.

20 John Newhouse, *War and Peace in the Nuclear Age* (New York: Knopf, 1989), 23.

Discovery and Development

By the time a deployable nuclear weapon was ready, war-weary American planners were grasping for what, exactly, could be done with the fearsome new device. One of the most obvious attributes of a nuclear weapon is its massive explosive power. As the first American nuclear detonation captivated and terrified observers in July 1945, questions on the utility and strategy of such a weapon immediately took hold. An obvious first concept was to use the bomb to, in a single stroke, annihilate the enemy's cities. But at the time the first atomic bombs were ready for use in August, fifty-two Japanese cities had already been razed to substantial degrees by the U.S. Army Air Force. That summer's bombing raids (relying on formations of bombers carrying conventional explosives, fragmentation bombs, and incendiary munitions) proved enough to inflict damages upwards of 50 percent of any given urban area.²¹ Fifteen major cities suffered destruction exceeding 70 percent, owing principally to night-time firebombings.²² Further, such air raids were increasingly uncontested over the Japanese home islands, owing to a thorough destruction of air defense forces in previous years. In this scenario, American commanders had little military need for the atom bomb: what had already been accomplished conventionally across much of Japan could have been continued at will with the same methods and strategy.

Nonetheless, the USAAF proceeded to use atomic bombs on Japan, decimating the minor cities of Hiroshima and Nagasaki. Modern perspectives on this decision reveal that President Truman was most concerned with ending the war quickly, without much mind to consider the special new weapons now available.²³ In fact, records show that very little military or political debate was held over the first uses of the bomb.²⁴ It was only after the news and reality of its use spread did the U.S. begin to formulate effective new military and political strategies to maximize its use.

21 The United States Strategic Bombing Survey (Washington, D.C.: U.S. Government Printing Office, 1987), 85-92, http://www.au.af.mil/au/aupress/digital/pdf/book/b_0020_spangrud_strategic_bombing_surveys.pdf.

22 Ibid.

23 Alex Wellerstein, "The President and the bomb," *Restricted Data* (blog), November 18, 2016, <http://blog.nuclearsecrecy.com/2016/11/18/the-president-and-the-bomb/>.

24 Newhouse, *War and Peace*, 43.

For several years after the war, the United States held a firm and rather confident monopoly on nuclear weapons, but could not yet provide itself with a clear description of the atomic bomb's utility. As evidenced in Hiroshima and Nagasaki, the bomb was indeed a fearsome military option, and provided unparalleled destruction per unit, but as the previous bombing campaign against Japan also demonstrated, a similar result could also be achieved conventionally, given enough time and resources. American military planners struggled with this question for years,²⁵ but in the early post-war months, consensus began to form in Washington that there was at the least some coercive political strength to come from brandishing the bomb liberally. The buy-in for this strategy was swift: by the end of 1946, the United States had built 11 additional atomic bombs, but more than doubled its stockpile each year through the end of the decade.²⁶

Another key research and development wing in the American nuclear complex was its bombers and missile development programs. While strategic bombers became a mainstay of World War II warfighting, and were indeed the delivery vehicle for the nuclear bombs against Japan, the development and improvement of jet engines made longer-range bombing missions a reality as soon as 1948. For the 1950s, this capability gave Washington a sense that it could strike into the Soviet Union with nuclear bombs without a great deal of build-up. Strategic Air Command was formed in 1946, and would take special charge of the nation's nuclear-armed bombers. And while Americans were made to worry about a "bomber gap" vis-a-vis the Soviets in the late 1950s, this fear was much overblown: from the 1950s on, Washington would always have an air-deliverable nuclear option via its robust bomber force.

However, the development of long-range ballistic missiles, a brand-new technology for the era, would soon disrupt both strategy and tactics on a global scale. At the end of the war, both the Americans and Soviets scrambled to capture, interview, and "flip" key German rocket scientists. With the help of those researchers, the United States developed and deployed missile systems capable of carrying nuclear warheads, which, in the early 1950s, allowed bases in Europe to threaten Moscow, and by 1960, gave the same

25 Thomas M. Nichols, *No Use: Nuclear Weapons and U.S. National Security* (Philadelphia: University of Pennsylvania Press, 2013), 16-17.

26 Kristensen and Norris, "Global nuclear weapons inventories."

capacity to bases within the American heartland. The deployment of this new technology came rapidly, especially after the USSR's stunning success in launching the world's first satellite in 1956. By the late 1950s, the U.S. had built 45 "Jupiter" nuclear-armed medium-range ballistic missiles for bases in Turkey and Italy and was fielding (and already improving) the first "Atlas" intercontinental-range missiles at home.

Policy and Rhetoric

As for formulating policy to deploy and "use" these new devices, the U.S. pioneered an aggressive and active focus on nuclear weapons, including a heavy focus on hostile rhetoric and high-end development programs to maintain dominance.

During its "monopoly years" 1945-1949, the United States actively leveraged its atomic bomb as an effective pressure point to conduct coercive diplomacy. In March 1946, President Truman made an overt threat to Soviet Ambassador Gromyko in a successful bid to bring the Iran Crisis to a close.²⁷ In mid-July 1948, the U.S. deployed presumably nuclear-capable bombers to England in a more subtle attempt to pressure Moscow to reopen Berlin to ground traffic. By identifying a power-projection quality to possessing the nuclear bomb, Washington set a menacing tone against its adversaries which would ultimately lead to those countries taking action to change this dynamic.

In 1949, the Soviet Union shocked Washington by demonstrating its own atomic device—years ahead of schedule, according to most western experts.²⁸ While it would take the USSR some years more to build up a deliverable weapons capability, the era of American nuclear monopoly was ending much sooner than expected. For American policy, this development sparked a retaliatory arms race, and would soon be codified in the aggressive national security prescriptions of NSC-68 the following year. In line with the findings of that report, the U.S. ended its brief post-war easement,

27 Daniel Ellsberg, "Introduction: Call to Mutiny," in E. P. Thompson and Dan Smith, eds., *Protest and Survive* (New York: Monthly Review Press, 1981), ii.

28 Newhouse, *War and Peace*, 73.

and re-mobilized militarily, raising taxes to reinforce military research and procurement. And while its nuclear advantage was now challenged, American “atomic diplomacy” would continue against other rivals (perhaps the most notable cases of this occurred against Mao’s China during and after the Korean War, where threats of nuclear attack, both coded and overt, were repeatedly made against Beijing for its participation in that war).²⁹

Washington’s vigorous reaction was soon demonstrated by the rapid shift of development resources toward pursuing a new R&D advancement in nuclear weapons technology: the “Super,” a thermonuclear (fusion-based) device which until that point had been considered a less-urgent research path.³⁰ In November 1952, that project resulted in the first successful thermonuclear detonation, demonstrating a massive increase in explosive potential. For Washington, this advancement was initially seen as less of a military necessity and more of a status marker vis-a-vis the Soviet capability: for the USSR to ultimately possess this technology, and the U.S. not to, “would be intolerable” in political terms.³¹ Externally, and publicly, the news of the “H-bomb” added a new data point indicating a rapidly increasing reliance on fearsome new technologies.

But beyond the impressive effect of its R&D gains, American planners had also committed to rapid manufacturing and integration of nuclear weapons into its military doctrines. By this time, the U.S. had already stockpiled 841 nuclear weapons in total and had begun fielding smaller, tactical versions for field deployment, showing an increased integration of nuclear weapons across various military roles.³² Such dispersal of nuclear weapons also served as symbols of commitment to U.S. allies, as bombs and shells were sent to U.S. forces stationed in Japan, Korea, and Europe.³³ In 1954, Secretary of State John Foster Dulles elaborated a bold new strategy designed to counter conventional provocations with overwhelming, sudden nuclear

29 Examples of threats against China will be discussed in further detail in the following section.

30 Newhouse, *War and Peace*, 74-77.

31 Richard G. Hewlett and Francis Duncan, *A History of the United States Atomic Energy Commission*, vol. 2, *Atomic Shield, 1947-1952*, (Washington, D.C.: U.S. Atomic Energy Commission, 1972), 395; *Ibid.*, 78.

32 Shu, “Between ‘Paper’ and ‘Real Tigers,’” 201; Robert S. Norris, William M. Arkin and William Burr, “Where They Were,” *Bulletin of the Atomic Scientists* 55, iss. 6: 26-35.

33 Lee Jae-Bong, “US Deployment of Nuclear Weapons in 1950s South Korea & North Korea’s Nuclear Development: Toward Denuclearization of the Korean Peninsula,” *The Asia-Pacific Journal: Japan Focus* 7, iss. 8, no. 3: 5, <http://apjff.org/-Lee-Jae-Bong/3053/article.html>.

attack.³⁴ His idea, dubbed by his use of the phrase “massive retaliation,” relied on a willingness to liberally issue credible threats of nuclear attack, but would depend on the American monopoly status to be truly effective.

While Dulles’s doctrine was put into place, the U.S. moved to further solidify its commitments to its allies amid their increased fears of the Soviet bomb. By the end of the decade, the United States articulated an aggressive public rhetoric on nuclear weapons, and expanded its warhead stockpile by more than a factor of twenty, ultimately leading the Soviets by more than 10,000 in 1960, and spread its weapons to those contentious Cold War frontiers. Washington’s decision to build its nuclear program so robustly and clearly in these early years would prove to have a strong influence on other nations’ decisions regarding nuclear weapons. By relying so heavily on the bomb as a means of power projection, the U.S. communicated a clear preference for force over diplomacy—a preference which would have far-reaching sway on contemporary and future national nuclear programs: first and especially that of the Soviet Union.

34 Nichols, *No Use*, 18-19.

The Soviet Union

For the Soviet Union, victory in World War II came at a very dear price: with its working-age population ravaged by wartime deaths and its industrial base largely in rubble, Moscow had an extremely different set of national security challenges than did Washington. Still, in these lean times, Stalin viewed the development and deployment of the atomic bomb as a necessity to stave off the looming strategic advantage of the United States. For its first decade, the Soviet development process would be markedly slower than that of the U.S., and for many years the Soviet bomb would pose little real threat, but Moscow's early success in proliferation would communicate loudly to the Americans, and influence the evolving Cold War dynamic almost immediately.

Early Aspirations and Development

The Soviet nuclear program, like its American counterpart, had its roots in laboratories and academies across pre-war Europe, and became an official project of the state during the war.³⁵ Efforts intensified greatly at home through the worst years of the war, and attitudes on the effort became increasingly urgent.³⁶ While Stalin and his entourage reacted calmly to Truman's personal message of the atomic bomb's completion at Potsdam,³⁷ declassified records and memoirs demonstrate that the Soviets were keenly aware of the threat that nuclear weapons could pose to any favorable post-war order.³⁸ Although it is now clear that Truman did not intend to communicate a deliberate threat to the Soviets at that time, Marshall Georgy Zhukov, a key wartime commander and close adviser to Stalin in the

35 "Decree No. 2352 cc of Ukrainian State Committee of Defence," September 28, 1942, History and Public Policy Program Digital Archive, Atomic Project of USSR: Documents and Materials, Vol. 1, Part 1, Document No. 128, 269, <http://digitalarchive.wilsoncenter.org/document/121637>. Obtained and translated for NPIHP by Oleksandr Cheban.

