

ARMY AIR ARTILLERY DEFENSE SCHOOL

HINMAN HALL



✱ FIRST TO FIRE ✱

U.S. ARMY
FORT BLISS, TEXAS



ACKNOWLEDGEMENTS

After World War II, Fort Bliss became the United States (US) Army's premier center of expertise in the guided missile field. Hinman Hall (Building 2), built in 1954, served as the headquarters for the U.S. Army Antiaircraft Artillery Defense School (USAAADS) and Guided Missile Center.

In the opening day speech for Hinman Hall on November 23, 1954, General John E. Dahlquist, Commanding General, Continental Army Command described the building as "modern, streamlined, solid, strong, [exemplifying] the strength and growth of the anti-aircraft artillery and the importance of the activities now being conducted within its walls"—in contrast to the Queen Anne style brick structures that lined the Fort Bliss parade ground and heralded the days of Pancho Villa and the Punitive Expedition.

In its existence thousands upon thousands of both national and international origin trained at this top-notch facility. Indeed, the training that took place within its walls not only changed the face of the Air Defense School and the face of Fort Bliss, but the arms race and the Cold War.

Completion of this publication would not have been possible without the generous assistance and encouragement of many individuals. Fort Bliss civilian staff included the MIRATEK point of contact, Russell Sackett. Mr. Sackett is a Historical Architect of the Fort Bliss Environmental Division, Conservation Branch, who provided many of the materials required to complete this project. John Hamilton, Historian, Army Air Artillery Defense School was also very helpful with materials, photographs and input.

HNTB historian Cheryl Widel was able to utilize valuable information from oral interviews associated with the Safeguard Missile Report, also completed by MIRATEK. The three interviewees included Chuck Angelo, Donsel Champ and Davis Ellis. Their experiences associated with Safeguard and AADS helped bring personal knowledge to the report.

Jessica Gressett edited, formatted and fact-checked the information to make this project a success. Jennifer Halstead, acting as HNTB Project Manager, kept the project up-to-date and on track. The innovative copywriting, layout and design of this publication was created by Jamie Pritchett, Malizy "Liz" Scruggs, Guy Garrett and Shannon McCord. Pete Muela, acting as MIRATEK Project Manager, provided important liaison work with the Fort Bliss, Environmental Division, Conservation Branch.



INTRODUCTION

Immediately following World War II, Fort Bliss became the US Army's premier training center in the guided missile field. Known as the "Air Defense School", the facility became the nucleus for the Army's ground to air defense missile systems, including the infamous Hawk, Nike Ajax and Nike Hercules among others.

One of the cornerstones of Fort Bliss was Hinman Hall. The training that took place within its walls not only changed the face of the Air Defense School and the face of Fort Bliss, but the arms race that defined the Cold War. Built in 1954, the building served as the headquarters for the US Army Antiaircraft Artillery Defense School (USAAADS) and Guided Missile Center. Soon after its construction, the Air Defense School was graduating more than 5,000 students a year from nearly 60 allied nations.



Hinman Hall, Fort Bliss, Texas



"Guided missiles are on the way. The guided missile is a weapon that will be adaptable to the needs of the Army, Navy and Air Force. No one agency will have sole use. Just as an airplane, a truck, or a gun finds its appropriate use in the three services, so will the guided missile."

Waigte M. Taylor, US Army Air Defense School

1824

The first US defense school, the Artillery Corps for Instruction, was created off the Chesapeake Bay in Virginia.

THE EARLY YEARS

USAAADS began far from the desert ranges of Fort Bliss, Texas. The first US defense school, the Artillery Corps for Instruction, was created in 1824 off the Chesapeake Bay in Virginia. This instructional compound found its home at "Fortress Monroe," one of the largest stone forts ever created. With large pockets of unpopulated areas along the Atlantic seaboard from the early to mid-nineteenth century, the military focused on protecting these areas from naval attacks on the US.

Artillery Corps for Instruction school stayed in operation until 1834 when it was reestablished as the Artillery School of Practice specializing in heavy guns. The outbreak of the Civil War caused the school to close in 1860.

The school reopened again in 1868 and expanded its curriculum to include courses in mathematics, artillery tactics, engineering, astronomy, international law, mechanics, military history, survey gunnery and ordinance. Prior to the

In 1907, before the onset of World War I (WWI) the school was divided into two branches: the Coast Artillery School and the School of Fire (renamed the Field Artillery School in 1919). The Coast Artillery School remained at Fort Monroe and was primarily responsible for seacoast



Civil War cannon

invention of the airplane, courses at the school focused on heavy guns used for coastal defense. Courses in antiaircraft artillery, such as data transmissions and position - finding equipment were added yearly with each technological breakthrough. The early training in antiaircraft artillery allowed the school to develop a "nucleus of officers in engineering for the development of antiaircraft material." Courses in antiaircraft artillery training were added with each successive year.

protection and antiaircraft defense. The curriculum at the School of Fire centered on field artillery and was located in Fort Sill, Oklahoma.



1860

The Artillery School closed due to the outbreak of the Civil War.

