Marshall and the Atomic Bomb

By Frank Settle

*General George C. Marshall and the Atomic Bomb (Praeger, 2016)* provides the first full narrative describing General Marshall’s crucial role in the first decade of nuclear weapons that included the Manhattan Project, the use of the atomic bomb on Japan, and their management during the early years of the Cold War.

Marshall is best known today as the architect of the plan for Europe’s recovery in the aftermath of World War II—the Marshall Plan. He also earned acclaim as the master strategist of the Allied victory in World War II. Marshall mobilized and equipped the Army and Air Force under a single command, serving as the primary conduit for information between the Army and the Air Force, as well as the president and secretary of war. As Army Chief of Staff during World War II, he developed a close working relationship with Admiral Earnest King, Chief of Naval Operations; worked with Congress and leaders of industry on funding and producing resources for the war; and developed and implemented the successful strategy the Allies pursued in fighting the war. Last but not least of his responsibilities was the production of the atomic bomb.

The Beginnings

An early morning phone call to General Marshall and a letter to President Franklin Roosevelt led to Marshall’s little known, nonetheless critical, role in the development and use of the atomic bomb. The call, received at 3:00 a.m. on September 1, 1939, informed Marshall that German dive bombers had attacked Warsaw. The letter signed by noted physicist Albert Einstein and delivered a month later, informed Roosevelt of the possibility of producing an enormously powerful bomb using a nuclear chain reaction in uranium.

As Marshall hung up the phone, he told his drowsy wife, “Well, it’s come.” He dressed quickly and went to his office. Later that day he would be sworn in as Army chief of staff while German troops marched into Poland in a blitzkrieg that launched World War II.

Nearly one year before, German scientists had observed that bombarding uranium atoms with neutrons caused them to split into smaller elements, releasing a tremendous amount of energy. This fission of a uranium atom also generates additional neutrons, which can then split other uranium
atoms to produce a nuclear chain reaction. Physicists in many countries recognized this rapid chain reaction in uranium could produce a powerful atomic bomb. Among them was Hungarian physicist Leo Szilard, who realized that the Germans in particular were in an excellent position to produce an atomic bomb. Szilard, like Albert Einstein, had immigrated to the United States to escape Nazi persecution. He believed the U.S. government should be alerted to this possibility. He reasoned that Einstein, a renowned scientist, would be in a position to gain the attention of the U.S. government. So, on July 12, 1939, he visited Einstein at his home on Long Island to discuss the prospect of a U.S. atomic bomb. Szilard’s explanation of a nuclear chain reaction in uranium surprised Einstein, who had not followed recent developments in nuclear physics. Einstein pondered this new revelation and then slowly remarked, “I haven’t thought about that at all.”¹ He realized that nuclear fission was the conversion of mass to energy (a demonstration of his famous 1905 E=mc² equation).

In the letter, which was delivered October 4, 1939, Einstein warned the president that the Germans might be developing a game-changing bomb, and he raised the prospect of the United States building a weapon of its own. Roosevelt immediately approved the establishment of a committee to investigate the feasibility of the United States producing such a weapon, and Marshall’s remarkable career took a significant turn.

Marshall’s direct involvement with nuclear weapons came two years after these initial communications of 1939, when the president appointed him to the Top Policy Group, established to provide Marshall with advice on atomic energy. Little did Marshall realize that the atomic bomb would hasten the end of the war, dramatically alter the future of warfare, and profoundly influence the post-war world. As a soldier who came of age in the era that saw both trench warfare and the implementation of new technologies on the battlefield, Marshall was skeptical, but open, to the possibilities this new weapon presented. Almost a decade later, as secretary of state and secretary of defense, he confronted profound issues related to nuclear weapons.

Expanding the size of the Army, training new draftees, reorganizing the command structure, and acquiring the necessary materials and equipment had required strong leadership within both the military and Congress. In guiding these efforts, Marshall had gained the confidence of the president, advisor Harry Hopkins, Stimson, and the Army officer corps. He also acquired the respect of congressmen during his numerous committee appearances in support of the funds requested for the mobilization. Thus, despite the demands of these critical assignments, it was not surprising the president appointed Marshall to the influential policy group for atomic power.

As a member of the Top Policy Group, General Marshall was privy to the reports and plans for expanding the project. In 1943, when research indicated that the United States could produce a bomb, the Army assumed responsibility for its production. That meant Marshall, as Army chief of staff, became responsible for the massive effort known as the Manhattan Project, (that built the atomic bombs dropped on Japan). His oversight of the Army’s budget allowed him to divert funds necessary to initiate the project. Later, his reputation and influence were instrumental in securing approval for additional funding from congressmen who were told only that the project was important for winning the war. When the bomb emerged as a weapon that might end the war in the Pacific, he advised Secretary of War Henry Stimson and President Harry Truman regarding its use on Japan. This decision shortened the war and unleashed the specter of nuclear holocaust on the world.²

