

Chapter 2 The Cold War and Air Defense

The Cold War, 1948 to 1991, was largely an international political conflict characterized by the absence of direct confrontation between the superpowers. The threat of war, however, contributed to a general sense of anxiety and at times the possibility of open conflict appeared imminent. In response to the apparent danger, the United States adopted a national military strategy of defense and deterrence. To prevent war, the country would acquire overwhelming weapons superiority to deter attackers. In the event that deterrence failed, continental defense measures would be in place to intercept an attack on the United States, thereby vastly limiting or eliminating the effectiveness of an offensive strike.

The stakes of a nascent Cold War were raised dramatically in 1949 when the Soviet Union detonated a nuclear device. A cornerstone of U.S. military strategy, that of a monopoly on nuclear weapons, came to an abrupt and startling end. This event, coupled with the start of the Korean War in 1950, accelerated development of the military's national defense program. It was during these early years of the Cold War that the strategic value of Alaska once again became obvious. The United States recognized a growing vulnerability on the polar air route, the shortest and most likely avenue of attack from Russia. With their fleet of intercontinental bombers the Soviets were capable of flying into the United States to release nuclear weapons. The U.S. military embarked on an ambitious and costly program devoted solely to protecting the country against an aerial attack. Due to its proximity to the Soviet Union, Alaska would play a key role in the nation's defense strategy by serving as an early warning sentinel and the first line of defense.

The need to protect an area against aerial attack was certainly nothing new; since the use of airplanes in combat, strategists have grappled with defending against the damage aircraft can inflict from the relative safety of the skies. The threat was originally countered with anti-aircraft artillery (AAA) batteries, where soldiers attempted to shoot down highflying planes with long-range guns. The importance of anti-aircraft artillery was highlighted after the Japanese attack on Pearl Harbor, and thereafter became a defensive focus for the United States. For the duration of WWII, batteries were assembled and manned across the country to protect cities, military bases and potential industrial targets from aerial attacks.

After World War II ended, use of anti-aircraft artillery temporarily waned until the Korean War started and the threat of aerial attack emerged once again. Lessons gleaned from World War II had prompted creation of the Air Force as a separate branch within the newly formed Department of Defense in 1947. Control of ground-based air defenses was a point of contention between the Army and Air Force from the start. The Army won command of point defense AAA, while ultimate control over target engagement was given to the Air Force. A new Army command, the Army Anti-aircraft Command (ARAACOM), was formed in July of 1950 to manage the defense. ARAACOM was renamed the U.S. Army Air Defense Command (USARADCOM) in 1957 and the Army Air Defense Command (ARADCOM) in 1961. Throughout organizational changes and technological advancements, the agency maintained control over the country's ground-based air defense weapons.



Figure 2: U.S. Army Air Defense Command insignia.

In Alaska twenty AAA batteries protected the military complexes in Fairbanks and Anchorage from 1950 to 1958. Generally the AAA



batteries consisted of 12 Quonset huts, radars, an ordnance shop, ammunition magazines, a fuse storage shelter, and the 90mm or 120mm guns. Quonset huts were used for administration and soldier housing.² Batteries were manned around the clock, much as Nike missile sites would operate in the future. The conditions facing AAA soldiers, however, were harsher than those encountered at the Nike batteries; life in a Quonset hut can be uncomfortable. When the Anchorage AAA batteries were initially activated in 1950, the 96th Gun Battalion arrived to find their quarters were old, drafty Jamesway huts. The men lived in these for several months until unassembled Quonset huts were delivered for the battalion to construct. The soldiers built their own barracks through the middle of a cold winter, finishing the job in February of 1951. Meanwhile contractors installed latrines, maintenance shops, and mess halls.³

The poor living conditions air defense soldiers faced were not exclusive to Alaska; AAA units across the country were largely deployed with few amenities and little preplanning, for the Korean War had contributed to a grave sense of urgency.⁴ The meagerness of AAA facilities resulted in morale and personnel retention issues that likely contributed to the construction of more comfortable Nike sites, with permanent barracks, mess halls and recreational amenities.

Even as AAA batteries were being widely deployed in the early 1950's their effectiveness was being questioned in the face of advancing aircraft technology. As described by one soldier, "nobody had much fear of a 75 millimeter gun...when they're in an airplane they fly one and a half mach, we finally figured out we could only get about three [rounds] off at it as it passed over. The gun was fast but it didn't have the range, so it had limited capabilities."⁵ The defense technology had to keep pace with progressing aircraft capabilities.