A NEW SCHOOL

The US officially entered WWI on April 17, 1917, when the US aligned itself with the "Triple Entente", later known as the Allied Forces, to take on the German initiative. Six



120 mm gun emplacement at Ft. Bliss, Texas

In February 1942, the need for more classrooms caused the Army to relocate both the Coast Artillery School and the Field Artillery School to a larger compound located at Camp Davis in North Carolina. Only one short month later, the US War Department recognized the need for even more targeted training and separated the two artillery schools to create the Army Antiaircraft Artillery (AAA) School. The purpose of this division was to train the thousands of anti-aircraft artillery men necessary to successfully participate in WWII.

The AAA School contained six specialty schools with campuses at: Camp Davis, North Carolina; Fort Sheridan, Illinois; Camp Edwards, Massachusetts; Camp Hulen, Texas; Camp Haan, California and Fort Bliss, Texas.

"During the first two years of WWII, the AAA School trained 20,000 officers and 45,000 enlisted specialists in antiaircraft artillery while seven antiaircraft training centers trained

months later on October 10, 1917, a national school was established as the Air Defense Artillery Arm of the US Army. The school's mission was denial of penetration or to prevent enemy fire from reaching the US borders. The US Army carried out this mission by strategically placing military units around the country to detect, attack and destroy enemy threats. In addition, the new school defended elements of the field army on the battlefield and protected cities as a part of its mission.

In preparation for World War II (WWII), the Coast Artillery School began admitting 200 officer candidates monthly. The increase in enrollment led the school to quickly outgrow its space at Fort Monroe.

more than 1,000,000 artillerymen." These numbers vastly exceeded the numbers of graduates in previous years as only 3,200 enlisted men and officers graduated from the Coast Artillery School from 1824 - 1920.

Although anti-aircraft training was in full-throttle, the Army was still using WWI combat technology, including three-inch antiaircraft guns, like the M1918 coastal gun. This weapon was smaller than its predecessor, the M1917, and was capable of firing smaller and quicker rounds of ammunition. As one of the earliest antiaircraft weapons crafted by



1907

The Artillery School was divided into two schools: the Coast Artillery School and the School of Fire.

the US, the M1918 was used for low altitude attacks that engaged military aircraft in combat from the ground.

Recognizing the need for improved technology the Army replaced the dated WWI technology with medium and heavy-weight antiaircraft to support high-altitude attacks. At that time, the 40 millimeter (mm) automatic cannon was one of the most popular anti-aircraft guns available. This gun hosted three different types of high-explosive shells and was capable of penetrating some 50 mm of similar protective coverings at a range of 500 yards. The Army also employed a heartier 90 mm tank gun that replaced the M1918. The Antiaircraft Command became a major component of Army Ground Forces used widely to defend the country in the beginning of WWII. As a result, the Army made air defense a national priority.



90 mm gun training during World War II at Fort Bliss, Texas



Patch from 5th graduating class at the AAADS

"The use of the airplane for bombing and firing in World War I by the Germans led to the development of the first antiaircraft gun - 75 mm antiaircraft guns."

1917

The US officially entered World War I and aligned itself with the "Triple Entente," later known as the Allied Forces, to take on the German initiative.



A MAJOR FORCE

The AAA School established itself as a major force during WWII in the way it defended the Port of Antwerp, from German V-1 rockets – the first known pilotless aircraft (PAC).

Known as the Battle of Antwerp, the Germans launched more than 160 V-1 bombs within a 24-hour period. Soldiers defending the area were AAA graduates and responded with an, “unprecedented defense using anti-aircraft artillery units and allowed only four percent of the total rockets launched to reach the Port area” causing only minimal damage to Allied turf.

With this show of defensive anti-aircraft artillery success, the US War Department labeled the continued development of long-range missiles as a threat and required the AAA School to assemble a more sophisticated defense system.



V-1 rocket - flying bomb



The Anti-aircraft Artillery Board made it a requirement for the AAA School to develop a missile that could “out-speed and outmaneuver aircraft that were flying farther, faster and higher than had been dreamed of when conventional tube artillery weapons, such as the anti-tank bazooka, had been developed at Fort Bliss.”



THE ANTI-AIRCRAFT TRAINING CENTER

The Antiaircraft Artillery Board directive caused the US War Department to respond by forming a specialized training facility at Fort Bliss to advance US missile defense.

The new Antiaircraft Training Center (AATC) was used for the sole purpose of training complete antiaircraft units, which signified a change in the US' national defensive strategy. The AATC was established in 1940 at Fort Bliss on 800 acres known as Logan Heights.

The Department viewed Fort Bliss as the ideal location for instructional and tactical training not only because of the sparse population but also because it provided the environment needed for a variety of firing ranges. The AATC was housed in modern buildings centrally located to the large firing ranges. The recurring mild weather permitted field work, firing and testing year-round. The area's abundance of mountain-ringed desert also accommodated rocket and missile experiments which



120 mm gun emplacement at Fort Bliss, Texas

were ideal for the Department to take US' anti-artillery aircraft training to the next level.

By the mid-1940s, the US War Department had expanded the training center to include a 52,000 acre maneuver area. With this type of landscape, the AATC could conduct antiaircraft guns training during WWII and logistically support future air defense weapon system.

