

= Leslie Groves =

Lieutenant General Leslie Richard Groves Jr. ( 17 August 1896 ? 13 July 1970 ) was a United States Army Corps of Engineers officer who oversaw the construction of the Pentagon and directed the Manhattan Project , a top secret research project that developed the atomic bomb during World War II . As the son of a United States Army chaplain , Groves lived at a number of Army posts during his childhood . He graduated fourth in his class at the United States Military Academy at West Point in 1918 and was commissioned into the US Army Corps of Engineers . In 1929 , he went to Nicaragua as part of an expedition whose purpose was to conduct a survey for the Inter @-@ Oceanic Nicaragua Canal . Following the 1931 Nicaragua earthquake , Groves took over responsibility for Managua 's water supply system , for which he was awarded the Nicaraguan Presidential Medal of Merit . He attended the Command and General Staff School at Fort Leavenworth , Kansas , in 1935 and 1936 , and the Army War College in 1938 and 1939 , after which he was posted to the War Department General Staff .

In 1940 Groves , who " had a reputation as a doer , a driver , and a stickler for duty " , became special assistant for construction to the Quartermaster General , tasked with inspecting construction sites and checking on their progress . In August 1941 , he was given responsibility for the gigantic office complex to house the War Department 's 40 @,@ 000 staff which would ultimately become the Pentagon . In September 1942 , Groves took charge of the Manhattan Project . He was involved in most aspects of the atomic bomb 's development . He participated in the selection of sites for research and production at Oak Ridge , Tennessee ; Los Alamos , New Mexico ; and Hanford , Washington . He directed the enormous construction effort , made critical decisions on the various methods of isotope separation , acquired raw materials , directed the collection of military intelligence on the German nuclear energy project and helped select the cities in Japan that were chosen as targets . Groves wrapped the Manhattan Project in security but failed to prevent the Union of Soviet Socialist Republics from conducting a successful espionage program that stole some of its most important secrets .

After the war , Groves remained in charge of the Manhattan Project until responsibility for nuclear weapons production was handed over to the United States Atomic Energy Commission in 1947 . He then headed the Armed Forces Special Weapons Project , which had been created to control the military aspects of nuclear weapons . Groves realized that in the rapidly shrinking postwar military he would not be given any assignment approaching in importance the one he had held in the Manhattan Project , and he decided to leave the Army in 1948 . He was promoted to lieutenant general just before his retirement on 29 February 1948 in recognition of his leadership of the bomb program . By a special Act of Congress , his date of rank was backdated to 16 July 1945 , the date of the Trinity nuclear test . Groves went on to become a vice @-@ president at Sperry Rand .

= = Early life = =

Leslie Richard Groves Jr. was born in Albany , New York , on 17 August 1896 , the third son of four children of a pastor , Leslie Richard Groves Sr. , and his wife Gwen née Griffith . A descendant of French Huguenots who came to America in the 17th century , Leslie Groves Sr. resigned as pastor of the Sixth Presbyterian church in Albany in December 1896 to become a United States Army chaplain . He was posted to the 14th Infantry at Vancouver Barracks in Washington in 1897 . Following the outbreak of the Spanish ? American War in 1898 , Chaplain Groves was sent to Cuba with the 8th Infantry . On returning to Vancouver Barracks , he was ordered to rejoin the 14th Infantry in the Philippines ; service in the Philippine ? American War and the Boxer Rebellion followed . The 14th Infantry returned to the United States in 1901 and moved to Fort Snelling , Minnesota . The family relocated to there from Vancouver , then moved to Fort Hancock , New Jersey , the next year , and returned to Vancouver in 1905 . Chaplain Groves was hospitalized with tuberculosis at Fort Bayard in 1905 . He decided to settle in southern California and bought a house in Altadena . His next posting was to Fort Apache , Arizona . The family spent their summers there and returned to Altadena where the children attended school .