The Manhattan Project

Marshall and Stimson oversaw the largest scientific project in history. From 1942 to 1946, an estimated 500,000 people were involved in producing the bombs, only a few of whom knew the objective of the project. According to one estimate, the Manhattan project cost $2.2 billion (approximately $30 billion in 2014 dollars) from 1942 to 1946.³

The project encompassed a nationwide system of production plants and laboratories. The Clinton Engineering Works at Oak Ridge, Tennessee, used sequence thermal diffusion, electromagnetic separation, and gaseous diffusion methods to enrich uranium in order to produce the concentrated, fissile uranium-235 required for the bomb. (Natural uranium has less than one percent uranium-235 and more than 99 percent non-fissile uranium-238, and nuclear explosives typically require a uranium mixture with 80 percent or more concentration in uranium-235.) Nuclear reactors at Hanford, Washington, produced small amounts of plutonium-239, which were separated from spent reactor fuel by chemical means. These fissile materials were then sent to Los Alamos, New Mexico, where they were transformed into the critical components of the first atomic bombs. In addition to these major installations, many other industries and laboratories throughout the U.S. contributed to the Project.

In early June 1945, the uranium and plutonium were fashioned into components for the atomic bombs nicknamed “Little Boy” (the uranium-235 bomb) and “Fat Man” (the plutonium-239 weapon). Because there was only enough enriched uranium for one “Little Boy” and its design was simpler than that of “Fat Man,” it was not tested. The weapons designers were confident in the simple gun type

mechanism to trigger the bomb. One of the two available “Fat Man” weapons was used to test the more complicated implosion method of detonation on July 16 at Alamogordo, New Mexico.

**Leslie Groves**

In one key move, Marshall assigned Colonel Leslie Groves to manage the project and then provided him with the required resources to carry it through. The cooperation between the dynamic Groves and the reserved Marshall was critical in directing the largest scientific project in history, which produced the atomic bomb in less than two years.

Groves first met General Marshall when he reported with a group of officers for duty with the War Department General Staff in June 1939. Marshall appreciated Groves’ management skills and wanted to keep him at the War Department in Washington. Although Groves had little direct contact with Marshall, he appreciated the fact that Groves had turned down a transfer from Washington to engineering duty.

Groves was given full authority to create the organizational structure and lines of command for the project, which became an independent command, no longer held accountable to the Corps of Engineers. He reported directly to Marshall and Stimson. This structure worked well due to the relationship between Groves and his superiors during the three-year project. The relationship of mutual trust, support, and respect is reflected in a post-war interview where Groves stated:

> One reason why we were so successful was non-interference from above. General Marshall never interfered with anything that was going on. He didn’t ask for regular reports; he saw me whenever I wanted to see him and his instructions were very clear. Never once did I have to talk about the approval for money appropriations.⁴

**Marshall’s Leadership**

Marshall’s directional genius included the ability to foster collaboration among groups with disparate interests. As Army chief of staff, he worked with Allied military leaders and heads of state to implement strategies for defeating the Axis. This talent was also critical to the success of the Manhattan Project. Marshall insured cooperation between the Army and the scientists, obtained funds from Congress while keeping their intended use a secret, and supported Groves’ forceful

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⁴ Robert S. Norris, *Racing for the Bomb: General Leslie R. Groves, the Manhattan Project’s Indispensable Man.* (South Royalton, Vt.: Steerforth, 2002), p. 188.
management style. Marshall and Stimson provided continuity for the atomic program during the transition of presidential leadership from Roosevelt to Truman.

Marshall’s influence on decisions leading to the use of the atomic bomb on Japan was as important as that of President Truman’s two top advisors, Stimson and Secretary of State James Byrnes. Marshall’s wise counsel influenced the views of Truman and his advisors as they weighed options for ending the war. Marshall provided valued advice on military issues, including the impact of the Soviet Union’s entry into the Pacific war, the pros and cons of an invasion of the Japanese homeland, and the conditions for a Japanese surrender.

Uncertainty

As the war continued in the Pacific, Marshall and Stimson wrestled with the issues surrounding the use of the bomb on Japan and its implications for the post-war world. They often discussed the political and diplomatic issues associated with Japan’s surrender and Russia’s involvement in the Pacific theater. Stalin had agreed with Roosevelt and Churchill at the February 1945 Yalta Conference to enter the war against Japan within 90 days after Germany’s surrender. Marshall recognized the major role that the Soviet army could play in defeating Germany and believed it would also be valuable in the conquest of Japan. He thought Russian engagement of the Japanese on the Chinese mainland would keep Japan from moving troops to the home islands. He also noted that the Russians could invade Manchuria whenever they wished, thus allowing them to benefit from the surrender terms.

Still, Marshall kept his focus on military planning, leaving Stimson to manage the politics and diplomacy associated with the bomb. As the end of the war in the Pacific drew closer, allied military actions were dependent on Japan’s acceptance of the terms of surrender. Marshall understood that there was a choice between obtaining Japan’s unconditional surrender at a time when the nation’s morale was at a low point, and an invasion accompanied by Soviet intervention. He also considered the bomb as a possible means of “shocking the nation into surrender.”