Within its first six years, a total of 18,671 officers and 51,717 enlisted men completed courses at AATC. During the same time period (1940–1946), Fort Bliss became the hub for Army antiaircraft training with practically every active antiaircraft artillery unit during WWII receiving training at the post.



1939

World War II erupted in Europe with Britain and France declaring war on Germany.

OPERATION PAPERCLIP

In 1944, near the end of WWII, the US seized new war technology which would prove critical as the Armed Forces tried to rebuild and revolutionize its defensive capabilities. Colonel Holger N. Toftoy, Chief of US Army Ordnance Technical Intelligence, confiscated components for 100 German V-2 rockets. This was a landmark event for the US as it reshaped its missile technology. The acquisition was doubly beneficial in that the US beat the Russians to the punch giving the US an advantage in the defensive race of the Cold War.

The V-2 components were sent to Fort Bliss for research and development and, in 1945, resulted in the US intelligence-led mission - Operation Paperclip. As part of the operation, German scientists were given immunity and brought to the US to lead research that eventually led to the development of missile systems such as Nike, Spartan and Sprint.

- US Army Air Defense School
- Army Training Center Antiaircraft Artillery
- Guided Missile Brigade
- Antiaircraft Artillery Group
- Army Air Defense Board
- Offices of Special Weapons Development



V-2 rocket

After a 35 year split beginning in 1907, the Artillery branch of the US Army was reunited as one center. Under the new structure, the Field Artillery School was part of the Artillery Center. The Artillery School consisted of the Coast Artillery

The V-2 rocket proved to be more effective than its predecessor, the V-1, because it had better mobility and capacity to reach the outer atmosphere. Despite the controversial Nazi ties of some of the scientists, Operation Paperclip single-handedly changed American missile development and launched the US into the rocket age.

By 1944, the US War Department had also consolidated the remaining antiaircraft forces at Fort Bliss. In July 1946, the US War Department formally established the Army Air Defense Center (AADC) at the post as a show of solidarity among its antiaircraft forces. The center consisted of seven divisions:

Branch and the AAA School. The Coast Artillery School was re-designated as the Seacoast Branch.

Patch from 56th graduating class at the AAADS



V-2 Rocket - The cigar-shaped streamlined ballistic missile was the first man-made object to reach the atmosphere's outer layer. It had a take off weight of 14 tons, including explosive materials, and flew at supersonic speeds approaching 3600 miles per hour. The rocket measured 46 feet by 10 inches long and operated at a range of 180-210 miles.

1940

The US War Department established the Antiaircraft Training Center on an 800-acre tract of land, known as Logan Heights at Fort Bliss.

POST WORLD WAR II

At the end of WWII the US changed its defensive strategy by making enemy air attack a secondary mission and instead, focus on rocket research and new missile system development.

Another driver of the evolving strategy was the discharge of thousands of men from the Army after World War II. The only guided missile battalion continually lost trained soldiers and had to work with untrained and inexperienced personnel. An official report covering the period February 1, 1946 to December 31, 1946 showed a 74 percent turnover of Fort Bliss personnel in one of the battalion's detachments, a vast comparison to what the Army experienced during the peak of WWII. Under these conditions, training was imperative.

The lack of soldiers caused the Army to introduce the concept of reserve units, which would later set the stage for AAA Reserve Officer Training Corps (ROTC). Although



Hands-on missile training at Fort Bliss, Texas

more expensive than ordinary artillery and funding for the new technology was scarce. The special liquid propulsion fuel required for the long firing distance and the powerful explosives raised the price of warfare. It became more

short-lived, the Army used the inactive time after WWII to build up its replacement and reserve units. The Army moved the AAA Replacement Training Center from Fort Bliss to Fort Ord, California. The so-called replacement units were trained and used to "fill in" for those enlisted men who completed their tour of duty.

The conversion to the new defensive strategy was experiencing challenges as well. The rockets proved much

important to insure that every shot hit the target area once the ammunition started costing thousands of dollars per shot. The cost was driven by not only the firepower to launch them, but the cost to develop the guidance systems needed to effectively direct the missiles.

In November 1946, the Antiaircraft Artillery School at Fort Bliss became the Antiaircraft and Guided Missile Branch, The Artillery School. This move was prompted by a brewing power struggle between the US Army and the US Army Air Corps (soon to be the US Air Force) over the control of AAA units.



"The thought in the minds of the military leaders in the economy mode was to retain the school at the expense of all other training in the belief that the school was the foundation for any eventuality."

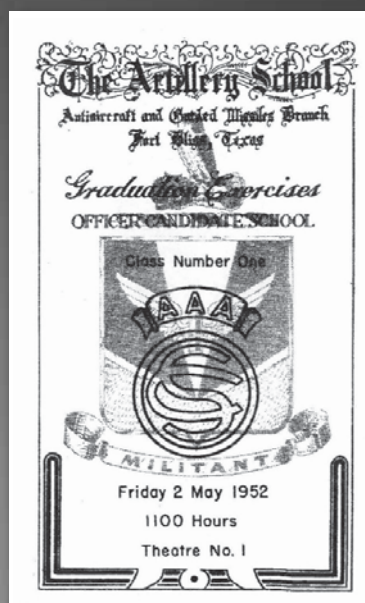
Lieutenant Colonel Lawrence Byers, 1947

1944

The Antiaircraft Artillery Board announced a requirement for the development of a missile with better capabilities – speed, range and height than conventional tube artillery weapons that had been developed at Fort Bliss.