In 1911 , Chaplain Groves was ordered to return to the 14th Infantry , which was now stationed at Fort William Henry Harrison , Montana . Here young Dick Groves met Grace ( Boo ) Wilson , the daughter of Colonel Richard Hulbert Wilson , a career Army officer who had served with Chaplain Groves with the 8th Infantry in Cuba . In 1913 , the 14th Infantry moved once more , this time to Fort Lawton , Washington . Dick Groves entered Queen Anne High School in nearby Seattle in 1913 . In September of that year , he commenced his final year of high school , and also enrolled at the University of Washington . He attempted to secure an appointment to the United States Military Academy at West Point in 1914 , earning a nomination from the president , which allowed him to compete for a vacancy , but did not score a sufficiently high enough mark on the examination . Charles W. Bell from California 's 9th congressional district accepted Groves as an alternate for one of his appointments , but the principal nominee accepted . Instead , Groves enrolled at Massachusetts Institute of Technology . In 1916 , Groves took the examinations for admission to West Point again and this time he was accepted . " Entering West Point fulfilled my greatest ambition . I had been brought up in the Army , and in the main had lived on Army posts all my life , " Groves said after the fact .

Groves ' class entered West Point on 15 June 1916 , but the United States declaration of war on Germany in April 1917 led to the course being shortened to what was known as the War Emergency Course ( WEC ) , which graduated early on 1 November 1918 . Groves came fourth in his class , and was commissioned as a second lieutenant into the United States Army Corps of Engineers . The Corps of Engineers was the usual appointment for the highest @-@ ranking cadets in a class .

= = Between the wars = =

After the traditional month 's leave following graduation from West Point , Groves reported to Camp A. A. Humphreys , Virginia , in December 1918 , where he was promoted to first lieutenant on 1 May 1919 . He was sent to France in June on an educational tour of the European battlefields of World War I. After returning from Europe , Groves became a student officer at the Engineer School at Camp Humphreys in September 1919 . On graduation he was posted to the 7th Engineers at Fort Benning , Georgia , as a company commander . He returned to Camp Humphreys in February 1921 for the Engineer Basic Officers ' Course . On graduation in August 1921 , he was posted to the 4th Engineers , stationed at Camp Lewis , Washington . He was then posted to Fort Worden in command of a survey detachment . This was close to Seattle , so he was able to pursue his courtship of Grace Wilson ( 1897 ? 1986 ) , who had become a kindergarten teacher . They were married in St. Clement 's Episcopal Church in Seattle on 10 February 1922 . Their marriage produced two children : a son , Richard Hulbert , born in 1923 , and a daughter , Gwen , born in 1928 .

In November 1922 , Groves received his first overseas posting , as a company commander with the 3rd Engineers at the Schofield Barracks in Hawaii . He earned a commendation for his work there , constructing a trail from Kahuku to Pupukea . In November 1925 he was posted to Galveston , Texas , as an assistant to the District Engineer , Major Julian Schley . Groves ' duties included opening the channel at Port Isabel and supervising dredging operations in Galveston Bay . In 1927 he became commander of Company D , 1st Engineers , at Fort DuPont , Delaware . During the New England Flood of November 1927 he was sent to Fort Ethan Allen , Vermont , to assist with a detachment of the 1st Engineers . After a pontoon bridge they constructed was swamped and swept away by the flood waters , Groves was accused of negligence . A month later Groves and several of his men were seriously injured , one fatally , when a block of TNT prematurely detonated . Groves ' superior wrote a critical report on him , but the Chief of Engineers , Major General Edgar Jadwin , interceded , attributing blame to Groves ' superiors instead . Groves was returned to Fort DuPont .

In 1929 , Groves departed for Nicaragua in charge of a company of the 1st Engineers as part of an expedition whose purpose was to conduct a survey for the Inter @-@ Oceanic Nicaragua Canal . Following the 1931 Nicaragua earthquake , Groves took over responsibility for Managua 's water supply system , for which he was awarded the Nicaraguan Presidential Medal of Merit . Groves was promoted to captain on 20 October 1934 . He attended the Command and General Staff School at

Fort Leavenworth , Kansas , in 1935 and 1936 , after which he was posted to Kansas City , Missouri , as assistant to the commander of the Missouri River Division . In 1938 and 1939 he attended the Army War College . On 1 July 1939 , he was posted to the War Department General Staff in Washington , D.C.