36 Pavel Podvig, *Russian Strategic Nuclear Forces* (Cambridge: MIT Press, 2004), 1-2.

37 V.M. Molotov and Felix Chuev, *Molotov Remembers*, ed. Albert Resis (Chicago: Ivan R. Dee, 1991), 55-56.

38 William Burr and Svetlana Savranskaya, eds., "Previously Classified Interviews with Former Soviet Officials Reveal U.S. Strategic Intelligence Failure Over Decades," The National Security Archive, George Washington University, Washington, D.C., September 11, 2009, <https://nsarchive2.gwu.edu/nukevault/ebb285/index.htm>.

post-war years, interpreted Truman's message as an aggressive boast against the USSR and a preview for a rather aggressive world order to come:

“It was clear already then [at Potsdam] that the [United States] intended to use the atomic weapon for the purpose of achieving its imperialist goals from a position of strength in ‘the cold war.’ This was amply corroborated on August 6 and 8. Without any military need whatsoever, the Americans dropped two atomic bombs on the peaceful and densely-populated Japanese cities of Hiroshima and Nagasaki.”³⁹

At the end of the war, Vyacheslav Molotov reportedly articulated the USSR's deep aspiration for not just nuclear weapons, but to master the domestic benefits of atomic energy, as well.⁴⁰ The debut of America's atomic bombs in mid-1945 only reinforced Soviet resolve to achieve the same. At Stalin's decree that work to obtain the bomb must be conducted “broadly, on a Russian scale,” resources were diverted toward the nuclear project, even though they were sorely needed elsewhere.⁴¹ In mid-1949, Soviet scientists successfully detonated their own version of the American “Fat Man” fission device used on Japan.

The Soviet bomb, rapidly developed to directly counter the precipitously frequent American nuclear threats, was rushed into production even though supply lines for fissionable materials were rudimentary and the USSR had no reliable delivery method at the time.⁴² Compounding those problems was Stalin's rather stubborn outlook on military affairs, which was strongly influenced by his experience defeating Germany in World War II, and was less suited to understanding the rapid developments of the nuclear age. Thus, in the first few years, production of deployable bombs lagged markedly behind that of the U.S., but after Stalin's death in 1953, Khrushchev's “revolution in military affairs” would finally shift Moscow's

39 Georgi Konstantinovich Zhukov, *The Memoirs of Marshal Zhukov* (New York: Delacorte Press, 1971), 674-675.

40 Newhouse, *War and Peace*, 57.

41 “Notes on the discussion between I.V. Kurchatov, lead scientist for the Soviet nuclear effort, and Stalin,” January 25, 1946, History and Public Policy Program Digital Archive, From Personal notes of I.V. Kurchatov, Archive of the Russian Scientific Center “Kurchatov Institute,” Fond 2, Opis 1/c, Document 16/4, printed in Yuri Smirnov, “Stalin and the Atomic Bomb,” *Voprosy istorii estestvoznaniia i tekhniki* [Questions on the History of Science and Technology] 2 (1994), 125-130, <http://digitalarchive.wilsoncenter.org/document/111533>.

42 Podvig, *Russian Strategic Nuclear Forces*, 4-5.

priorities toward countering the threat of American surprise nuclear attack.⁴³ By 1955, this shift resulted in a Soviet stockpile of approximately 200 warheads.⁴⁴ By 1960, industrial advancements would raise that figure to over 1,600, and the development of fearsome new missile technologies raised the pace of development even further vis-a-vis the United States.

The Soviets exercised one great advantage over the United States in its prowess developing such missile systems. In 1959, Khrushchev established the Strategic Rocket Forces as a separate service and reorganized many supporting industries and research facilities to support missile development.⁴⁵ The new forces deployed with a fearsome fleet of rocket, including the R-7A, the world's first true intercontinental-range ballistic missile. The 1960s would see a rapid expansion of the Soviet ICBM force, eventually reaching a peak of about 1,500 launchers in 1970.⁴⁶ And while the Americans deployed their first ICBM in the same year (and even led the USSR in missile count for a time), the Soviets success in a number of rocketry-based fields (including notably in these years, its space program) would fuel much consternation in Washington for the duration of the Cold War.

Policy and Rhetoric

But if the frantic pace of Soviet development was similar to that of the U.S. (even if lagging behind), the attitudes supporting the development and use of nuclear weapons was quite different. Owing to the great losses suffered during World War II and its vast geographic expanse, the Soviet Union held a distinctly resilient outlook on the potential horrors of nuclear war. Khrushchev's shift toward a nuclear focus also saw a new philosophy of warfighting and survival emerge in Moscow. As a Red Army general put it in 1955:

The duty of the Soviet armed forces is not to permit an enemy surprise on our country and, in the event of an attempt to accomplish one, not only to repel the attack successfully but also to deal enemy

43 Raymond L. Garthoff, *The Soviet Image of Future War* (Washington, D.C.: Public Affairs Press, 1959), 61.

44 Kristensen and Norris, "Global nuclear weapons inventories."

45 Podvig, *Russian Strategic Nuclear Forces*, 5.

46 Stephen I. Schwartz, ed. *Atomic Audit: The Costs and Consequences of U.S. Nuclear Weapons Since 1940* (Washington, D.C.: Brookings Institution Press, 1998), 187, fig. 2-3.

counter blows, or even pre-emptive surprise blows, of terrible destructive force. For this the Soviet army and navy possess everything necessary.⁴⁷

Indeed, this emerging attitude of resilience drew upon themes in Marxism-Leninism that resonated with Soviet leadership, the vast majority of whom were war veterans who were active in the Party since the October Revolution. In March 1956, following his infamous “Secret Speech” realigning many of the USSR’s Stalinist mechanisms and beliefs, Nikita Khrushchev nonetheless affirmed the almost righteous strength nuclear weapons gave the Soviets: “[The Americans] know that we have all these things [missiles and thermonuclear weapons], and therefore, they have to talk to us, fight with us; but not be afraid... this is a game, in which nobody will be a winner.”⁴⁸

Nonetheless, in some ways, the Soviets pursued a similar approach to that of the Americans when it came to leveraging the bomb for political gain. Notably, Moscow extended to Mao guarantees that China would fall within its rather tentative “nuclear umbrella,” both as a hopeful bulwark against American meddling and an incentive for China to not pursue its own nuclear weapons. As a matter of power-projection, the threat of Soviet nuclear attack would back every Cold War activity and conflict—in terms of strategic communication, nuclear weapons were not a passive factor or necessarily even a “last resort” option for Moscow at times.

By 1960, just a decade from its first atomic bomb test, the Soviet Union stood as a gaining competitor to the United States in the field of nuclear weapons. Despite having an economy less than one-third as robust as their American rivals (as a measure, the USSR’s GDP per-capita in 1949 was \$2,623, compared to the U.S at. \$8,944),⁴⁹ the Soviet Union had not just developed the atomic bomb, but followed closely the United States in developing their own

47 P.A. Rotmistrov, “On the Role of Surprise in Contemporary War,” *Voennaya Mysl*, no. 2 (February 1955). Quoted in Lawrence Freedman, *The Evolution of Nuclear Strategy*, 3rd edition (London: Palgrave Macmillan, 2003).

48 “Speech by Comrade Khrushchev at the 6th PUWP CC Plenum, Warsaw,” trans. L.W. Gluchowski, March 20, 1956, History and Public Policy Program Digital Archive, AAN, (Archive of Modern Records) PZPR 2631 Materialy do stosunkow partyjnych polsko-radzieckich zlat 1956-1958, “Przemowienie tow. Chruszczowa na VI Plenum K.C.,” 14-87, <http://digitalarchive.wilsoncenter.org/document/111920>.

49 The Maddison-Project, 2013 version, <http://www.ggdc.net/maddison/maddison-project/home.htm>. Figures are in 1990 Int. G-K dollars.

thermonuclear weapon in 1953, and pioneered intercontinental ballistic missile technology before the end of the decade. In these years, Moscow became comfortable with playing a “spoiler” role to the American post-war triumphalism, and communicated to the world that nuclear weapons would not just be the domain of high tech, prosperous nations.

The United Kingdom and France

The United Kingdom and France, by comparison to the U.S, and USSR, remained minor nuclear players in the years covered by this section. Still, several key aspects of their respective programs would be especially noteworthy with regards to aspiring world powers. The U.K. put a very high value on being able to keep up with the latest technological breakthroughs, and France, while proliferating a decade later, would make a keen point of its independence in this area.

Like their erstwhile ally USSR, the United Kingdom claimed victory in World War II at a very high price. With a great deal of industry destroyed and a great proportion of urban areas in ruins thanks to German bombing during the Battle of Britain, reconstruction and economic vitality was paramount through the 1950s. But beyond what construction crews and foreign aid could provide, the British felt a strong need to remain an established power in international affairs. Like the Soviets, the British leadership concluded that possession of nuclear weapons would provide the necessary clout and credibility to retain “great power” status.

At the end of the war U.K. had a key advantage that the USSR did not: an enduring ally and benefactor in the United States. While the British nuclear program was independent of the American one (and in fact provided key scientists and knowledge to the Americans during the war),⁵⁰ a key post-war understanding of British leaders was that the U.S. would consider the bomb a joint development, or at least share findings and data from the Manhattan Project. Frustratingly for London, the

50 Newhouse, *War and Peace*, 36.

Americans were hesitant to come forward with information and technology related to their atom bomb.⁵¹

Nonetheless, the British committed to developing their independent nuclear force, fearful of the strength of their alliance with the U.S. In October 1952, they succeeded in their efforts, exploding their first fission device in western Australia. In doing so, they had expanded the nuclear club to three, and made a bold statement that the U.K. was as capable and advanced as their American friends and Soviet rivals.

Despite the early success, production of bombs and delivery systems would come slowly for the British. By 1955, they had fielded just 10 bombs, and by the end of the decade, would have built 105.⁵² By virtue of its membership in NATO, the British would feel less pressure to build a vast, global nuclear arsenal, and its disposition largely focused on fielding a suitable deterrent to prevent Moscow from bombing London. But, like the French, the British were wary of American nuclear promises to defend Europe, and maintained for the length of the Cold War that its independent nuclear capability would be a crucial part of its overall national security.

The French nuclear program also had pre-war roots, but would not result in the development of a bomb until 1960. In the years covered by this section, France was a very preliminary player, with only a few statements and pieces of public information leading up to its proliferation. Still, its decision to proliferate would leave an impression on global attitudes and beliefs about nuclear weapons: the “club” was expanding, and it was becoming the norm for advanced nations to possess their own bomb.

This belief was building even after the British proliferation in the early part of the 50s, and would come to enter both the public discourse and the planning rooms of world capitals. As industrial and consumer technology improved by leaps and bounds through post-war reconstruction, it fostered an environment in which it seemed inevitable that the great and terrible secrets of the bomb would, eventually, become demystified and commonplace.

51 Ibid., 130.

52 Kristensen and Norris, “Global nuclear weapons inventories.”

Paris's success served to solidify these fears, and the issue of continued nuclear proliferation became a key focus of that year's U.S. elections. As then-Presidential candidate John F. Kennedy would predict just seven months later, "there are indications because of new inventions, that 10, 15, or 20 nations will have a nuclear capacity, including Red China, by the end of the Presidential office in 1964. This is extremely serious. . . I think the fate not only of our own civilization, but I think the fate of world and the future of the human race, is involved in preventing a nuclear war."⁵³

Lessons for China

The years 1945-1960 marked the world's entry into the nuclear age. Beginning with America's attacks on Hiroshima and Nagasaki, the advent of nuclear weapons became a central focus of international affairs, as the bomb increased both in number and capability each year. While this landscape developed, several distinct behaviors and trends emerged as the members of the growing nuclear club attempted to extract the most benefit from their weapons. For the young PRC, these developments would closely inform their high-level strategies as Beijing worked to navigate the early days of the Cold War.