Major General John L. Homer was named the first commander of the AADC. His background bridged the connection between early artillery training at Fort Monroe and artillery training at Fort Bliss, which made him an ideal candidate to lead the center. The July 12, 1946 Fort Bliss News highlighted his qualifications:

"General Homer was a USMA graduate commissioned into the Coast Guard Artillery in 1911 who had spent time training at Fort Monroe prior to World War I. He served with the 6th Coast Artillery and participated in the St. Mihiel and Meuse-Argonne offenses in France during World War I. He spent World War II in Iceland and served in Panama immediately before his assignment to Fort Bliss."



The AAA School Officer Class Number One graduation announcement



Patch from 3rd graduating class at the AAADS



1945

US began Mission Operation Paperclip and created a Development Sub-Office, also referred to as "Rocket" to initiate V-2 rocket research.

THE FEUD SETTLED

Infighting between the US Air Corps and the US Army Air Forces came early after the US Air Corps was designated as a combat arm of the US Army Air Forces in 1941. The US Air Corps did not want to exist as a subordinate of the US Army Air Forces but instead, wanted equal power. The US Army Air Forces, on the other hand, wanted to maintain its hierarchy and command.

Congress intervened to stop this early feud in July 1947 with the passage of the National Security Act (NSA). The NSA defined the roles for how anti-aircraft defense would be utilized and by which branch of the military. Under the act, the US Air Corps became the US Air Force and its role was to provide defense of the air space with aircraft. Under the new law, the Army's role was to organize, equip, train and administer control over anti-aircraft units. The Air Force maintained overall operational control of the nation's air defense and AAA School units.



President Dwight D. Eisenhower

The NSA only offered a temporary solution. In 1948, the advancement of military technology created more internal strife among the US Armed Forces over who would control the missiles and their deployment. The U.S. Army, US Marines and newly formed US Air Force had different opinions about who should have control over and who should run these operations.

The disagreement was resolved on November 25, 1956 when President Eisenhower's Secretary of Defense, Charles E. Wilson assigned responsibility for both the land base surface-to-air missiles and ground-air defense. He gave the US Air Force a broader role in missile defense and tasked the US Navy with handling sea-air missile defense.



1946

The Nike missile, a product of V-2 research, is introduced.

GUIDED MISSILE TRAINING INTRODUCED

Throughout WWII, the US continued to develop its nuclear holdings and by the end of WWII, had developed superior nuclear capabilities.

In 1946, the surface-to-air missile was introduced and the Army began searching for a facility to hold training as well as continue the missile's development.

As a result, the Army overhauled the AAA School in response and added a new guided missile instruction to the school's curriculum in November 1947. The Army re-established the AAA School as the Antiaircraft and Guided Missile branch and established the headquarters for the Antiaircraft Artillery and Guided Missile Center (AAAGMC) at Fort Bliss in Building 515.

As part of the curriculum, students progressed from the main post to Logan Heights to Orogrande Range to live firings at towed targets and Radio Controlled Artillery



Training unit at Fort Bliss, Texas

The purpose of the early guided missile officer training was to develop a pool of officers for future assignments when missiles become operational. AAAGMC also offered the following six 37-week courses to enlisted men:



Targets (RCATS). In 1947, the Army began conducting annual AAA ROTC summer camps at Fort Bliss.

By the end of 1947, the AAAGMC set up the Guided Missile Department to oversee program instruction. A total of seven courses were available to officers:

- Basic – 10 weeks
- Associate Basic – 13 weeks
- Advanced – 7 weeks
- Radar – 37 weeks
- Research and Analysis – 37 weeks
- Guided Missile – 37 weeks
- Associate Guided Missiles – 13 weeks

- Radar Repair and Maintenance
- Fire Control Electrician
- Electrician, Guided Missile
- Radar Repair, Guided Missile Technician, Fuels and Fuel Systems, Guided Missiles
- Technician, Gyroscope and Servo Systems, Guided Missiles

These officers needed to be sufficiently familiar with the technical details of guided missiles to be able to value the results, make tactical studies for employment and plans for the integration of guided missiles into the combatant arm.



1949

The US had four types of guided missiles under development.

The purpose for training enlisted specialists was to indoctrinate basic concepts of guided missiles so that a specialist such as a radar repairman could quickly learn the special techniques and new equipment associated with guided missile control systems.

In three years, the Guided Missile School grew to 29 officers, three civilians and 10 enlisted men. This was a major feat considering the school had no precedent to follow and lacked suitable training materials and instructors. Training manuals were developed by soldiers who performed the missile tests along with the German scientists of Operation Paperclip.

The Guided Missile School was growing quickly, and by 1949, the US had four types of guided missiles under development:

- Surface-to-air
- Surface-to-surface
- Air-to-surface
- Air-to-air



Perimeter Acquisition Radar (PAR) at Fort Bliss, Texas

The Artillery School was primarily responsible for conducting training on surface-to-air guided missiles, later known as the Nike missile system. The Artillery school dedicated a section to this technology and created the Department of Guided Missile. This department was responsible for overseeing Nike missile instruction.

the classes included officers from not only the Army, but also from the US Air Force, US Navy as well as other country alliances like Britain and Canada.