The military realized as early as 1945 that superior air defense weapons were needed: research and development for the Army's first guided missile system began that year. Known as Nike I, or Nike Ajax, the program was accelerated when the Soviets detonated a nuclear device and when the Korean War started. The system was ready for deployment in 1954 and at peak operations there were 200 Nike Ajax sites in the United States.⁶ Concurrent with the deployment of Nike Ajax, limitations in the system's range and kill capabilities were identified. This led to creation of Nike Hercules, the second generation Nike weapon. Unlike its predecessor, Nike Hercules could be armed with nuclear weapons *or* high yield explosives, and its firing range was increased from twenty-five miles to over seventy-five miles. Nike Hercules began replacing Ajax sites across the country in 1958. Fewer Hercules sites were needed since the missile range was significantly increased.

Nike Hercules MISSILE	
Range	Over 75 miles
Speed	2,700 mph / 3.5 mach
Weight	5,250 lbs
Length	27 feet
Nike Hercules BOOSTER	
Length	14 feet
Weight	5,300 lbs
Body Diameter	34 inches
Burn Time	3.4 seconds

² Colt Denfeld, *The Cold War in Alaska: A Management Plan for Cultural Resources*, U.S. Army Corps of Engineers, Alaska District, 1994. 66,67.

³ 'A History of the 4th Missile Battalion (Herc) 43D Artillery' Obtained from Norman Schlittler.

⁴ Colonel Moeller, Stephen P. 'Vigilant and Invincible'. p. 5, 6. Available online at, www.redstone.army.mil/history/vigilant/sus_intro.html.

⁵ Interview, Billy Badger, Anchorage, AK, 4 March 2003.

⁶ Colt Denfeld, *Nike Hercules in Alaska*. Historic American Engineering Record: The Nike System in Alaska. US Army Corps of Engineers, Alaska District, 1988. 2.



As the Army was developing Nike, the Air Force was working on its own surface-to-air missile program, known as BOMARC. The two departments engaged in a fierce competition for funding priority, and at times both programs were threatened with cancellation. In the end, the Army Nike program was developed and deployed first and therefore received priority over the Air Force system. BOMARC was deployed at only eight sites in the United States, all of which were deactivated by 1972.⁷

Though the Nike system was an extremely important element of national security, it was but a single component within an integrated aerial defense program protecting the country during the Cold War. U.S. air defense strategy depended first and foremost on early warning of an attack. This tactic permitted the military to deploy intercepting aircraft to foil aggressors far in advance of their reaching intended U.S. targets. An unparalleled series of radars was built across Canada, Greenland, and Alaska to provide advance warning of territorial breaches. The first Cold War radar system built was the Aircraft Control and Warning (AC&W) system. AC&W was funded in 1949, and by 1954 ten radar sites and two ground controlled interception bases were completed. AC&W was expanded with an additional six radar sites in 1958. The second Alaskan radar network built was the Distant Early Warning (DEW) Line, which extended across the northern border of Alaska and Canada. The DEW Line was completed in 1957, and additional radar sites were added along the Aleutians in 1959.



Figure 3: Nike Hercules Rollout to Firing, February 1968, Site Summit, Anchorage. U.S. Army Photo.

The DEW Line and AC&W would have been useless without communications capabilities for relaying information to military control centers around the state and to the North American Regional Air Defense (NORAD) headquarters. Communication in the north was complicated by severe weather and auroral disturbances, so a reliable system that could overcome these adverse conditions was essential. The military's solution, dubbed the White Alice Communications System, used tropospheric scatter technology to bounce radio signals off the lower atmosphere. The system became operational in 1956, and was later expanded as radar sites were added to the DEW Line, and again with construction of the Ballistic Missile Early Warning System.⁸

⁷ John Lonquest and David Winkler. *To Defend and Deter: The Legacy of the United States Cold War Missile Program*, USACERL Special Report 97/01, November 1996.

⁸ Georgeanne L. Reynolds, *Historical Overview and Inventory: White Alice Communications System*, Anchorage, U.S. Army Corps of Engineers, 1988.



With reliable aircraft location and directional information, planes could be deployed from forward operating bases at King Salmon and Galena within a moment's notice. Airmen and planes were standing by around the clock for possible interception and/or counterattack missions. If Soviet aircraft made it through this extensive initial network of warning and interception, the Nike Hercules missile system was in place as a last line of defense to protect areas against attacking aircraft formations. Orders and instructions would be disseminated through the North American Air Defense command center (NORAD), which would notify the appropriate Army Air Defense Command Post (AADCP). The AADCPs acted as a communication link between the Air Force, NORAD, and the Nike sites, and controlled the individual firing batteries during an engagement. There were two AADCPs in Alaska, one for the Fairbanks battalion, located at Murphy Dome, and one for the Anchorage battalion, originally located at Fire Island and later transferred to A Battery, Site Point. The Nike sites then would have acquired and tracked targets with their on-site radars, and launched missiles to destroy aircraft, even those taking evasive maneuvers.



Figure 4: Air Force Jet flying over Site Summit. Courtesy Billy Sparks.