In terms of raw numbers and rates of proliferation, nuclear weapons would almost immediately become a field of rapid development and expansion. According to data compiled by Kristensen and Norris, the first decade of a country's nuclear-armed era saw rapid growth in one of two tracks: ten years on from the date of its first test, the U.S. would build 2,422 warheads and the USSR 863, while the U.K. would build 271 and France 145.⁵⁴ The "fast track" taken by the Americans and Soviets represented what is traditionally referred to as the "Cold War arms race," while the somewhat slower pace of the U.K. and France would represent a more restrained, yet still very active alternative approach. On average, the total number of nuclear weapons in the world would increase by 53% each year in the 1950s.⁵⁵

53 John F. Kennedy and Richard Nixon, "The Third Kennedy-Nixon Presidential Debate," October 13, 1960.

54 Kristensen and Norris, "Global nuclear weapons inventories."

55 Ibid.

Amid this rapid build-up, qualitative policies depending on nuclear strength would communicate forceful new dispositions and norms to the international arena. The United States emerged as the main protagonist in this area, as it brandished its nuclear monopoly repeatedly until the Soviets managed to field an effective nuclear capability in the late 1950s. Washington simultaneously aimed to rely more on the bomb in its military strategies and deployments, allowing the drawdown from a wide and intensive deployment of soldiers around the world that was seen as unsustainable.⁵⁶ Both the U.S. and USSR valued the bomb's symbolic strength, too—both viewed it as an effective means of bolstering its alliance commitments and shoring up its own international standing without deploying forces. Washington and Moscow both cast “nuclear umbrellas” over their interests, with the implication that both powers were willing to initiate nuclear warfare in response to attacks on its frontiers. Moscow's guarantees notably covered China for a time. Meanwhile, statements extolling the achievements of national bomb programs, however secretive they remained to the public, would set an aggressive tone that established nuclear weapons capability as a requirement for great power status. The eventual nuclearization of each of the permanent members of the United Nations Security Council (except the Republic of China exile government, which held a seat until 1971) would underscore that norm.

For Mao, it was this second category of developments that impacted his country more directly. Thanks to his ideological disposition, it was easier for him to dismiss the debut and quickly growing presence of nuclear weapons internationally as bourgeois tools—as a crutch by which advanced nations could over-extend their influence. But when it came to the realities of China facing off against the nuclear-based threats of the United States, his ideology would begin to bend and crack. His dismissals of nuclear arms continued, but an evolution in domestic policy would also take form. The next sections will explore in depth the instances in which China received one-sided nuclear threats from the United States, illustrating how Mao's beliefs (and dictates) on the bomb responded and changed over time.

56 John Foster Dulles, “The Evolution of Foreign Policy,” (speech, Council on Foreign Relations, New York City, NY, January 12, 1954). See also: John Foster Dulles, “Policy for Security and Peace,” *Foreign Affairs*, April 1954, 353–364.



A Steady Threat

A U.S. Air Force B-29 bombs Chinese-North Korean positions, February 1951. (Dept. of Defense)

“Atomic Diplomacy” — the People’s Republic of China Under Nuclear Threats in the 1950s

The People’s Republic of China’s first decade was a tumultuous one, as it contended with a muted welcome from the Soviet Union and an outright hostile reception from the United States. Very shortly after its official founding, PRC soldiers would be fighting American forces in Korea, and Washington would quickly wield the prospect of nuclear destruction on Beijing.

In these years, Washington sought to exert maximum pressure on the unrecognized government in Beijing, and American leaders found a reliable method of this in making unrequitable threats of nuclear attack as a coercive diplomatic strategy.⁵⁷ Truman successfully used such “atomic diplomacy” tactics in 1946 and 1948 against Stalin in the Iran Crisis and the Berlin Blockade, respectively.⁵⁸ But it wasn’t until 1950 and the outbreak of war in Korea that such atomic diplomacy tactics were employed in East Asia.

The Korean War, 1950-1953

While the geopolitical polarity of the Cold War froze Europe, it would repeatedly come to ignite East Asia. The first such conflagration began on June 25, 1950 when, with the explicit support of Stalin, Kim Il-sung led the Democratic People’s Republic of Korea (North Korea) in an invasion of the Republic of Korea (South Korea). Beyond an internal civil war, the ideological split between communist North and nationalist South made the Korean peninsula the first site for worldwide east-west proxy conflict. The United States and its allies, under the auspices of the United Nations

57 Roger Dingman, “Atomic Diplomacy during the Korean War,” *International Security* 13, no. 3 (Winter 1988-1989): 50-53.

58 Ken Young, “US ‘Atomic Capability’ and the British Forward Bases in the Early Cold War,” *Journal of Contemporary History* 42, no. 1 (January, 2007): 118.

Security Council,⁵⁹ reacted swiftly to intervene and prevent a complete Northern takeover of the Korean peninsula. The Soviet Union and China meanwhile provided strategic and material assistance to the North Korean campaign.

Initially a desperate situation for the South Korean forces, American General Douglas MacArthur led a daring and highly successful amphibious invasion behind enemy lines, at Inchon. In short time, the UN forces would make sweeping territorial gains all the way to the Chinese border, before being pushed back beyond Seoul in the South by a PLA-dominated counterattack. After the spring of 1951, few gains were made by either side, and the conflict resulted in a years-long stalemate.

But the UN's initial landing at Inchon would not prove to be the key turning point of the Korean War. Rather the Chinese entry with ground troops in October 1950 would fully blunt the U.S.-led forces, and set a dangerous stage for the possibility of a wider conflict—conventional or otherwise. When the PLA began its counterattack across the Yalu River, U.S. officials were alarmed at the overt and direct action taken by Beijing, and feared that the widening of this conflict (e.g. American or UN attacks on China itself) would ultimately escalate to a broader east-west war in Europe as well. One week after the Chinese entry, Truman bleakly lamented in his journal that “it looks like World War III is here.”⁶⁰

Given these fears, and the knowledge that they alone held a clear advantage in nuclear arms (for now), U.S. policymakers did not hesitate to explore new, aggressive measures to contain the war. While General MacArthur, commander of the UN forces in Korea, had previously developed various plans for (and advocated for) the use the atomic bomb in a tactical capacity,⁶¹ it wasn't until the Chinese “surge” that his ideas became a serious consideration for top decision-makers. Truman indicated in a November 30, 1950 press conference that the entry of Mao's PLA troops was a

59 The Soviets infamously chose to boycott the UNSC at this time, but would immediately reverse course and exercise its boycott in subsequent matters involving Korea.

60 Harry S. Truman, Diary entry, December 9, 1950, Papers of Harry S. Truman: President's Secretary's File, Harry S. Truman Presidential Library and Museum, https://www.trumanlibrary.org/flip_books/index.php?ldate=1950-12-09&groupid=3725&titleid=&pagenumber=1&collectionid=ihow.

61 Conrad C. Crane, “To Avert Impending Disaster: American Military Plans to Use Atomic Weapons During the Korean War,” *Journal of Strategic Studies* 23, iss. 2 (2000): 72-88.

game-changing development, and fielded a question about whether the U.S. would use the atom bomb, replying that indeed the current planning, “includes every weapon that we have.”⁶² Strategic Air Command (then the primary military arm in charge of America’s nuclear weapons) was subsequently placed on alert for potential operations in Korea.⁶³

As the now Chinese-dominated Northern forces pushed southward to retake Pyongyang and force the U.N. forces back below the 82nd parallel, General MacArthur again asked for permission to widen wartime operations by attacking targets in Manchuria proper, including permission to use nuclear weapons against Chinese bases,⁶⁴ and complained publicly when he did not get his way.⁶⁵ European allies of the U.S. were alarmed at the prospect. They feared that a full-scale UN conflict with China would leave them vulnerable to Soviet aggression in Europe, and the introduction of nuclear weapons would surely accomplish as much. British Prime Minister Attlee flew to Washington to protest the perceived severity of the developing situation in 1951.⁶⁶ For going public, MacArthur was taken out of command, but for outside observers—most crucially Mao—the public nature of this debate would convey a tenuous (and perhaps receding) amount of restraint among Western allies, and particularly such zealous statements by MacArthur would ring over the conflict for a long time.

Nonetheless, American rhetoric and posturing continued to increase in severity as the Korean conflict drew to a grinding stalemate. Perhaps the most overt gesture to intimidate the communist forces in this period was “Operation Hudson Harbor,” a September-October 1951 set of exercises for strategic bombing training in which lone U.S. bombers dropped dummy atomic bombs (containing only conventional explosives) on Korean targets like Pyongyang in preparation for a real nuclear attack which seemed (and

62 Harry S. Truman, “The President’s News Conference,” November 30, 1950. Online by Gerhard Peters and John T. Woolley, The American Presidency Project, <http://www.presidency.ucsb.edu/ws/?pid=13673>.

63 McWilliams and Piotrowski, *The World Since 1945*, 69.

64 Thomas C. Hone, “Strategic Bombing Constrained: Korea and Vietnam,” in *Case Studies in Strategic Bombardment*, ed. R. Cargill Hall (Washington, D.C.: Air Force History and Museums Program, 1998), 479.

65 Associated Press, “General Critical; He Says Orders Barring Attacks on Manchuria Aid Chinese Invaders an Undeclared War on Foe Using 600,000 Men, States MacArthur in Tokyo” *New York Times*, December 2, 1950.

66 Newhouse, *War and Peace*, 84.

was deliberately made to seem) more and more imminent with each day.⁶⁷ Even though the world was still learning to fathom the full power of nuclear weapons (by this time in 1951, only the U.S. and USSR had built them, and only one public test had been held), these exercises would have certainly been a terrifying specter for troops and observers in Korea to endure.

After President Eisenhower's inauguration in 1953, the U.S. made a redoubled attempt to bring the war to an end, and would come to lean heavily on its nuclear advantage as a primary means of pressuring the Chinese. In a matter of weeks, the Joint Chiefs of Staff expanded their wartime attack recommendations to the President to include nuclear strikes on Chinese territory. In a subsequent unusually highly publicized press event, twenty additional nuclear-armed bombers were transferred to Kadena air base in Okinawa, well within range of Beijing and sites in Manchuria.⁶⁸ In May, the Chairman of the Joint Chiefs recommended a plan calling for "extensive strategical and tactical use of atomic bombs," in the case that armistice negotiations fell through.⁶⁹ Soon after, a rare, direct overture was made to Beijing via delivery by the Indian Prime Minister Jawaharlal Nehru, with whom Secretary of State Dulles met to convey that determination.⁷⁰

The consideration to attack with the atomic bomb to end the stalemate was serious in these efforts, but records show that Eisenhower first and foremost hoped to achieve success using this threat alone.⁷¹ While the efficacy of these overtures is yet unclear (Prime Minister Nehru later denied making contact with Chinese officials to convey Dulles's threat, for example)⁷² the tactic was successful in Eisenhower's eyes⁷³—in July, Beijing made key concessions, and an armistice agreement was signed, bringing an end

67 Bruce Cumings, "Korea: Forgotten Nuclear Threats," *Le Monde Diplomatique*, December 8, 2004, <http://kit.mondediplo.com/spip.php?article4077>.

68 U.S. Department of State, "Memorandum of Discussion at the 131st Meeting of the National Security Council, Wednesday, February 11, 1953," *Foreign Relations of the United States, 1952-1954: Korea*, 770.

69 U.S. Department of State, "Memorandum by the Joint Chiefs of Staff to the Secretary of Defense (Wilson), May 19, 1953," *Foreign Relations of the United States, 1952-1954: Korea*, 1062.

70 Todd S. Sechser and Matthew Fuhrmann, *Nuclear Weapons and Coercive Diplomacy* (Cambridge, U.K.: Cambridge University Press, 2016), 175-176.

