IN MEMORIAM

General Bernard A. Schriever

Contributor to National Reconnaissance

USAF General (ret.) Bernard A. Schriever, considered the father of US military space and missile development, died 20 June 2005 at his Washington home. He was 94 (Aviation Week, 2005, p. 20). Through his stewardship of Intercontinental Ballistic Missile (ICBM) development in the 1950s and 1960s, Schriever furnished the national reconnaissance community with the space launch vehicles used for boosting the world's first reconnaissance and communication satellites into orbit (Space News, 2005). At a time when US intelligence indicated a growing Soviet missile threat, Schriever reinvigorated the Air Force's ballistic missile development effort that had been slowed by excessive regulation and budgetary cuts, to produce four major missile systems—the Thor intermediate range ballistic missile (IRBM), and the Atlas, Titan, and Minuteman ICBMs—years ahead of schedule (Estrada, 2005). Schriever provided the management and technical infrastructure for the Air Force's Weapons Systems (WS) 117L program; one project under WS-117L for a film return satellite later provided the framework for the covert activity that resulted in the development of Corona, the world's first photoreconnaissance satellite (Hall, 1998). Schriever's imposition of a technique termed "concurrency"—the simultaneous undertaking of development tasks that would ordinarily be conducted sequentially—changed the way military programs were administered (Boyne, 2000; Estrada, 2005), and, with his other managerial innovations, contributed to a legacy of technological and programmatic advances throughout the Air Force and the national reconnaissance community (Neufeld, 2005).

Even before the Soviet missile threat materialized, Schriever advocated for the development and deployment of missiles for US security. In August 1954, he assumed command of a new agency under the Air Force Air Research and Development Command, the Western Development Division (WDD), to manage the creation of an ICBM force outside of the traditional Air Force bureaucracy (Neufeld, 2005). The initially separate efforts to field missiles capable of delivering nuclear warheads and to produce reconnaissance satellites converged under Schriever's leadership (Hall, 1998). The production and testing facilities and the launch sites constructed for ICBM development, served as the infrastructure for WS-117L activities, even as WS-117L activities established the programmatic framework and provided a basis for cover for the future covert development of Corona (Oder, Fitzpatrick, & Worthman, 1988). The research and development on propulsion, guidance, and structural techniques that fostered ICBM development

led to research into orbital mechanics and attitude control that enabled space-based reconnaissance (Hall, 1998).

Beginning with his management of WDD, Schriever instituted processes for developing complex technologies that were widely adopted within the Department of Defense. Through frequent Capitol Hill visits to brief Congress on space and missile programs, Schriever secured funding at levels that sometimes exceeded what the president had appropriated in his defense budgets (Space News, 2005). Aviation Week noted that "Schriever was a master at managing large, complex development programs, and renowned for cutting through red tape" (2005, p. 20).

Born in Bremen, Germany, where his father served in the merchant marine, Schriever arrived in the United States when his family emigrated in 1917, settling in a German-American community 30 miles north of San Antonio, Texas. Schriever became a naturalized US citizen in 1923. After graduating from Texas A&M University with an architectural engineering degree, he joined the Army, receiving a commission in the field artillery. He enrolled in the Army Air Corps Flying School at Kelly Field, Texas, and flew airmail missions. In 1941, The Army Air Forces sent him to Stanford University to study for a master's degree in aeronautical engineering, which he earned in June 1942. After his promotion to major, Schriever joined the 19th Bombardment Group as a B-17 pilot, operating in the Southwest Pacific theatre. Before the war's end, Schriever flew 33 combat missions (Neufeld, 2005).

After retirement from the Air Force, Schriever consulted for several presidential administrations, serving on the President's Foreign Advisory Board under Presidents Reagan and George H.W. Bush. He also advised the Air Force and the Department of Defense, frequently without fee. On June 5, 1998, the Air Force honored Schriever's lifetime of achievements by renaming its base ten miles east of Colorado Springs, Colorado, Schriever Air Force Base, an unprecedented honor for a still living individual (Neufeld, 2005). Commander of Air Force Space Command, Gen. Lance Lord acknowledged the country's debt to Gen. Schriever when he wrote,

> Future historians will look back upon the Cold War and point to Gen. Schriever as a decisive factor in our victory...Where would we be without General Schriever? Technologically, it's accurate to say we would be decades behind where we are now (Lord, 2005, p. 19).

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