= = World War II = =

= = = Construction Division = = =

Groves was promoted to major on 1 July 1940 . Three weeks later , he became special assistant for construction to the Quartermaster General , Major General Edmund B. Gregory . The two men had known each other a long time , as Groves ' father was a close friend of Gregory 's . At this point , the US Army was about to embark on a national mobilization , and it was the task of the Construction Division of the Quartermaster Corps to prepare the necessary accommodations and training facilities for the vast army that would be created . The enormous construction program had been dogged by bottlenecks , shortages , delays , spiralling costs , and poor living conditions at the construction sites . Newspapers began publishing accounts charging the Construction Division with incompetence , ineptitude , and inefficiency . Groves , who " had a reputation as a doer , a driver , and a stickler for duty " , was one of a number of engineer officers brought in to turn the project around . He was tasked with inspecting construction sites and checking on their progress .

On 12 November 1940 , Gregory asked Groves to take over command of the Fixed Fee Branch of the Construction Division as soon as his promotion to colonel came through . Groves assumed his new rank and duties on 14 November 1940 . Groves later recalled :

During the first week that I was on duty there , I could not walk out of my office down the corridor to Hartman 's office without being literally assailed by the officers or civilian engineers with liaison responsibility for various camps . It is no exaggeration to state that during this period decisions involving up to \$ 5 @, @ 000 @, @ 000 [ \$ 84 @, @ 000 @, @ 000 with inflation ] were made at the rate of about one every 100 feet of corridor walked .

Groves instituted a series of reforms . He installed phone lines for the Supervising Construction Quartermasters , demanded weekly reports on progress , ordered that reimbursement vouchers be processed within a week , and sent expeditors to sites reporting shortages . He ordered his contractors to hire whatever special equipment they needed and to pay premium prices if necessary to guarantee quick delivery . Instead of allowing construction of camps to proceed in whatever order the contractors saw fit , Groves laid down priorities for completion of camp facilities , so that the troops could begin moving in even while construction was still under way . By mid @-@ December , the worst of the crisis was over . Over half a million men had been mobilized and essential accommodations and facilities for two million men were 95 per cent complete . Between 1 July 1940 and 10 December 1941 , the Construction Division let contracts worth \$ 1 @, @ 676 @, @ 293 @, @ 000 ( \$ 26 @, @ 968 @, @ 600 @, @ 000 with inflation ) , of which \$ 1 @, @ 347 @, @ 991 @, @ 000 ( \$ 21 @, @ 686 @, @ 800 @, @ 000 with inflation ) , or about 80 per cent , were fixed @-@ fee contracts .

On 19 August 1941 , Groves was summoned to a meeting with the head of the Construction Division , Brigadier General Brehon B. Somervell . In attendance were Captain Clarence Renshaw , one of Groves ' assistants ; Major Hugh J. Casey , the chief of the Construction Division 's Design and Engineering Section ; and George Bergstrom , a former president of the American Institute of Architects . Casey and Bergstrom had designed an enormous office complex to house the War Department 's 40 @, @ 000 staff together in one building , a five @-@ story , five @-@ sided structure , which would ultimately become the Pentagon . The Pentagon had a total square footage of 5 @, @ 100 @, @ 000 square feet ( 470 @, @ 000 m<sup>2</sup> ) ? twice that of the Empire State Building ? making it the largest office building in the world . The estimated cost was \$ 35 million ( \$ 563 @, @ 100 @, @ 000 with inflation ) , and Somervell wanted 500 @, @ 000 square feet ( 46 @, @ 000 m<sup>2</sup> ) of floor space available by 1 March 1942 . Bergstrom became the architect @-@ engineer with

Renshaw in charge of construction , reporting directly to Groves . At its peak the project employed 13 @, @ 000 persons . By the end of April , the first occupants were moving in and 1 @, @ 000 @, @ 000 square feet ( 93 @, @ 000 m2 ) of space was ready by the end of May . In the end , the project cost some \$ 63 million ( \$ 1 @, @ 013 @, @ 600 @, @ 000 with inflation ) .