71 McWilliams and Piotrowski, *The World Since 1945*, 69.

72 For more on doubts that nuclear threats were directly conveyed to Beijing, see Sechser and Fuhrmann, *Nuclear Weapons and Coercive Diplomacy*, 177-178 and Lewis, *Paper Tigers*, 16-18. Nonetheless, evidence here shows that indirect threats such as media reports and military deployments were received by China.

73 Lewis and Xue, *China Builds the Bomb*, 14.

to the fighting along the 38th parallel. The American belief that its atomic diplomacy efforts were successful would prove a key lesson in the first Taiwan Strait Crisis, just a year away.

For their part, the PRC leadership reacted resolutely to such coercive attempts during the Korean conflict. Strategists in Beijing are said to have taken such threats and provocations seriously, but remained defiant and looked for ways to resist the overwhelming imbalance, both in tactical (battlefield) terms, but also in promoting domestic strength-of-will. During the height of the war, the PLA was given orders to construct deep-earth nuclear bunkers in Korea and in the northeastern provinces, and even claimed to purposefully leak such projects to foreign spies in order to communicate its own readiness against a nuclear attack.⁷⁴ Whether the effect of these “digging-in” projects was in turn reflected in American strategy is unknown,⁷⁵ but the assertive receipt of incoming nuclear threats demonstrated Beijing’s defiance and willingness to absorb severe and menacing rhetoric while sticking to their own plans.

During this conflict, as the United States was committed to wielding its nuclear advantage for the sake of eroding communist resolve and forcing an armistice, the PRC was equally committed to approaching negotiations with a hard-nosed determination to maintain strength at the table. According to one account, the Chinese assessment was that “there was no point in the [North] Korean-Chinese side’s making concessions because any such concessions would be perceived by the other as a sign of weakness.”⁷⁶ Though this strategy and process may well have prolonged the hostilities for a time, the Korean War did come to a tenuous stalemate, with China (and Korea) having evidently outlasted and endured the worst of America’s nuclear threats. An armistice was signed on July 27, 1953, and remains the solution on the Korean peninsula today.

The severity of American rhetoric and posturing during the fighting in Korea clearly made it a very dangerous case of atomic diplomacy, in terms of likelihood of eventual attack. Truman and MacArthur were committed to the notion that the atomic bomb would eventually be used if a

74 Lewis and Xue, *China Builds the Bomb*, 15-16.

75 Ibid.

76 Lewis and Xue, *China Builds the Bomb*, 15.

breakthrough wasn't reached,⁷⁷ and this outlook was continued under Eisenhower's direction as efforts to end the war intensified. Fortunately, Eisenhower's late-war gambit to institute a surge in U.S. atomic capability in Asia shortly preceded a cease-fire. In retrospect, that deployment may have been one of the last opportunities for diplomacy in Korea before the introduction of nuclear attack.

The First Taiwan Strait Crisis, 1954-1955

While the PRC was resistant to the looming specter of nuclear attack through the Korean War, Beijing would only have a year before again receiving threats of nuclear attack from the U.S. In 1954-55, both sides again clashed over the subject of Taiwan, this time beginning as PRC forces shelled the contested islands of Quemoy and Matsu in the Taiwan Strait. In this new confrontation, Washington wasted no time in considering nuclear weapons use on mainland China—and communicated that readiness swiftly.

The conflict, borne out of a 1953 decision by the U.S. to lift the blockade on both sides of the Taiwan Strait, allowed the Republic of China to position forces on smaller, forward islands, notably Quemoy and Matsu, which had tactical value in the event of an amphibious invasion of Taiwan from the PRC. In August 1954, nationalist troops on both islands numbered almost 75,000. This move was seen as highly provocative in Beijing, which soon ordered artillery barrages on both islands, despite U.S. warnings.

In response to what was seen as a brazen attack, Washington determined to strategically position nuclear weapons earlier—and more seriously—than during Korea. As early as September, the Joint Chiefs advised the use of nuclear weapons against PRC in order to stem what they viewed as a potentially dangerous escalation.⁷⁸ In December, complete nuclear weapons were delivered to the U.S. airbase on Okinawa (in previous instances, nuclear bombs were deployed to such without their fissile pits, which would be added separately in case an attack order was given), and

⁷⁷ Sechser and Fuhrmann, *Nuclear Weapons and Coercive Diplomacy*, 176.

⁷⁸ Sechser and Fuhrmann, *Nuclear Weapons and Coercive Diplomacy*, 177.

the nuclear-armed aircraft carrier *Midway* was positioned in the Taiwan Strait.⁷⁹ The reactionary surge of American nuclear weapons into the theater was not just more rapid, but also more severe (in terms of operational readiness) than in the Korean War.

Such a swift push toward nuclear brinkmanship would continue publicly in the new year. In March 1955, Secretary of State Dulles advised the National Security Council that “the American people have to be prepared for possible nuclear strikes against China.”⁸⁰ The following day, Eisenhower backed that position publicly, stating in a news conference, “I see no reason why [nuclear weapons] shouldn’t be used just exactly as you would use a bullet or anything else,”⁸¹ lowering once again the perceived barrier for Washington to authorize the use of nuclear weapons—and communicating clearly to Beijing a very low threshold for resistance in this crisis.

Beijing took a special exception to Washington’s tone in this conflict, criticizing loudly Eisenhower’s “boasting” of the view of nuclear weapons as conventional ones.⁸² In a break with its previous dismissive statements rooted in ideology, the PRC leadership seemed to have a more fearful belief about America’s intent, and took further concrete steps to prepare for possible incoming nuclear attack.⁸³ Mao, too, broke with his usual downplaying approach, giving an uncharacteristically fearsome, if not odd, account of the bomb in his discussion with the Finnish Ambassador: “Even if the U.S. atom bombs were so powerful that, when dropped on China, they would make a hole right through the earth, or even blow it up, that would hardly mean anything to the universe as a whole, though it might be a major event for the solar system.”⁸⁴

While the first Taiwan Strait Crisis was much shorter-lived than the Korean War, the greatly more rapid and forceful positioning of American nuclear weapons as a pressure point on China would have a far greater effect on Beijing’s overall views—and crucially, on Mao’s beliefs regarding nuclear weapons.

79 Norris, Arkin and Burr, “Where They Were,” 30.

80 Ibid., 30-35.

81 Dwight D. Eisenhower, “The President’s News Conference,” March 16, 1955. Online by Gerhard Peters and John T. Woolley, The American Presidency Project, <http://www.presidency.ucsb.edu/ws/?pid=10434>.

82 Shu, “Between ‘Paper’ and ‘Real Tigers,’” 200.

83 Ibid.

84 Mao, “The Chinese People Cannot Be Cowed.”



Evolving Ideology

Artwork from a Chinese propaganda poster featuring Mao, circa 1966.



Mao's Evolving Calculus: From “Paper Tigers” to National Security Necessity

In the 1950s, the PRC endured not only this litany of incoming nuclear threats from the United States, but was also forced to navigate a serious test of national economic, political, and even industrial resolve thanks to the lingering devastation from the war with Japan and the resumption of the Civil War, and more recently, the losses incurred over the war effort in Korea. Politically, the American nuclear threats served to put the Chinese people on edge, and erode some credibility and strength of the CCP domestically.⁸⁵ Throughout these times and experiences, Mao held rapidly evolving views on the specter of nuclear weapons, and this transformation ultimately led to the launching of China's nuclear program. His views and dictates on the matter, while not monolithic within China or the Communist Party, were nonetheless the most influential in not only building a rationale for China's program, but also informing its military and diplomatic strategy in the years following their proliferation.⁸⁶

Mao's Philosophical Roots

Mao's unique strategic outlook was heavily guided by the teachings of ancient Chinese strategist Sun Tzu, who held human characteristics like conviction and discipline above the advancements of technology.⁸⁷ This foundation found a robust framework in his brand of Marxist-Leninist philosophy, where high technology was seen as a bourgeois crutch to gap what could be done with human power and compelling ideology.⁸⁸ In his 1938 lecture, *On Protracted War*, Mao extolled the necessity of “conscious activity of man” in war, explaining that human characteristics, not technology, would ultimately defeat the Japanese in that war: “whatever is done

85 Shu, “Between ‘Paper’ and ‘Real Tigers,’” 200.

86 Lewis and Xue, *China Builds the Bomb*, 5-7.

87 Shu, “Between ‘Paper’ and ‘Real Tigers,’” 195

88 Lewis, *Paper Tigers*, 20-22.

has to be done by human beings, protracted war and final victory will not come about without human action.”⁸⁹

Mao’s was the philosophy that leadership, geographic mastery, and the fervent zeal of the people could carry a nation through conflict, even against foes with far superior armaments and capabilities.⁹⁰ As the PRC fought to establish itself, Mao would profess this philosophy frequently, making high-visibility public statements and effectively marshalling his troops. Mao would later praise his victory against the Kuomintang in the civil war as an example of how willpower and spirit prevails in an unbalanced situation, and in at least a narrow sense, he was right.⁹¹

Soon following the end of World War II, and while mainland China was still in contest, Mao was among the first outspoken critics of the nuclear age. In August 1946, he granted an interview to American journalist Anna Louise Strong, and made what would become a keystone statement on his view of nuclear weapons:

The atom bomb is a paper tiger which the U.S. reactionaries use to scare people. It looks terrible, but in fact it isn’t. Of course, the atom bomb is a weapon of mass slaughter, but the outcome of a war is decided by the people, not by one or two new types of weapon.⁹²

That statement thoroughly encapsulated Mao’s dismissive views on the yet-mysterious new “superweapon,” and further underscored his outlook on power in general. Later, in a heated moment during the Taiwan Strait Crisis, he would explain in a conversation with the Finnish Ambassador that, “In the case of the United States, [their mainstay] is planes plus the A-bomb. However, if the United States with its planes plus the A-bomb is

89 Zedong Mao, “On Protracted War,” (lecture series, Yen-an Association for the Study of the War of Resistance Against Japan, May 26-June 3, 1938).

90 Lewis and Xue, *China Builds the Bomb*, 7

91 “Talk by Mao Zedong at an Enlarged Meeting of the Chinese Communist Party Central Committee Politburo (Excerpts),” April 25, 1956, History and Public Policy Program Digital Archive, Mao Zedong wenji (Selected Writings of Mao Zedong), vol. 7 (Beijing: Renmin chubanshe, 1999), 27. Translated by Neil Silver, <http://digitalarchive.wilsoncenter.org/document/114337>; McWilliams and Piotrowski, *The World Since 1945*, 58.

92 “Talk with the American Correspondent Anna Louise Strong,” August 06, 1946, History and Public Policy Program Digital Archive, Mao Zedong xuanji (Selected Works of Mao Zedong), vol. 4 (Beijing: Renmin chubanshe, 1996), 1191-1192. Translation from the Ministry of Foreign Affairs of the People’s Republic of China and the Party Literature Research Center under the Central Committee of the Communist Party of China, eds., *Mao Zedong on Diplomacy* (Beijing: Foreign Languages Press, 1998), 45-48. <http://digitalarchive.wilsoncenter.org/document/121327>.

to launch a war of aggression against China, then China with its [mainstay of] millet plus rifles is sure to emerge the victor.”⁹³

In the CCP, too, dismissal of nuclear weapons as a paradigm shift in warfare was an extension of a key foundational understanding of the world. In December 1950, the party published a study named “The Bankruptcy of US Imperialist Nuclear Diplomacy,” which postulated, “[one atomic bomb] is merely as powerful as the yield of 3,000 tons of conventional bombs,” and compared the conventional devastation wrought upon the USSR by Germany in 1941 to that of at least one hundred atomic bombs. “But the Soviet Union won the final victory.”⁹⁴

Through this ideological lens, it is not surprising that Mao would deride nuclear weapons, the amazing and terrible technology owned only by the United States, as a “paper tiger.” For him and fellow leaders in Beijing, the bomb was just another piece of imperialist technology which could be overcome with revolutionary struggle.