With little missile hardware and equipment developed at this time, the Department of Guided Missile was focused on developing the officers' program. The 37-week course was offered twice a year and focused exclusively on guided missile theory and design. Since the Guided Missile School was the only place offering training in this new subject matter,



1953

The Nike missile was fired for the first time by a troop unit, Package No. 2 of the First2First Guided Missile Brigade, at Fort Bliss on October 28, 1953.

GLOBAL TENSIONS INCREASE

The global arms race and differing political philosophies ignited Cold War tensions between the US and the USSR. From 1948 to 1949 three events caused the world to look more closely at the Soviet Union's defensive capabilities:



Residents of Berlin awaiting a cargo plane carrying food during the Soviet blockade of the city in 1948–1949.

In June of 1950, global tensions were heightened even more with the Communist takeover of China and the North Korean invasion of South Korea. Because the US Army began implementing its defensive strategy early on, the AAA units were able to respond and neutralize threats from North Korea and China during the first month of the invasion.



1949, USSR detonates an atomic bomb

Congress was impressed with the effectiveness of the US Army air artillery power during the Chinese and Korean



1. The 1948 Soviet blockade of Berlin
2. In 1949, the USSR detonated an atomic bomb
3. The USSR continued its development of long-range PACs. At that time, the Soviet's had developed a long range aircraft known as the TU-4 bull bomber used by for one-way assault missions and was capable of hitting targets as far as the US, Europe, northern African and Japan.

These acts amplified the global perception of a nuclear threat by the USSR. As a result, the US went on the defensive and deployed Army AAA units with 120mm guns at 23 strategic sites around the nation.

conflicts and, as a result, created the Army Organization Act in July 1950. This act established the Army Air Defense Command (ARAADCOM), abolished the Coast Artillery Command and combined the Field Artillery and the Army Antiaircraft Artillery into a single branch. The US Army was quickly proving its status as the free world's missile defense leader.

Ballistic missile - A missile that is guided in the first part of the flight but falls freely as it approaches a target.

1954

Hinman Hall (Building 2) was constructed at Fort Bliss.



A NEW GENERATION OF WEAPONRY

The Nike missile system was introduced by the US Army in 1954 as the first supersonic surface-to-air missile. This new projectile was a by-product of the V-2 rocket research conducted through Operation Paperclip. There were several generations of the Nike missiles developed. The Nike Ajax



Nike Hercules missile

was the first missile in the Nike family. It was a liquid, fuel missile that carried a conventional warhead with a range of 25 to 30 miles per hour (mph).

As the Nike missile system continued to evolve the Nike Hercules was born. Developed by the US, the Nike Hercules was widely used by the US and its Allies as

deliver either a nuclear or high-explosive warhead up to 75 nautical mph.

When both of these systems were operational, the Department of Guided Missile added several new courses to the curriculum as well and, again, began the task of recruiting additional officers and enlisted men to form the two units.

The courses at the school that were added included, electronic material maintenance and mechanical material maintenance, which taught students how to maintain and repair either the Nike or Corporal forward-moving system components.

In January 1951, the Department of Defense Director Keller established and the Secretary of Defense approved production facilities capable of producing Nike ground support equipment for three tactical battalions per month by December 1953. In 1953, a Nike Package Training

defense against bombers. More mobile than the Nike Ajax, the Nike Hercules had a range of about 77 mph – more than triple that of the Ajax!

The Hercules set the stage for development of the first antiballistic missile, the Nike Zeus. The Zeus proved to be very effective against the intercontinental ballistic missile (ICBM) – a missile system being used by the Soviet Union. As a result, the Zeus was heavily used by the US and the allies of the North Atlantic Treaty Organization (NATO).

While the Nike systems were in development, the Department was also developing a surface-to-surface guided missile known as the Corporal. This missile system could

Program began at the Army Air Artillery and Guided Missile School. Each "Package" consisted of 14 officers and 123 enlisted men which served as the nucleus of each Nike battalion. Each package attended a five week integrated training segment and learned specialized skills in the classrooms and laboratory of the AAA and Guided Missile School. The first Nike Ajax unit completed training at Fort Bliss in 1954 and was deployed to Fort Meade, Maryland. Over the next three years, almost all of the 200 Nike Ajax batteries located throughout the US received training at Fort Bliss. The Nike II Missile would define the US antiballistic missile (ABM) system technology requirements and site policy for the next 25 years was the forerunner of the Safeguard Missile ABM program.

Intercontinental ballistic missile (ICBM) - A long ballistic missile that can travel up to 3,500 miles and carries a highly destructive amount of nuclear power. These are the most destructive of all ballistic missiles.

1956

The Army Air Defense School was born on October 24, 1956.