Groves steadily overcame one crisis after another , dealing with strikes , shortages , competing priorities and engineers who were not up to their tasks . He worked six days a week in his office in Washington , D.C. During the week he would determine which project was in the greatest need of personal attention and pay it a visit on Sunday . Groves later recalled that he was " hoping to get to a war theater so I could find a little peace . "

= = = Manhattan Project = = =

The Manhattan Engineer District ( MED ) was formally established by the Chief of Engineers , Major General Eugene Reybold on 16 August 1942 . The name was chosen by Groves and MED 's district engineer , Colonel James C. Marshall . Like other engineer districts , it was named after the city where its headquarters was located , at 270 Broadway . Unlike the others , however , it had no geographic boundaries , only a mission : to develop an atomic bomb . Moreover , Marshall had the authority of a division engineer head and reported directly to Reybold . Although Reybold was satisfied with the progress being made , Dr. Vannevar Bush was less so . He felt that aggressive leadership was required , and suggested the appointment of a prestigious officer as overall project director . Somervell , now Chief of Army Service Forces , recommended Groves . Somervell met Groves outside the hearing room where Groves had been testifying before a United States Congress committee on military housing and informed him that " The Secretary of War has selected you for a very important assignment , and the President has approved the selection ... If you do the job right , it will win the war . " Groves could not hide his disappointment at not receiving a combat assignment : " Oh , that thing , " he replied .

Groves met with Major General Wilhelm D. Styer in his office at the Pentagon to discuss the details . They agreed that in order to avoid suspicion , Groves would continue to supervise the Pentagon project . He would be promoted to brigadier general , as it was felt that the title " general " would hold more sway with the academic scientists working on the Manhattan Project . Groves therefore waited until his promotion came through on 23 September 1942 before assuming his new command . His orders placed him directly under Somervell rather than Reybold , with Marshall now answerable to Groves . Groves was given authority to sign contracts for the project from September 1 , 1942 . Under Secretary of War Robert P. Patterson ( retrospectively ) delegated his authority from the President under the War Powers Act of 1941 in a memorandum to Groves dated April 17 , 1944 . Groves delegated the authority to Nichols , except that contracts of \$ 5 million or more required his authority . The written authority was only given in 1944 when Nichols was about to sign a contract with Du Pont , and it was found that Nichols original authority to sign project contracts from Colonel Marshall was based on a verbal authority from Styer , and Nichols only had the low delegated authority of a divisional engineer .

Groves soon decided to establish his project headquarters on the fifth floor of the New War Department Building ( now known as the Harry S Truman Building ) in Washington , D.C. , where Marshall had maintained a liaison office . In August 1943 , the MED headquarters ( and Nichols , who was in charge of the production facilities at Hanford and Oak Ridge ) moved to Oak Ridge , Tennessee , but the name of the district did not change .

Construction accounted for roughly 90 percent of the Manhattan Project 's total cost . The day after Groves took over , he and Marshall took a train to Tennessee to inspect the site that Marshall had chosen for the proposed production plant at Oak Ridge . Groves was suitably impressed with the site , and steps were taken to condemn the land . Protests , legal appeals , and congressional inquiries were to no avail . By mid @-@ November US Marshals were tacking notices to vacate on farmhouse doors , and construction contractors were moving in .

Meanwhile , Groves had met with J. Robert Oppenheimer , the University of California , Berkeley physicist , and discussed the creation of a laboratory where the bomb could be designed and tested

. Groves was impressed with the breadth of Oppenheimer 's knowledge . A long conversation on a train in October 1942 convinced Groves and his deputy Kenneth Nichols that Oppenheimer thoroughly understood the issues involved in setting up a laboratory in a remote area . These were features that Groves found lacking in other scientists , and he knew that broad knowledge would be vital in an interdisciplinary project that would involve not just physics , but chemistry , metallurgy , ordnance and engineering .