But while Mao’s highly resistant and disdainful view on nuclear weapons was thus an extension of his firmly rooted ideology, it would be forced to endure a harsh test at the hands of the United States. For the PRC to enter the nuclear club was philosophically unthinkable at its founding in 1949, but less than a decade later, preparations would be underway in earnest for an independent Chinese bomb. In these years, then, Mao’s beliefs had undergone a major transition. Fueled by the experience of unrequitable nuclear threats by the Americans during the Korean War, and ignited by the sudden reappearance of nuclear brinkmanship in the first Taiwan Strait Crisis, this transition would result in the reluctant order for a national nuclear program to stave off future menace.

93 Mao, “The Chinese People Cannot Be Cowed.”

94 As translated in Shu, “Between ‘Paper’ and ‘Real Tigers,’” 196.

Resolutely Facing Nuclear Threats in Korea

In 1950, the United States reacted forcefully to the news of Soviet nuclear proliferation, adopting a bold, affirmative anticommunist strategy worldwide. While NSC-68 was officially a secret kept within the Pentagon, the machinations and effects of such a shift in American were apparent to outside observers almost immediately. The American shift was unofficially dubbed the “New Look,” and Chinese officials became keenly aware of Western press reports (and their own intelligence sources) which began to provide insight into the changes within the U.S. military, illustrating not just a more active and antagonistic foe, but one which could develop unbelievable methods and abilities faster than any other.⁹⁵ If the nuclear bomb was a mysterious subject in the late 1940s, the seemingly unending feats of American technological progress provided an enduring backdrop of fear and uncertainty as the Cold War moved into the 1950s.

Thus, as the PLA faced down far-superior American (and UN coalition) counterparts in late 1951, the looming shadow of America’s nuclear ability became a more pressing issue for Mao. In Korea, despite Soviet supply, guidance, and even aerial reinforcement in the war, Chinese forces were once again subjected to great disparity in terms of military technology and overall battlefield control. Washington meanwhile reacted to the Chinese entry into the war by escalating nuclear-backed rhetoric and posturing, adding pressure to an already difficult position for Mao. In this conflict, his confident declarations that nuclear weapons were “paper tigers” would be first challenged, as the American strategy of assertive nuclear pressure found repeated use.

Through the Korean conflict, most of the American threats of nuclear attack were indirect, including open discussions in the press and opaque deployment of nuclear-capable forces in the region, but it is nonetheless clear that these indirect messages had an impact among PRC decision makers. Logistical orders such as the building of nuclear bunkers and redoubled air defenses, and social orders like the publication of

⁹⁵ Lewis and Xue, *China Builds the Bomb*, 16-19.

propaganda encouraging the Chinese people to not fear the atom bomb belie the previously resolute public position of Beijing.⁹⁶

Mao, too, had difficulty remaining steadfast in the face of American nuclear pressure. Despite his prior assuredness, he displayed perhaps some brooding resignation in late 1950, writing that, “if the U.S. strikes with atomic bombs, we have none and can only allow it to strike. This is something that we cannot resolve.”⁹⁷ While making no endorsement of nuclear weapons as a solution to that dilemma, Mao made the crucial point that, in the face of America’s nuclear might, PRC had no recourse at all to deter (or respond to) a devastating attack on neither Pyongyang or Beijing. By this time, the Soviet Union had extended to PRC guarantees of falling within its rather tentative “nuclear umbrella,” but such promises were not seen as reliable by the Chinese, who despite a gracious public campaign, privately feared that any test of that uncertain promise could result in a disastrous failure.⁹⁸

As the war in Korea dragged on, and Chinese/Korean forces were repeatedly subjected to the tactics of atomic diplomacy as described previously, Mao’s anti-nuclear views had by this time been stretched and tested to a greater extreme as his forces became drawn out and more desperate. But by 1953, the Korean War fell into a stalemate which, while costing the PLA dearly, gave way to an armistice in July which seemed to vindicate Mao’s steadfast approach to handling such incoming threats.

The Taiwan Strait Crisis Turning Point

Unfortunately for China, it would only be a year before the antagonistic relationship with the United States would flare again. At the beginning of the first Taiwan Strait Crisis, partly fueled by signals from the Eisenhower administration that belief in the viability of limited nuclear war had risen sharply in Washington, Beijing was more cautious about facing down a

96 Shu, “Between ‘Paper’ and ‘Real Tigers,’” 197-198.

97 As translated in M. Taylor Fravel and Evan S. Medeiros, “China’s Search for Assured Retaliation: The Evolution of Chinese Nuclear Strategy and Force Structure,” *International Security* 35, no. 2 (Fall 2010), 58.

98 Shu, “Between ‘Paper’ and ‘Real Tigers,’” 195.

more forceful American build-up: beyond the dismissive propaganda efforts seen previously, a much more robust effort to prepare for nuclear war was undertaken.⁹⁹

This experience came rapidly and greatly dismayed Mao, who would come to a crucial turning point in his thinking about his country's relationship with those weapons. Frustrated by the rapid reappearance of the nuclear "blackmail" he so loathed throughout the Korean War, and resolved to protect China from further coercive rhetoric (and the legitimate prospect of nuclear attack), it was at this point—January 1955—that Mao first ordered the launch of a national nuclear program. On the fifteenth, he met with China's prominent nuclear scientists and geologists in Beijing, and wrote his strategic decision:

During the past years we have been busy doing other things, and there was not enough time for us to pay attention to this issue [of nuclear weapons]. Sooner or later, we would have had to pay attention to it. Now, it is time for us to pay attention to it. We can achieve success provided we put it on the order of the day. Now, [because] the Soviet Union is giving us assistance, we must achieve success! We can also achieve success even if we do this ourselves.¹⁰⁰

Mao concluded the meeting optimistically, and made a stroke back to his core ideology: "we possess the human and natural resources, and therefore every kind of miracle can be performed."

In an April 1956 speech to the CCP politburo, he revealed his primary rationale: "We want not only to have more planes and heavy artillery, but also the atomic bomb. In today's world, if we don't want to be bullied, we cannot do without this thing."¹⁰¹

Such "bullying" at the hands of the United States would linger for some time after the end of hostilities in Korea, and by the time of the Taiwan Crisis, became a more certain aspect of the U.S.-China relationship. Eisenhower's 1957 decision to deploy tactical nuclear weapons in Taiwan, and

99 Ibid., 200-201.

100 As translated in Lewis and Xue, *China Builds the Bomb*, 38-39.

101 "Talk by Mao Zedong at an Enlarged Meeting."

the resurgence of hostility in the second Taiwan Strait Crisis in 1958 confirmed for Mao that relationship, and showed the wisdom of the January 1955 decision to undertake a nuclear program.

But owing to his long-established philosophy on nuclear weapons, Mao made clear that the Chinese program should be both limited and have its principle “use” be political—to empower China and protect it against continued threats.¹⁰² For however limited the military value Mao believed nuclear weapons held, he did find that their presence made a state’s threats and promises more compelling. He also came to believe that ownership of the bomb would elevate Beijing’s international standing, and garner both legitimacy and respect.¹⁰³ By this time, his new ambition was not to compete with the U.S. and USSR, but to blaze a new path forward, positioning the bomb more as a defensive argument than an offensive implement.

In this, Mao ended his dismissive approach to nuclear weapons in general, but maintained his core belief that they had little place in actual warfighting. The demands for a restrained program that fit this ideology would be much less than a sprawling nuclear complex as commissioned in Washington and Moscow, but would nonetheless be an extreme challenge for the developing PRC. To achieve an independent bomb, Mao needed to drive a very high level of commitment. In 1956, he gave clear charge to the CCP to make high-level strategy changes (and sacrifices) in order to take such a technological leap:

This leads to a question. Do you really want an atomic bomb, are you totally committed to wanting it, or are you only partially committed to wanting it, and not totally committed to wanting it? If you really want it... you’ll cut the proportion of military expenditures and concentrate more on economic development. If you really don’t want it... you’ll just continue along the same path, doing things as usual. This is an issue of strategic policy.¹⁰⁴

And so, beginning in 1956, the PRC sought out and recruited a group of domestic engineers and scientists to build a nuclear program. The Soviet

102 Burr and Richelson, “Whether to ‘Strangle the Baby in the Cradle,’” 57.

103 Fravel and Medeiros, “China’s Search for Assured Retaliation,” 58.

104 “Talk by Mao Zedong at an Enlarged Meeting.”

Union initially offered help through specialist training and beginning the construction of a plutonium-generating reactor within China, but soon reneged its offer of aid as overall relations between Khrushchev's government and Mao's soured. Mao was quick to move on from this spurning, and pressed for a more rapid move to independence.¹⁰⁵

In tracking Mao's statements on nuclear weapons in the decade 1946-1956, a clear trend emerges: as Washington repeatedly took steps to coerce and menace the PRC during conflicts on its periphery, Mao's original disdain for nuclear weapons and desire for disarmament was overtaken by a more sober realization that possession of the bomb may serve an important purpose in protecting his country. Though his own rhetoric was rather firmly couched in his unique worldview of proletarian struggle, his flexibility and realistic approach to nuclear weapons would prove to be a key turning point for China.

As Beijing transitioned from Mao's leadership and into the Deng Xiaoping era and ultimately operationalized its nuclear weapons program in the 1970s, many of Mao's initial hesitancy and firm beliefs would cast shadows throughout its development path, resulting in a markedly different approach to nuclear weapons as compared to China's rivals in Moscow and Washington.

105 "Mao Zedong's Talk at the Beidaihe Central Committee Work Conference (Excerpt)," July 18, 1960, History and Public Policy Program Digital Archive, *Jianguo yilai Mao Zedong junshi wengao* (Mao Zedong's Manuscripts on Military Affairs since the Founding of the PRC), vol. 3 (Beijing: Zhongyang wenxian chubanshe, 2010), 100. Translated by Neil Silver. <http://digitalarchive.wilsoncenter.org/document/114351>.



"Small Quantity but High Quality"
"Our first atom bomb:" a mock-up
of China's earliest fission weapon.

我国

China's Unique Nuclear Development

When the PRC began its program to develop a nuclear weapon in January 1955, it would face a steeper challenge than any of the other three previous nuclear powers. The United States pioneered the technology during World War II and held a dramatic industrial advantage over any other nation. The Soviet Union suffered in its infrastructure, but effective research and espionage helped keep it close to the Americans. The British benefited from its relationship with the Americans, but again would suffer from a lack of industrial capability. China, despite beginning its efforts more than a decade after its rivals, was nonetheless economically and industrially desperate, making its nuclear program a uniquely difficult task.

Table 1 illustrates the GDP per-capita of the “nuclear club” members at the time of their successful proliferation. China’s economic situation was the all-time worst among all other proliferators.

Year	Country	GDPpc (IntGK\$)
1945	United States	11,107
1949	Soviet Union	2,623
1952	United Kingdom	7,091
1960	France	7,398
1964	China	645
1970 ^A	Israel	8,101
1974	India	843 ^B
1979 ^C	South Africa	4,390
1998	Pakistan	1,840
2006	North Korea	1,133

Table 1: GDP per-capita for each nuclear state in the year it successfully developed nuclear weapons.¹⁰⁶

^{A, C} Years given represent estimated time of proliferation

^B 1974 marked India’s “peaceful explosion.” India’s first weapon-oriented nuclear test was in 1998; its GDPpc at that time was \$1,755.