By the latter part of 1952, both Nike and Corporal units were approaching an operational state. The formation of units required considerable numbers of officers and enlisted men who were skilled in the use of these two missiles. More courses were established to fill this need. One was a 12-week officer course set up to train commissioned officers for non-technical assignment in either a Corporal or Nike Unit. Two other courses were set up for warrant officer and enlisted personnel. One was an electronic material maintenance course, seven months in length, with specialization during the last half on either the Nike or the Corporal missile electronic system. The other was mechanical material maintenance course of nine weeks, which trained the student to maintain and repair either Nike or Corporal propulsion system components. The great demand for Nike-trained officers resulted in a separate, one-month course to familiarize officers on the operation and employment of Nike. During this same period the Department of Electronics at the school increased its

Mathematics and propulsion were assigned to the Department of Electronics and Engineering.

The Army established an Officer Candidate Department in November 1951 to produce second lieutenants in artillery. The ranges at Fort Bliss supported tactical employment and the firing of weapons, from pistols to guided missiles, for the Antiaircraft Artillery and Guided Missile School (AAGMS). Also in 1953, training began on the first supersonic surface-to-air guided missile and the Nike Ajax missile subsequently followed by the Nike Hercules Missile units. Finally, training on surface-to-surface missiles for weapons such as the Lance Corporal and Honest John Missile were moved to Fort Sill. In a few short years, Fort Bliss had become the US Army's premier center of expertise in the guided missile field and a crucial element in Cold War defense efforts.

In 1952, the school established "The Atomic Weapon-Guided Missile Orientation Course," which was attended



scope in guided missile curricula from a basic electronic course for all long courses to eight-month courses, separate for Nike and Corporal which trained warrant officers and enlisted personnel to maintain and repair the electronic portions of the ground guidance systems.

At this time the facilities of the Department of Guided Missiles occupied half of Building 512 (Brady Hall) as well as buildings 2330 and 2340. By 1953, the expanded teaching requirements required an expansion of facilities so the Department of Guided Missiles moved to Building 60, a specially constructed laboratory. In November 1954, the training of Nike and Corporal ground-guidance maintenance specialists became the responsibility of the Department of Guided Missiles.

by a long list of both civilian and military VIPs. The course lasted five and one-half days and was normally held 44 times a year. In six years, the graduates included four Lieutenant Generals, 89 Major Generals, 180 Brigadier Generals and 1,839 Colonels.

North Atlantic Treaty Organization (NATO) - A military alliance of Belgium, Canada, Denmark, France, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Great Britain and the US that was formed on April 4, 1949 as a way to discourage Soviet attack. The member countries agreed to treat attacks on any of the member nations as if it were an attack on itself.

1959

Enrollment at the Army Air Defense School tripled in size to 8,350 students.

HINMAN HALL HEADQUARTERS

In a few short years following World War II, Fort Bliss had become the U.S. Army's premier center of expertise in the guided missile field. Its continued growth not only demanded increased enrollment numbers but considerable land growth as well. By 1953, Fort Bliss expanded its facilities to an area more than 20 miles by 90 miles. This build-out was necessary to accommodate the expansion of new training and defense programs. This area included firing ranges to allow students to practice shooting a wide variety of weaponry from pistols to guided missiles.

From 1946 to 1966, the expansion of Fort Bliss continued with the addition of 3,856 buildings. The most significant building constructed during this mini-building boom was Hinman Hall, also commonly referred to as "Building Two." Named after Brigadier General Dale Durkee Hinman, this building was the largest structure on the post constructed by engineering firm R.E. McKee at \$2.5 million (approx-



Hinman Hall auditorium at Fort Bliss, Texas

"Our new academic building-modern, streamlined, solid strong-exemplifies the strength and growth of the anti-aircraft artillery and the importance of the activities now being conducted within its walls."

mately \$19.3 million in 2008 dollars). Hinman Hall also served as headquarters for the AAAGMC.

As the primary academic building for the Air Defense School, the building contained classrooms, laboratories, a 1,200 seat auditorium for student instruction, and a three-story administrative wing. Several areas were only accessible through security cages due to the secret nature of missile activities.

General John E. Dalquist, Commanding General, Continental Army Command, delivered the dedication ceremony speech on November 23, 1954, describing the building as:

Patch from 6th graduating class at the AAADS



The Guided Missile Department was organized into a Surface-to-Surface Missile Section, a Surface-to-Air Missile Section, a Research and Analysis Section, an Advance Missile Techniques Stipulation Section and a Technical Atomic Warheads Section.

1961

The buildings and equipment at AADS were valued at approximately \$166 million (\$1.1 billion in 2008).

THE ARMY AIR DEFENSE SCHOOL IS BORN

The US continued to make advancements in its nuclear technology, which prompted Major General Robert J. Wood, Commandant for the AAAGMC, to write a memo to the US Continental Army Command requesting to reposition the AAAGMC. He expressed that this would be necessary if the installation was to be ready for training beyond that of missiles and projectiles. His request was granted on October 24, 1956 and the US Army Air Defense School (AADS), or 'Army Air Defense School' was born.

As a result, the Air Defense School began restructuring all of its academic programs. Under the reorganization, three academic sections were implemented: Guidance, Aero-Propulsion and Tactics and Gunnery. In addition, six new departments were established.

Three departments were developed based on the type of weaponry system utilized: High Altitude – Nike Hercules system; Medium Altitude – Nike Ajax system and Low



THE SYMBOL

Scarlet: The color of traditional artillery

Blue: Denoted the skywhere the missiles are fired

Gold: Symbolized the electronic emanations used in electronic warfare and guided missiles

Altitude Missiles. The remaining departments were devoted to instruction and program management: Command and Staff; Electronics and Engineering and Non-resident Instruction.