In October 1942 Groves and Oppenheimer inspected sites in New Mexico , where they selected a suitable location for the laboratory at Los Alamos , New Mexico . Unlike Oak Ridge , the ranch school at Los Alamos , along with 54 @, @ 000 acres ( 22 @, @ 000 ha ) of surrounding forest and grazing land , was soon acquired . Groves also detected in Oppenheimer something that many others did not , an " overweening ambition " which Groves reckoned would supply the drive necessary to push the project to a successful conclusion . Groves became convinced that Oppenheimer was the best and only man to run the laboratory .

Few agreed with him in 1942 . Oppenheimer had little administrative experience and , unlike other potential candidates , no Nobel Prize . There was also concern about whether Oppenheimer was a security risk , as many of his associates were communists , including his brother Frank Oppenheimer , his wife Kitty and his girlfriend Jean Tatlock . Oppenheimer 's Communist Party connections soon came to light , but Groves personally waived the security requirements and issued Oppenheimer a clearance on 20 July 1943 . Groves ' faith in Oppenheimer was ultimately justified . Oppenheimer 's inspirational leadership fostered practical approaches to designing and building bombs . Asked years later why Groves chose him , Oppenheimer replied that the general " had a fatal weakness for good men . " Isidor Rabi considered the appointment " a real stroke of genius on the part of General Groves , who was not generally considered to be a genius ... "

Groves made critical decisions on prioritizing the various methods of isotope separation and acquiring raw materials needed by the scientists and engineers . By the time he assumed command of the project , it was evident that the AA @-@ 3 priority rating that Marshall had obtained was insufficient . The top ratings were AA @-@ 1 through AA @-@ 4 in descending order , although there was also a special AAA rating reserved for emergencies . Ratings AA @-@ 1 and AA @-@ 2 were for essential weapons and equipment , so Colonel Lucius D. Clay , the deputy chief of staff at Services and Supply for requirements and resources , felt that the highest rating he could assign was AA @-@ 3 , although he was willing to provide an AAA rating on request for critical materials to remove bottlenecks . Groves went to Donald M. Nelson , the chairman of the War Production Board and , after threatening to take the matter to the President , obtained a AAA priority for the Manhattan project . It was agreed that the AA @-@ 3 priority would still be used where possible .

The Combined Development Trust was established by the governments of the United Kingdom , United States and Canada in June 1944 , with Groves as its chairman , to procure uranium and thorium ores on international markets . In 1944 , the trust purchased 3 @, @ 440 @, @ 000 pounds ( 1 @, @ 560 @, @ 000 kg ) of uranium oxide ore from companies operating mines in the Belgian Congo . In order to avoid briefing US Secretary of the Treasury Henry Morgenthau Jr. on the project , a special account not subject to the usual auditing and controls was used to hold Trust monies . Between 1944 and the time he resigned from the Trust in 1947 , Groves deposited a total of \$ 37 @. @ 5 million into the Trust 's account .

In 1943 , the Manhattan District became responsible for collecting military intelligence on Axis atomic research . Groves created Operation Alsos , special intelligence teams that would follow in the wake of the advancing armies , rounding up enemy scientists and collecting what technical information and technology they could . Alsos teams ultimately operated in Italy , France and Germany . The security system resembled that of other engineer districts . The Manhattan District organized its own counterintelligence which gradually grew in size and scope , but strict security measures failed to prevent the Soviets from conducting a successful espionage program that stole some of its most important secrets .

Groves met with the Chief of United States Army Air Forces , General Henry H. Arnold , in March 1944 to discuss the delivery of the finished bombs to their targets . Groves was hoping that the Boeing B @-@ 29 Superfortress would be able to carry the finished bombs . The 509th Composite

Group was duly activated on 17 December 1944 at Wendover Army Air Field , Utah , under the command of Colonel Paul W. Tibbets . A joint Manhattan District ? USAAF targeting committee was established to determine which cities in Japan should be targets ; it recommended Kokura , Hiroshima , Niigata and Kyoto . At this point , Secretary of War Henry L. Stimson intervened , announcing that he would be making the targeting decision , and that he would not authorize the bombing of Kyoto . Groves attempted to get him to change his mind several times and Stimson refused every time . Kyoto had been the capital of Japan for centuries , and was of great cultural and religious significance . In the end , Groves asked Arnold to remove Kyoto not just from the list of nuclear targets , but from targets for conventional bombing as well . Nagasaki was substituted for Kyoto as a target .