¹⁰⁶ The Maddison-Project.

While per-capita GDP may be a rough measure of economic strength for a country as populous as China, its 5-year trend reveals an economy in deep turmoil: in 1958, the PRC's GDPpc was \$690, but would decline each year until 1962 as a consequence of Mao's hasty and abortive "Great Leap Forward" reforms, which began and ended in those years, respectively.¹⁰⁷ It would not surpass 1958 levels until 1963. During that time—the core years of China's nuclear program's efforts—factory workers were made to swap places with farmers, and peasants were instructed to begin smelting steel in makeshift furnaces in their backyards. Worse, a great famine would take hold, killing many tens of millions of Chinese. With an economy and industrial base broadly in chaos, the young nuclear program needed to be sheltered from what project director Nie Rongzhen understatedly identified as "several problems" embroiling China's defense sector.¹⁰⁸

In the first few years, a limited oasis of research and development was established thanks to preliminary assistance from the Soviets. In early 1958, key resources such as equipment, expert advisers, and technical data began flowing into Chinese facilities. But even before this time, relations between Moscow and Beijing were souring. A very different ideological and personal presence in Moscow than Stalin, Khrushchev was particularly suspicious of Mao's "paper tigers" outlook on nuclear war, and instead viewed the United States's brandishing of atomic weapons as a more existential and present threat.¹⁰⁹ Later, at a 1960 summit of world communist parties in Moscow, Khrushchev pointedly rebuffed Mao's famous phrase: "The paper tiger has nuclear teeth. Only a madman would speak of a new world war."¹¹⁰ The quality and type of assistance from the USSR, too, reflected Moscow's apprehension: even among the limited deliveries in 1958, Nie noted that the Soviets were sending "only outmoded equipment."¹¹¹ By the end of that year, key delivery deadlines and data-sharing milestones were being missed, and it was clear that Moscow was renegeing on its briefly kept promise of nuclear-related aid.

107 Ibid.

108 Lewis and Xue, *China Builds the Bomb*, 53.

109 Ibid., 60, 67-68.

110 As reported in "What They Are Fighting About," *TIME Magazine*, July 12, 1963, <http://content.time.com/time/magazine/article/0,9171,940292,00.html>.

111 As translated in Lewis and Xue, *China Builds the Bomb*, 70.

But Mao was resolute to his January 1955 statement that China was capable of achieving the bomb on its own. Through no small amount of high-handed rationalization and even some flexibility within what was normally a rigid and suspicious ideology, Mao's PRC authorized and built a specialist-heavy, high-tech domestic program for its own independent bomb. Intensive work continued within a reorganized, and at times ramshackle, development program. Nie was given charge to lead the self-sufficient development program, and played a major role in fostering (and later, protecting) the industrial-scientific culture necessary to complete such a project.¹¹² Almost six years later, on October 16, 1964, in the rugged hills of Xinjiang province, China exploded its first nuclear device.

Mao wasted no time in announcing his country's achievement to the world, and made clear from the beginning that the Chinese bomb would carry his ideological views and stand apart from those of his rivals. On the day of the nuclear test, a congratulatory message from the CCP central leadership—scrutinized and approved by Mao—was broadcast from Beijing:¹¹³

This is a major achievement of the Chinese people in their struggle to strengthen their national defence and oppose the US imperialist policy of nuclear blackmail and nuclear threat...China cannot remain idle in the face of the ever-increasing nuclear threats from the United States. China is conducting nuclear tests and developing nuclear weapons under compulsion.¹¹⁴

The Party's communique also attempted to address the seemingly inconsistent rationale behind China's acquisition of the bomb after so many years of decrying it as an imperialist tool:

'The atom bomb is a paper tiger.' This famous saying by Chairman Mao Tse-tung is known to all. This was our view in the past and this is still our view at present. China is developing nuclear weapons not because we believe in the omnipotence of nuclear weapons

112 Nie was a key figure at many points for the Chinese nuclear program, but had a most crucial influence at the height of the Sino-Soviet Split. See, for example, "Report by Nie Rongzhen to Mao Zedong Regarding Science and Technology (Abridged)," July 3, 1960, History and Public Policy Program Digital Archive, Dang de wenxian (Party Historical Documents), no. 1 (1996), 8-9. <http://digitalarchive.wilsoncenter.org/document/114348>.

113 Shu, "Between 'Paper' and 'Real Tigers,'" 211.

114 "Statement of the Government of the People's Republic of China," Renmin Ribao, October 16, 1964. As translated in Lewis and Xue, *China Builds the Bomb*, 241-243.

and that China plans to use nuclear weapons. The truth is exactly to the contrary. In developing nuclear weapons, China's aim is to break the nuclear monopoly of the nuclear powers and to eliminate nuclear weapons.¹¹⁵

From the very first moment, Beijing moved to communicate its reluctance in developing nuclear arms. Its ambition, according to official statements and directives, would be limited, aiming to rebuff and deter the hostile intent of its rivals and to bolster China's international standing. But in order to project a sufficient strength externally, it would nonetheless need to construct a sufficiently threatening stock of warheads and also the effective delivery vehicles for them. The risk to Mao's philosophy here would be in the temptation to follow the track of the U.S. and USSR by fielding a sprawling stockpile of nuclear weapons, committing to technical competition in the Cold War arms race, and positioning the bomb as a key element of its military policies at all levels. But thanks to Mao's lasting ideological influence in the CCP, Beijing would come to form a novel strategy based on deterrence that found value in low numbers and a passive approach to nuclear rhetoric.

“Small Quantity but High Quality”

In examining the path of the Chinese nuclear weapons complex in the years after its first nuclear test, two trends become clear: first, that Beijing was keen to achieve a technical ability that would be seen as legitimate and effective, and second, that any step beyond that goal—including stockpiling or wide deployments of delivery vehicles—was clearly blunted. These trends were not in paradox, however: Mao's strong ideological views on conflict, and of the role an advancement like nuclear weapons could play in it, would be one of the strongest components to overall Chinese strategy. Through successive years and leaderships, the PRC would thus forge a remarkably steady policy of “minimum deterrence.”

In 1964, the global stockpile of nuclear warheads numbered just under 35,000—but 99.2% of those were owned by the United States or Soviet

115 Ibid.

Union. The United Kingdom was on its way to building a modest stockpile, and France was building its first.¹¹⁶ And while the U.S. and USSR would always dominate the largest share of global stockpiles, China's entry into this field would nonetheless prove to be an interesting alternative approach on fielding what is estimated to be effective nuclear forces. Mao again would set the tone, dictating that China must keep to a principled approach of "building a few [weapons] with small quantity but high quality"¹¹⁷

Most nuclear countries have developed institutional cultures of extreme secrecy and ambiguity around their forces, and China's would prove to be no exception: almost zero public documents on the size or strength of its forces have been published or declassified over the years. Still, it is possible to estimate the scope of its program and identify trends in research and development fields: analyzing secondary and open sources of information, like mining records, facility construction images, and through data gleaned from its atmospheric tests, it is possible to make estimates of overall stockpile size. In this area, the ongoing assessments of Kristensen and Norris have proven to be the most widely accepted (and the one used in illustrating the comparative sizes of other countries' forces elsewhere in this project).

Examining that data reveals that, in its first ten years under nuclear arms, China built an early stockpile at around the same pace set by the U.K. in the previous decade (and France, which was building its own forces concurrently), but the rate of production dropped off earlier, resulting in a sharply smaller stockpile by the mid-1980s. For perspective, at the ten-year mark after its first nuclear test, trajectories varied sharply: Table 2 illustrates how the stockpiles of the nuclear states developed in the years after their first successful bomb. And while it would appear that China's stockpile fit in well with the less-intense example of the U.K. and France, it is important to remember that those countries also maintained membership in NATO, which worked to bolster nuclear deterrence in Europe and even participated in nuclear sharing among its other members.¹¹⁸

116 Kristensen and Norris, "Global nuclear weapons inventories."

117 As translated in John Wilson Lewis and Xue Litai, *China's Strategic Seapower: The Politics of Force Modernization in the Nuclear Age* (Stanford: Stanford University Press, 1994), 232-234.

118 Although concerns over NATO or the U.S. commitment to its nuclear umbrella would play a major factor in both countries' decision to proliferate in the first place. France, in particular, took a more independent path, having developed its nuclear program amid the first years of a long-lasting row with NATO.

China would have no such alliance or nuclear-related support, meaning its smaller set of nuclear forces had more theoretical vulnerabilities to cover on its own.

	5 years	10 years	15 years	20 years
United States	170	2,422	18,638	31,139
Soviet Union	200	1,627	7,091	11,736
United Kingdom	60	256	306	500
France	36	70	235	280
China	25	170	210	220

Table 2: Nuclear warhead stockpiles of the first five nuclear states as measured at milestone points after each development¹¹⁹

Despite its disadvantage, Beijing kept its nuclear stockpile low, and remarkably consistent over the following decades. The most recent estimate by Kristensen and Norris numbers China’s warhead inventory at 260, including about 80 which are most likely in longer-term storage or on track to be replaced.¹²⁰ But its slower pace of production is not for a lack of research and development—in fact China would maintain an active nuclear design and testing component for many years, and replace early designs rapidly.

In technological terms, China too played catch-up in both weapons design and in issues like warhead miniaturization, and would eventually find ways to keep pace with its larger rivals. Mao himself advocated for advancing quickly from the relatively simple fission bombs to the more advanced and powerful thermonuclear devices, which had already been developed by the other nuclear states except France. In May 1965, shortly following China’s second nuclear test (a weaponized version of the device first exploded the previous October), Zhao praised the successful fulfillment of Mao’s vision, in that China’s atom bomb had already instilled fear in the United States and earned it respect among the third world: “As Chairman Mao has said, once a price was paid, no one will dare use the bomb. Now there is the atomic bomb, and later there will be the hydrogen bomb, and there will

119 Kristensen and Norris, “Global nuclear weapons inventories.”

120 Hans M. Kristensen and Robert S. Norris, “China’s nuclear forces, 2016,” *Bulletin of the Atomic Scientists* 72, no. 4 (June 13, 2016): 205-211, <http://www.tandfonline.com/doi/abs/10.1177/0096340213501363>.

also be long-range missiles.”¹²¹ Like some in London earlier, his view in this area was focused most heavily on obtaining the prestige and respect of being a “full” nuclear power.

Still under the direction of Nie, work on China’s thermonuclear bomb began immediately following its 1964 fission bomb success, with some groundwork beginning even before the landmark October test. In contrast to the challenges of developing its first atom bomb, the transition to a fusion design was a relatively smooth one. Liu Xiyao, vice minister of the Second Ministry of Machine Building (then the key bureaucratic arm in charge of weapons design) later wrote, “the situation was entirely in our favor when we decided to start the development of the hydrogen bomb project.”¹²² As new data arrived from the fission project and technological improvements were made, progress became rapid. In May 1966, PRC scientists successfully tested a “boosted” fission device (using lithium to increase its explosive power), and in June 1967, a true thermonuclear device was developed.

Rapid success in this area would beget future developments, too—including the transition from test devices to weaponized warheads and the miniaturization of weapon design in order to fit new ballistic missiles. Still, after about 1980, Beijing’s construction of nuclear warheads plateaued. After a relatively rapid period of building up in the 1960s and early 1970s, the next decades saw a relatively stability for the overall Chinese stockpile, as early generation warheads were replaced with newer ones, and the number delivery systems remained static.