A new brand and identity was also created for the Air Defense School. The school's motto became "First to Fire" and a patch divided into three sections became its official symbol. After approval, the Defense School went on to prominently display the symbol on its buildings and placed the shoulder patch on its uniforms. The AADS doubled in size between 1957 and 1958 with 327 building facilities and the registered student population totaled 6,000 for its training programs. Hinman Hall became the primary

academic building for the AADS and the main location for the advancement of guided missiles. In order to meet classroom instruction demands, the school made accommodations to operate on a 20-hour daily schedule.

One of the chief instructors at AADS made the following remarks about the school's training program tripling in size:

"On April 25, 1958, the Chief of the Nike Hercules Missile Division of the School announced that he expected the size of his classes to triple by the end of

As a result of Major General Robert J. Wood's memo to the US Continental Army Command requesting to reposition the AAAGMC, the school began to restructure all of its academic programs.

1962

The Air Defense School held an industrial orientation for approximately 50 representatives of missile and electronics firms, including Western Electric, Bell Telephone, Raytheon, Hughes Aircraft, Aerojet Corporation and IBM.



the year, swelling enrollment to an anticipated 1,700 men. The estimate was described as a normal growth pattern caused by on-site conversion to the new missile. This, plus the necessary training of new instructors, pushed the division schedule to a 20 hour day."

With the US focus on ABM defense, training on anti-aircraft guns ceased entirely at AADS and Fort Bliss by 1960. The US invested millions for ongoing development of the AADS training programs. The equipment at the AADS was valued in excess of \$160 million (approximately \$1.1 billion in 2008 dollars) with the physical plant alone worth a little more than \$15 million (approximately \$111 million in 2008 dollars).



Hinman Hall AADS school entrance



1963

The Secretary of Defense Robert S. McNamara directed a scale down development of the Nike X and introduced the Sentinel Program, which used the Spartan and Sprint missile systems.

MISSILE TRAINING BECOMES TOP INVESTMENT FOR US

The Union of Soviet Socialist Republics (USSR) surprised the US and the world on October 4, 1957, when it launched Sputnik, the world's first artificial satellite. This action made it evident that the Soviet's had the ability to launch an ICBM to reach a target within the continental US and turned the Army's focus on protecting the US from Soviet ICBMs.

Defense became a national military priority and obsession for the US. The decision by the US to augment funding for missile defense training programs enabled the AADS to make a name for itself on an international level.

Training reached a new level at AADS with 53 course-offerings ranging in length from one to 68 weeks. The most advanced course on guided missiles was known as "1181 Course." Due to the intensity of this nine-month course, officers had to be selected to attend. Studies for this course



Soldiers training at Fort Bliss, Texas

After the formation of the NATO and Allied Troops, the AADS implemented a Language Enhancement Section (LES) in 1965. The section trained foreign military personnel, including officers in 13 different languages on the

consisted of propulsion guidance, aerodynamics, advanced electronics and nuclear physics. Students participating in the "1181 Course" also had to meet prerequisite requirements of college level courses in differential and integral physics and one semester of college level engineering physics, which were some of the most advanced courses in math and physics for this era.

Not all students were with the US Army. Missile instructors and technicians were also training the Navy, Air Force, Marines and National Guard, Organized Reserve Corps, and ROTC guided missile units. The AADS also trained officers and enlisted foreign students, both English speaking and non-English speaking on all facets of air defense.

maintenance and use of the Nike Hercules system. AADS received visits from more than 7,000 foreign students and dependents for training under its LES.

Recognizing that federal funding and community goodwill was critical to continue the development of missile systems and training programs at Fort Bliss, the Army developed several programs like the LES to support this initiative.

The AADS hosted the Worldwide Air Defense Instructors Conference using mostly classified materials. The conference helped to solidify the school's international presence and its reputation as the leading center of expertise in the guided missile field.

According to the Military Review Center Information Office, upon completion of the 1181 Course officers could, "talk the language of the scientist and advanced mathematician or discuss detailed problems with a technician in a fire unit."

1965

A Language Enhancement Section (LES) was introduced by AADS to meet allied troop needs.

In 1958, the US Army hosted the “mightiest missile” show at AADS. The staged event made Army history by attracting more than 400 leaders from the federal government, military and defense industry including top US leaders Wilber M. Brucker, Secretary of the Army and General Nathan F. Twining, Chairman of the Joint Chiefs of Staff. The AADS showcased the following missiles during the demonstration: Corporal, Honest John, Nike Ajax and Nike Hercules, Little John, Hawk, Lacrosse, Dart and Talos.

Missile shows grew to be such a constant attraction at AADS that later the same year the school constructed a special demonstration laboratory in Building 769. The presentations conducted in the laboratory lasted about an hour. Each presentation began with an explanation of the general concepts of guided missiles and what made them work.



Hawk Missile Launch System

By 1965, there were 4,077 itineraries for civilian and military dignitary visits to AADS from U.S. and allied nations. At this point, the AADS and Fort Bliss contained the largest single concentration of allied soldiers within the framework of the continental U.S. Army making the school vitally significant in the structure of national defense.