Marshall was not certain that the strategic use of the bomb on a Japanese city would end the war and he believed an invasion was a real possibility. If necessary, he believed that additional atomic bombs could be used as tactical weapons to support the invasion. The low estimates of the explosive power of the bomb that Marshall received from Groves, as well as the wide range of estimates from the

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Project’s scientists, led him to doubt its strategic value.\(^6\) Given this uncertainty, Marshall maintained his conviction that in the absence of a diplomatic solution, allied troops would have to occupy the Japanese home islands to insure the nation’s complete capitulation. If an invasion became necessary, he believed Soviet entry into the war with Japan would be most helpful.

**Military Options**

With the future of the bomb still uncertain, Marshall, as operative head of the Joint Chiefs of Staff, heard proposals from the Army Air Forces and Navy for forcing Japan to surrender. Naval planners felt that a tight blockade would force the Japanese into capitulation, while the Air Force leaders favored bombing them into submission. Marshall maintained that invasion of the home islands would be necessary, given the resistance encountered on Saipan, Iwo Jima, and Okinawa. Moreover, the resilience of the Japanese to the intense bombing of their cities reinforced his position. He remained a conventional soldier who felt an invasion would be necessary to conquer an enemy. Nevertheless, he viewed the atomic bomb as a possible means of ending the war to avoid an invasion.

Marshall supported a strategy to apply increasing pressure on Japan. It included an immediate increase in conventional bombing and a tightened naval blockade, followed by Russian entry into the war in August and use of the atomic bomb when it became available. If these actions failed to produce surrender, Kyushu would be invaded on November 1, followed by Honshu in March 1946. Marshall left the decision to use the bomb to the president. He told Assistant Secretary of War, John McCloy “whether we should drop the bomb on Japan was a matter for the president to decide, not the chief of staff, since it was not a military question.”\(^7\) He maintained his position of civilian control of nuclear weapons after the war.

**Japan’s Surrender**

By the end of July 1945, leaders in the United States and Japan remained deadlocked on the means of ending the war. The options for the United States were either a costly invasion to force a quick surrender or the continuation of the bombing and blockade, which came with the risk of losing the American peoples’ support for the war. Japan’s choices were to seek terms of surrender that left the emperor on the throne or to offer fierce resistance, in the hopes that the American public would

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\(^7\) McCloy to Hadsel, April 8, 1985, Series 33, Folder 74, COR4, McCloy Papers, Amherst College Archives, Amherst, Massachusetts.
become weary of the war and accept surrender terms favorable to Japan. The atomic bomb changed the game for both nations.

As a result of the successful Trinity test on July 16 at Alamogordo, New Mexico, U.S. leaders activated plans for dropping the two existing atomic bombs on Japanese cities. At the Potsdam Conference, Groves informed Marshall about preparations for the bombing missions. MAGIC intercepts of Japanese diplomatic and military communications indicated to the allies that the Japanese leaders remained divided on the means of ending the war. On July 25, Marshall approved the missions for the atomic bombing of Japan.

While at dinner with his family at the Army-Navy Club on August 6, Groves received the first report that the mission to Hiroshima had left on schedule. He immediately returned to his office to await further developments. Around 11:15 pm, Colonel Frank McCarthy, Marshall’s aide, called Groves to say that the general wanted to know if there was any news on the strike. Groves responded that there was none. Shortly after McCarthy’s call, Groves received the coded strike message from General Farrell on Tinian. The mission’s crew reported:

    Results clear cut, successful in all respects. Visible effects greater than New Mexico tests. Conditions normal in airplane following the delivery.  

As soon as the message was decoded, an excited Groves phoned McCarthy, who then gave Marshall the news and received Marshall’s tempered response, “Thank you very much for calling me.”

Japan announced its surrender on August 15, 1945, six days after a second atomic bomb on Nagasaki.

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**Marshall’s Nuclear Legacy**

After the war, Truman’s selection of Marshall first as secretary of state and then as secretary of defense reflected his confidence in Marshall’s judgment and leadership. In these positions, Marshall continued to confront issues involving nuclear weapons, including the Berlin crisis, the Korean War, and the North Atlantic Treaty Organization. He believed that these weapons did not alleviate the need for a large conventional army and, while defending their use to end the war with Japan, he did not favor utilizing them in future wars. In an address to the United Nations assembly on September 17, 1948, he stated:

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For the achievement of international security, and the well-being of the peoples of the world, it is necessary that the United Nations press forward on many fronts. Among these are the control of atomic and other weapons of mass destruction and has perhaps the highest priority if we are to remove the specter of a war of annihilation.\footnote{Department of State Bulletin, September 28, 1947.}

As a conventional warrior, Marshall was skeptical of revolutionary technology in waging war. His view changed with the successful deployment of the atomic bomb on Japan. Inherently distrustful of wonder weapons, he nevertheless supported the Manhattan Project. Unsure that the atomic bomb would negate the need for invading Japan, he was surprised when it shocked the Japanese into surrendering. He believed the use of the atomic bomb ended the war, but realized that it posed a threat to the future of the world.

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