Indeed, much of the overall disposition of the PLA’s nuclear forces was dependent on its ability to field nuclear weapons in effective bomb and missile vehicles. As in other countries, the first reliable delivery system for nuclear weapons was via strategic bomber. In the 1960s, however, Beijing moved quickly to field more threatening ballistic missiles for its nuclear forces. For its strategic position, PLA planners believed that bombers

121 Zhao Enlai. “Politburo Talk by Zhou Enlai on Receiving a Group of Central Military Commission Operational Meeting Comrades,” May 21, 1965, History and Public Policy Program Digital Archive, Dang de wenxian (Party Historical Documents), no. 3 (1994): 27-28. Translated by Neil Silver. <http://digitalarchive.wilsoncenter.org/document/114363>

122 Lewis and Xue, *China Builds the Bomb*, 199.

would be too vulnerable to the superior air defenses of the USSR, and unable to reach most American targets at all.¹²³ Missiles, on the other hand, were a much more survivable option, given their ability to be hidden and moved more easily, and with near invulnerability once launched, were a stronger system around which to build a deterrent force.

In 1966, the strategic missile battalion of the PLA's broader Artillery Corps was reorganized, becoming the Second Artillery Corps and taking direct charge of China's nuclear missile forces. Reporting directly to the PRC's "supreme command," the Second Artillery became responsible for the fielding and survivability of medium and long range strategic missiles, including the developing mainstay *dongfeng* (DF) series. Based on very early Soviet designs, and improved continuously over the years, today's *dongfeng* series missiles have ranges from several hundred to over 10,000 kilometers, and carry nuclear warheads with blast strengths between 200 and 5,000 kilotons.¹²⁴ Each was developed with a certain strategic mission in mind (e.g. being able to reach Moscow, Guam, or California), and more granular decisions such as fuel type and basing mode were made with the overall objective of building a secure second-strike capability.¹²⁵ This objective, in turn, was meant to achieve the ideological position of defense and deterrence, in accordance with Mao's original dictates.

Similarly to the nuclear weapons program, China's missile program saw a period of rapid development in an effort to establish legitimacy, but slower construction and deployment. While exact numbers are scarce, most estimates show that Beijing has kept a low inventory of strategic weapons systems, with medium- and long-range missile deployments in the low-tens over the course of its nuclear history.¹²⁶ Today, only the 1970s-era DF-5A and newer DF-31A series are true intercontinental-range ballistic missiles, and those comprise only 35 of the PLA's 143 total nuclear-armed missiles.¹²⁷ This stands in sharp contrast to the American and Soviet /

123 Nonetheless, the PLA is reported to field approximately 20 H-6 strategic bombers as of 2016, and it is unclear whether or not those are assigned to the nuclear mission. See Kristensen and Norris, "Chinese nuclear forces, 2016."

124 Kristensen and Norris, "Chinese nuclear forces, 2016."

125 Lewis and Xue, *China Builds the Bomb*, 213-216.

126 Kristensen and Norris, "Chinese nuclear forces, 2016."

127 Ibid.

Russian missile fleets, which numbered well into the thousands just a decade after development, and continue to be kept at around 1,000 each.¹²⁸

This supports the original position that such weapons would not be fielded for offensive purposes, as a much larger fleet would be required to pursue the warfighting postures of the U.S. and Russia, and is in line with Mao's early statements on a deterrent posture. It should be noted that alternative assessments, such as earlier estimates from analysts at the Natural Resources Defense Council, have sometimes claimed higher numbers, but as other scholars have observed, the Chinese behavior of retiring and replacing older generations of weapons systems rapidly can lead to double-counting and other overestimations.¹²⁹ Even in a case where the high-end estimates are correct, however, China would nonetheless have a remarkably small fleet of nuclear-armed missiles among its rivals.

Since its first nuclear explosion in 1964, China has displayed a clear pattern of continuous development, but limited deployments of both nuclear weapons and their delivery systems. But according to Mao's early ideological dictates, Beijing determined that a smaller nuclear force would be sufficient: with a reliable, dangerous force built largely around medium- and long-range missiles, China was able to raise the costs of any nuclear attack above a threshold that most states would be willing to bear.

A Consistent Philosophy

Crucially, the determination to field such limited nuclear forces was a deliberate one, as evidenced not just by the rhetoric and records from the period leading up to China's nuclear program, but by the continued statements of support by senior leadership in the years after its success. While Mao's influence was heaviest over the entire Chinese nuclear complex, the philosophy of restraint was continued (and strengthened) by his protégé, Deng, and recent statements and strategies seem to support the longtime success of minimum deterrence. In this, it is clear that the hard-forged

128 Schwartz, *Atomic Audit*, 187, fig. 2-3.

129 See, for example, Jeffrey Lewis, *The Minimum Means of Reprisal: China's Search for Security in the Nuclear Age* (Cambridge, MA: American Academy of Arts and Sciences, 2007), 53-54.

outlook of Mao has occupied a central spot in China's nuclear doctrine for many decades.

Mao's overall disdainful outlook on nuclear weapons resulted in a rather heavy-handed and blunt political approach, compared to the technical needs of the systems and bureaus in charge of those weapons. One reason Mao's strong views rung so loudly through the machinations of China's nuclear complex was that the political structure of the CCP was very poorly suited to granular military-political debates—especially on a topic shrouded in extreme secrecy.¹³⁰ So when Mao would claim that “a few atomic bombs are enough [for China],”¹³¹ or “in any case, we won't build more atomic bombs and missiles than others,”¹³² those statements were sometimes the best and highest-level instructions subordinate planners would receive, and most of those policies remain in place today.¹³³

But this dynamic was only as strong as the political landscape allowed it to be—in times of crisis, military needs have often overridden a state's politics, meaning that China's promises about its nuclear weapons would need to endure real-world threats in order to prove their strength. Remarkably, China held to the principle of restraint through its brief but serious border conflict with the Soviet Union in 1969. During that crisis, the Soviet Union reportedly made preparations for a disarming first strike against China's nuclear forces, in order to head off a possible strike against Moscow.

Surprisingly, no evidence exists to show that the Second Artillery was brought to alert status, and in fact accounts illustrate a Second Artillery largely unresponsive to these new threats. Nie, in a report to the Central Committee during the clash, advocated for calm amid the Soviet preparations, claiming that preparing China's nuclear forces may indeed invite that first strike.¹³⁴ The conflict simmered, but in the following years Beijing would seek to strengthen and protect its deterrent force further in order to prevent future aggression and conflict by the Soviets.

130 Fravel and Medeiros, “China's Search for Assured Retaliation,” 51-52

131 Lewis and Xue, *China's Strategic Seapower*, 232.

132 Ibid.

133 Shu, “Between ‘Paper’ and ‘Real Tigers,’” 212; Jeffrey Lewis, *Paper Tigers*, 37.

134 Jeffrey Lewis, *The Minimum Means of Reprisal*, 79.

Such changes to the Second Artillery came slowly as China assessed and responded to the vulnerabilities exposed in the 1969 crisis, and most reforms only affirmed China's commitment to the defensive postures of no-first-use and assured retaliation. In the 1970s, the PLA made adjustments to its missile deployment strategies (namely, the basing modes for its DF-2 and DF-3 missiles) in an attempt to make a first strike against them more difficult.¹³⁵ In fact many of the posture updates to the Second Artillery were meant to enhance survivability and ensure the second-strike capability. It was also in this time that an official directive was given that the nuclear warheads be stored separately from the missile systems in peacetime, giving a tangible framework to the no-first-use doctrine.¹³⁶ It wasn't until 1984 that the nuclear forces were reformed to operate on "round the clock alerts."¹³⁷

To contrast, more affirmative reactions to those threats could have been for Beijing to increase its arsenal size, or institute more aggressive means of protecting its arsenal, such as launch-on-warning or delegating launch authority to field commanders. Instead, the PLA was continuously directed to adopt less active measures—ones that maintained the philosophical approach imparted by Mao. But by the end of the 1970s, Mao had died, and as Beijing was preparing to transition into a new era, another period of uncertainty around China's nuclear outlook was imminent.

But while Hua Guofeng served as China's Premier through the transitional period, Deng Xiaoping would prove to be the more outspoken and influential statesman on China's nuclear complex. His views were closely in step with Mao's beliefs, and he worked to continue China's deliberately small field of nuclear forces, and oversaw its continued advocacy for the elimination of nuclear weapons. Many of his statements and directives in this field were similarly couched in lofty philosophical ideas, and when he ascended to leadership in 1978, much uncertainty as to the future direction of China's bomb was already put to rest.

135 Ibid.

136 Ibid.

137 Ibid., 74.

In 1975, Deng twice publicly extolled the psychological value of nuclear weapons, while simultaneously dismissing other tangible uses for them. As he said in a meeting with the prime minister of Guyana, “our reason for building a few is that we will have them if [European countries] have them. Nuclear weapons have only this function.”¹³⁸ Later, he would reiterate that angle while meeting workers from the ballistic missile program.¹³⁹ At the Second Special Session of the UN General Assembly on Disarmament on June 21, 1982, Deng’s China took the opportunity to put forward a set of politically charged proposals at ending the arms race, including a strong endorsement and solicitation of its no-first-use policy.¹⁴⁰ As for his stewardship of the Chinese nuclear stockpile, he continued to oversee and further the “mild” reforms started in early 1970s. Near the deployment date for the first DF-5 ICBMs in the late 1970s, he wrote that “Our strategic weapons should be updated and the guideline is few but capable. Few means numbers and capability should increase with each generation.”¹⁴¹ Deng’s remarks, writings, and dictates on the subject of nuclear arms would thus closely mirror Mao’s, and guide China’s minimal deterrent force through the end of the Cold War.

But despite the stability of leadership and rhetoric, questions of China’s nuclear intentions continue to appear in the post-Cold War years. In 1996, China once again came into conflict with the United States over the issue of Taiwan—this time, with nuclear weapons on the table for both sides. In the midst of this third Taiwan Strait Crisis, a Chinese official reportedly made a coded threat to the U.S. that Americans “care more about Los Angeles than they do about Taiwan,” in an opaque reference to China’s nuclear forces.¹⁴² This candid position alarmed observers, as it potentially reflected an unprecedented change in Chinese policy, especially with regards to its no-first-use pledge. Soon after, however, the quote would be revised: the author believed his source was speaking “in a deterrent context” and the

138 As translated in Fravel and Medeiros, “China’s Search for Assured Retaliation,” 59.

139 Ibid.

140 UN General Assembly, Concluding Document of the Twelfth Special Session, A/S-12/AC.1/23, (July 9, 1982), <http://undocs.org/en/A/S-12/32>.

141 As translated in Fravel and Medeiros, “China’s Search for Assured Retaliation,” 64.

142 Patrick E. Tyler, “As China Threatens Taiwan, It Makes Sure U.S. Listens,” *New York Times*, January 24, 1996, <http://www.nytimes.com/1996/01/24/world/as-china-threatens-taiwan-it-makes-sure-us-listens.html>.

perceived threat was thus “consistent with no first use.”¹⁴³ Nine years later, a PLA general went on record to advocate for China’s consideration of a first strike in a hypothetical conflict with the U.S. over Taiwan—again worrying Washington.¹⁴⁴ But again, Beijing reacted swiftly to distance this voice from its official policy, and reaffirmed its faith in no-first-use.¹⁴⁵ Today, the PLA continues to make headlines with each new test of technology,¹⁴⁶ but despite the odd voice of dissent from within the military, little evidence yet exists to show that China is prepared to abandon or reform its overall nuclear posture.