Groves was promoted to temporary major general on 9 March 1944 . After the atomic bombing of Hiroshima and Nagasaki became public knowledge , he was awarded the Distinguished Service Medal . His citation read :

Major General Leslie Richard Groves , as Commanding General , Manhattan Engineer District , Army Service Forces , from June 1942 to August 1945 coordinated , administered and controlled a project of unprecedented , world @-@ wide significance ? the development of the Atomic Bomb . His was the responsibility for procuring materiel and personnel , marshalling the forces of government and industry , erecting huge plants , blending the scientific efforts of the United States and foreign countries , and maintaining completely secret the search for a key to release atomic energy . He accomplished his task with such outstanding success that in an amazingly short time the Manhattan Engineer District solved this problem of staggering complexity , defeating the Axis powers in the race to produce an instrument whose peacetime potentialities are no less marvellous than its wartime application is awesome . The achievement of General Groves is of unfathomable importance to the future of the nation and the world .

Groves had previously been nominated for the Distinguished Service Medal for his work on the Pentagon , but to avoid drawing attention to the Manhattan Project , it had not been awarded at the time . After the war , the Decorations Board decided to change it to a Legion of Merit . In recognition of his work on the project , the Belgian government made him a Commander of the Order of the Crown and the British government made him an honorary Companion of the Order of the Bath .

= = After the war = =

Responsibility for nuclear power and nuclear weapons was transferred from the Manhattan District to the United States Atomic Energy Commission on 1 January 1947 . On 29 January 1947 , Secretary of War Robert P. Patterson and Secretary of the Navy James V. Forrestal issued a joint directive creating the Armed Forces Special Weapons Project ( AFSWP ) to control the military aspects of nuclear weapons . Groves was appointed its chief on 28 February 1947 . In April , AFSWP moved from the New War Department Building to the fifth floor of the Pentagon . Groves had already made a start on the new mission by creating Sandia Base in 1946 .

The Chief of Staff of the United States Army , General of the Army Dwight D. Eisenhower , met with Groves on 30 January 1948 to evaluate his performance . Eisenhower recounted a long list of complaints about Groves pertaining to his rudeness , arrogance , insensitivity , contempt for the rules and maneuvering for promotion out of turn . Eisenhower made it clear that Groves would never become Chief of Engineers . Groves realized that in the rapidly shrinking postwar military he would not be given any assignment approaching in importance the one he had held in the Manhattan Project , as such posts would go to combat commanders returning from overseas , and he decided to leave the Army . He was promoted to lieutenant general on 24 January 1948 , just before his retirement on 29 February 1948 in recognition of his leadership of the Manhattan Project . By special Act of Congress his date of rank was backdated to 16 July 1945 , the date of the Trinity nuclear test .

= = Later life = =

Groves went on to become a vice president at Sperry Rand , an equipment and electronics firm , and moved to Darien , Connecticut , in 1948 . He retired from Sperry Rand in 1961 . He also served as president of the West Point alumni organization , the Association of Graduates . He presented General of the Army Douglas MacArthur the Sylvanus Thayer Award in 1962 , which was the occasion of MacArthur 's famous Duty , Honor , Country speech to the United States Military Academy Corps of Cadets . In retirement , Groves wrote an account of the Manhattan Project entitled Now It Can Be Told , originally published in 1962 . In 1964 , he moved back to Washington , D.C.

Groves suffered a heart attack caused by chronic calcification of the aortic valve on 13 July 1970 . He was rushed to Walter Reed Army Medical Center , where he died that night . A funeral service was held in the chapel at Fort Myer , Virginia , after which Groves was interred in Arlington National Cemetery next to his brother Allen , who had died of pneumonia in 1916 . Groves is memorialized as the namesake of Leslie Groves Park along the Columbia River , near the Hanford Site in Richland .