

**Colonel Clarence L. "Lee" Battle
Inducted 2001**



Colonel Clarence L. "Lee" Battle completed his undergraduate education in chemical engineering at the University of Oklahoma in 1941 and worked briefly as a petroleum engineer. During World War II, he served as a maintenance officer in the Pacific Theater. Following receipt of a Master of Science degree from MIT in 1946, Colonel Battle was assigned as an engineer on propulsion projects at Air Materiel Command headquarters, Wright-Patterson AFB, Ohio. Among the many research and development specialty fields for which he soon qualified were guided missiles, rocket engines, ramjet engines, fuels and propellants, fluid mechanics, aerodynamics, industrial processes, metallurgy, ground photographic devices, aerial photographic equipment, bombardment and navigation, and auxiliary power plants. In 1950, Colonel Battle accepted an assignment at USAF headquarters as chief of the engineering section of the propulsion branch and, later, chief of the power plant branch under the Deputy Chief of Staff for Research and Development. He became chief of technical services at the Air Force Flight Test Center, Edwards AFB, California, in 1953.

Colonel Battle joined Western Development Division in 1954 and, sometime later, became chief of the systems engineering division under the director of Program WS-117L, the Air Force's first satellite program. He continued in the capacity until his appointment in 1958 as director of the Discoverer/Corona Program. In the latter role, he set the pattern for conduct of the program that led to the world's first photographic reconnaissance satellite system. Colonel Battle emphasized a streamlined approach with simple clarity: select a small group of good people; develop a close working relationship among Air Force program officers and key contractors; demand high-quality performance, with rigorous analysis and correction of all failures; focus on accomplishment of the mission; avoid wasting time on busy work; and remember that the payoff

is in the results. These and other management principles that he espoused over time became known to those associated with Discoverer/Corona as “Battle’s Laws.”

Before the launch of Discoverer I on 28 February 1959, only ten satellites had been successfully launched into Earth orbit. Unlike any of those, the Discoverer series was designed specifically to perform a useful task. It was stabilized to keep the camera always pointed toward Earth, thereby allowing it to take photographs on command and, later, eject back to Earth the capsule containing the exposed film. Colonel Battle’s insistence on testing and rigorous failure analysis went far toward ensuring that the space booster, the spacecraft, the camera, photographic film, the reentry vehicle, and the control network performed as flawlessly as possible. Due in large measure to his remarkable leadership skills, all these relatively unproven elements worked harmoniously with the launch of Discoverer XIV and midair recovery of its film capsule on 19 August 1960. The Discoverer/Corona system allowed the United States to collect the first comprehensive, repetitive overhead imagery of the entire Soviet Union. By the time Colonel Battle left the program in 1963, system capabilities had evolved from one-day missions carrying 3,000 feet of film and a ground resolution of 30-40 feet to week-long, stereoscopic missions with two reentry vehicles, 16,000 feet of film per camera, and a ground resolution of 6-10 feet. The Discoverer/Corona system enhanced American security immeasurably by supplying important details about Soviet capabilities during an especially critical portion of the cold war.

Colonel Battle went on to work for the Director of Defense Research and Engineering during the mid-1960s. After retiring from active duty in 1968, he joined COMSAT Corporation and, later, Lockheed Missiles and Space Company to continue working on military satellite projects. Colonel Battle died in August 2002.