Spanning more than five decades, China’s nuclear posture has thus been a remarkably consistent feature of its overall strategic situation. In its development of (and reliance on) a posture of minimum deterrence, it has proven a concept. Mao’s early statements and the organization of the CCP itself helped guide China into the nuclear age and provide a strong institutional culture focused most exclusively on deterrence. The Deng era saw continued modernizations, but also a steadfast insistence on low numbers and a defensive posture. Today, China continues to modernize its limited nuclear forces, but amid much Western clamor about new technologies or deployments, there is yet little evidence to support the idea that Beijing will abandon the posture it has come to see as such a success.

143 “China: Avoiding a Self-fulfilling Prophecy,” Proliferation Analysis, Nuclear Policy Program, Carnegie Endowment for International Peace, March 13, 2001, <http://carnegieendowment.org/2001/03/13/china-avoiding-self-fulfilling-prophecy-pub-9505>.

144 Joseph Kahn, “Chinese General Threatens Use of A-Bombs if U.S. Intrudes,” *New York Times*, July 15, 2005, <http://www.nytimes.com/2005/07/15/washington/world/chinese-general-threatens-use-of-abombs-if-us-intrudes.html>.

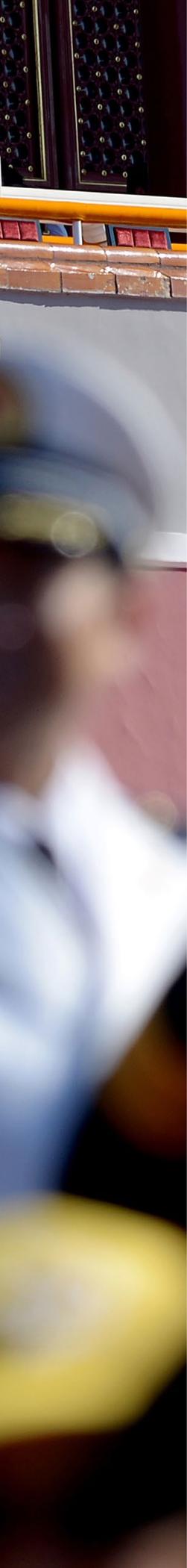
145 See Jeffrey Lewis, “China and ‘No First Use,’” Arms Control Wonk (blog), July 17, 2005, <https://www.armscontrolwonk.com/archive/200677/china-and-no-first-use/>.

146 See, for example, concerns on China’s development of hypersonic vehicle technology: Ankit Panda, “Introducing the DF-17: China’s Newly Tested Ballistic Missile Armed With a Hypersonic Glide Vehicle,” *Diplomat*, December 28, 2017, <https://thediplomat.com/2017/12/introducing-the-df-17-chinas-newly-tested-ballistic-missile-armed-with-a-hypersonic-glide-vehicle/>, and Lewis, *Paper Tigers*, 136-144.



Five Decades On

Divisions of the People's Liberation parade at Tiananmen Square in Beijing, 3 September 2015. (AP)



Conclusions and Implications for the Nuclear Weapons Field

Since their invention, nuclear weapons have been at the center of many key moments in international affairs, and China's pivotal development years were no exception. In its early days, the PRC was the recipient of repeated nuclear threats from the United States, an experience which abraded Mao's ideological beliefs to the point of adaptation. After a crucial turning point amid one such threatening crisis, China embarked on a path to join the other world powers in fielding nuclear weapons as a matter of national defense. In short order, PRC engineers and scientists successfully produced a nuclear bomb, and immediately continued to pursue advanced technologies. The years after China's entry to the nuclear club were transformative: while it yet pursued methods to maximize the deterrent value of its weapons, Beijing simultaneously positioned the bomb as a rhetorical device to shape the flow of world politics, speaking out loudly against nuclear weapons and pushing other world powers to pursue nonproliferation goals. It resisted, remarkably, temptations to put nuclear weapons in the foreground of its foreign affairs—and even held to its philosophical goals of having a small, defensive stockpile through various Cold War challenges and crises. For fifty-three years, China has been the steadiest and perhaps most calm nuclear state, and its successes should inform contemporary challenges in disarmament and nonproliferation.

And while few states could ever develop the unique circumstances that led to China's highly ideologic nuclear forces—namely, an all-powerful ideologue as founder, a strong cult of personality, a bureaucracy poorly suited to tactical decisions, and a traumatic early history of conflict—the problems addressed by Beijing's minimum deterrence approach are universal. World history is filled with examples of nations jockeying for dominance and security, and the concept of deterring an aggressor from taking violent action is as old as the writings of Sun Tzu. Today, China's nuclear program, both in conception and in practice, demonstrates perhaps the purest form of deterrence: severely attacking China will result in severe reprisal damage

to the attacking state, and not conducting such an attack will not, by decree and by more concrete structural decisions, risk any state coming under attack itself. It is a game theory concept brought to the highest level of communication that humans have developed.

In this, it is easy to see the benefits of China's approach, and how those lessons may be applied to many other states, as well. By choosing to maintain a smaller-but-threatening nuclear deterrent force, Beijing has kept far-superior forces at bay while not needing to participate in costly arms races. It has held to its own philosophical high ground and, at least in its own eyes, gained global respect. But there are few countries to which these lessons would not apply: North Korea, for example, is in the midst of its own nuclear breakout, and all evidence today indicates that its leadership is sprinting to build a guaranteed second-strike capability to deter aggression from its rivals and ensure regime security. And though the Joint Comprehensive Plan of Action has halted Iran's work towards a nuclear bomb, it is easy to see why states like these would choose this path: global pariah states are ultimately given very few avenues by which to establish themselves in the world community, and are often facing existential national security threats from hostile neighbors. The early PRC was one such state, and its successful quest for security has made the value of a nuclear deterrent clear.

Thus, for states interested in slowing the spread of nuclear weapons around the world, a paramount lesson is that menacing a less powerful state with destruction adds a great amount of incentive for that state to acquiring a counter-acting capability. In the 1950s, the United States attempted to coerce China with its nuclear weapons, but did not make many diplomatic efforts for engagement. Given Mao's original hatred for nuclear arms, it is conceivable that an alternative approach (such as negotiations focused on achieving security through domestic stabilization) would have been sufficient to forestall any nuclear ambitions, perhaps indefinitely. Falling short of fulfilling its threats of devastation on Beijing, and offering no alternative way to relieve such dire pressure, the U.S. only encouraged Chinese efforts to find a desperate (and unsavory) solution such as nuclear weapons.

Another key lesson in this area is to not underestimate the abilities of any determined proliferator. Since the 2000s, North Korea's nuclear

proliferation has often been held as an example of how even “backward” states can develop nuclear arms—but by many measures, China’s 1964 success was achieved under even worse circumstances, thanks to the ravages of the Great Leap Forward. Modern proliferators have the advantages of technology and information networks, too: it should not be forgotten that the nuclear bomb was created closer to the invention of the light bulb than to today. Thanks to this basic fact, counterproliferation efforts must be extremely vigilant, rapid, and compelling—hopefully, with the previous lesson in mind.

But perhaps the most interesting lesson from China’s nuclear experience is to be found in the power of ideology as a driving force behind a national security apparatus. Although Beijing’s strict adherence to original Maoist thought and policy was largely the result of its approach to bureaucracy and politics, the results won by the PLA’s nuclear forces have come to speak for themselves over the years. In few other countries or sectors has ideology been as strong a guiding presence—much less among core national security fields like nuclear weapons. In the post-September 11, 2001 environment, even the world’s most powerful states find themselves sprinting to adapt and adopt new security tactics, strategies, and doctrines. In many countries, and most notably the United States, key ideological beliefs have been instead burned in the name of national security, with arguably mixed results. China’s Second Artillery (now the PLA Rocket Force), meanwhile, has held fast to original dictates, adapting its technologies and abilities only in line with the 1960s concept of “small quantity but high quality.”

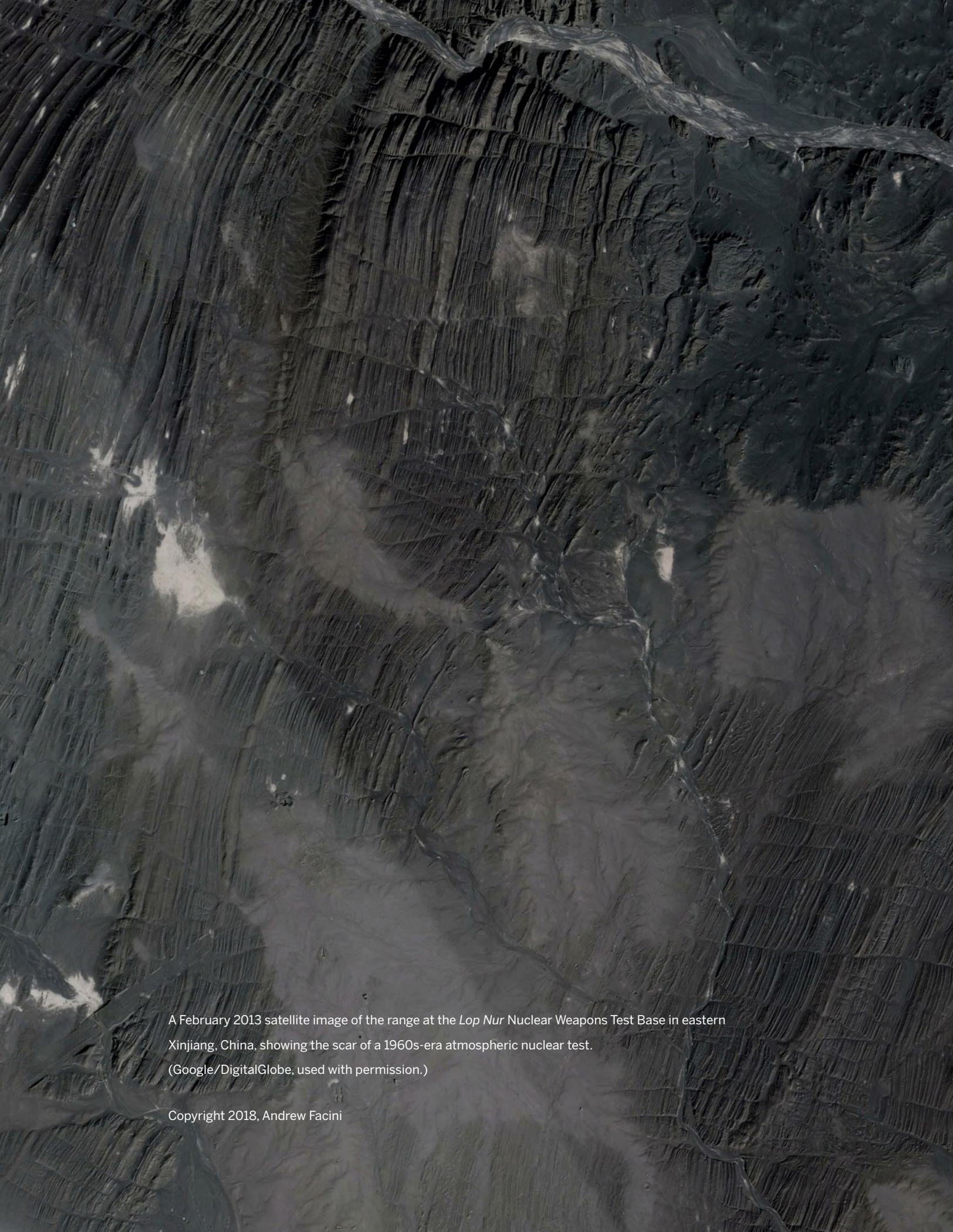
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A February 2013 satellite image of the range at the *Lop Nur* Nuclear Weapons Test Base in eastern Xinjiang, China, showing the scar of a 1960s-era atmospheric nuclear test. (Google/DigitalGlobe, used with permission.)

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