The Air Defense School conducted a large community education program, Operation Understanding, for representatives from communities nationwide which were receiving Nike missiles.

1969

President Richard Nixon announced the deployment of the Safeguard Program, a scaled-down version of the Sentinel Program.



PLAY/BLIVE/HIT

In addition to the continued nuclear arms buildup by the US and the Soviet Union, three other incidents contributed to the escalating threat of nuclear war between the two superpowers:

1. On May 1, 1960 an American-piloted U-2 Spy plane gathering Soviet missile information was captured by the Soviet Union.
2. The response to this event by the Soviet Premier Nikita Khrushchev on October 11, 1960, shocked the world when he hammered his shoe on a desk during a speech at the United Nations in New York and shouted in Russian, "We will bury you."
3. In October 1960, the Soviet Union aimed a nuclear tipped missile at the US from Cuba, just 150 kilometers south of Florida. This became known as the Cuban Missile Crisis.



These events made antiballistic missile defense a priority for the US overnight. The US immediately ordered peak deployment of Nike missiles to 134 batteries around the country as the Soviet Union continued massive build-up of nuclear tipped ballistic missiles.



"The flourishing day of the cavalry are gone, and the flank of sweat soaked steed is replaced by the steel bright shine of America's watchdogs of the sky."

Fort Bliss News June 28, 1967

1970

The plans for the Sentinel Central Training Facility were scrapped and re-designated as the Safeguard Central Training Facility (SCTF) and part of AADS at Fort Bliss.

A NEW DIRECTION

The Antiballistic Missile (ABM) Era caused the AADS to look at a new direction for missile defense. Training on the Nike Missiles reached its peak between 1962 and 1965. In 1962, the Army phased out the first National Guard Nike Ajax missile sites and began retraining the guard soldiers to deploy the Nike Hercules system. In 1963, the Nike Zeus program was canceled and replaced with the Nike X program. By 1964 training on the transition from Nike Ajax to Nike Hercules missiles were discontinued. By 1969, only 82 Nike batteries remained active. The Vietnam War took priority over further development of the Nike Missile system.

Public popularity about the build up of nationwide missile sites began to decline and politicians began questioning the feasibility and strategy of adding more missile sites. Secretary of Defense Robert S. McNamara believed more offensive weapons similar to what were being used by the US Air Force were more certain defense and more effective



Nike Hercules missiles

the US defensive strategy that led to the phase out of the Nike X system. The new strategy focused school training on a new approach to missile defense—the Sentinel.

than ABMs. McNamara also thought increasing the amount of US ABMs would antagonize the Soviet Union, thereby causing them to build more offensive weapons. As a result, the Nike Zeus program was canceled and replaced with the Nike X program.

By 1964 training on the transition from Nike Ajax to Nike Hercules missiles were discontinued. New missile technology was the focus of the AADS with the development of tri-dimension battle space concepts that were necessary to advance air defense weaponry. This resulted in a change in

The Sentinel used the same Spartan and Sprint missiles as the Nike system but featured a huge perimeter acquisition radar (PAR) and shorter range missile site radar (MSR). The Sentinel System is later renamed the Safeguard System as the US makes the switch to a more conservative defensive strategy.

The Sentinel deployment plan for 15-20 cities was approved by then Secretary of Defense McNamara. President Lyndon Johnson was pressured into deploying the ABM system receiving intelligence reports that the Soviet Union was deploying ABM's.



1972

The first female students enrolled at USAADS.

In November 1968, Richard Nixon was elected president of the US. Once in office, he modified the Sentinel deployment plan to protect only the retaliatory capability against a strike from the Soviet Union. President Nixon renamed the Sentinel Program to the Safeguard Program in 1969.

Under the new Safeguard plan, Nixon also approved deployment of the ABM system to protect the Minuteman launch facilities with a limited number of nuclear missiles from a pre-emptive strike across the North Pole.

The change in strategy had a direct impact on AADS. Training and instruction suffered and adjustments were made to cater to the new missile system. The school organized the US Safeguard Site Activation Command Control Training Facility to prepare students to deploy the Safeguard Program. As a cost-saving measure, self-paced individualized instruction was added to the school's curriculum.



Training program for the Safeguard Ballistic Missile Defense, Fort Bliss, Texas



By 1973, the Low Altitude Air Defense Department introduced group paced instruction as well as "peer instruction" in the Hawk and Nike Hercules missile system and five thousand air defense artillery men from 72 courses graduated from AADS.

Also as part of the transition, the AADS was transferred from the US War Department to the office of the Secretary of the Army and the Office of Management and Budget. The Fiscal Year 1974 AADS Report states that the school was "to conduct combat/training developments and school training in all air defense fields."

As a result of the change in oversight, the AADS updated

its departments to reflect the new Safeguard organization. The school now consisted of five divisions:

- Command and Staff
- High Altitude Missile
- Low Altitude Air Defense
- Army Wide Training Support
- Missile Electronic and Control Systems

Seven-hundred students received training at AADS on an annual basis in the Nike Hercules, Hawk Chaparral, Vulcan and Redeye Air Defense systems for the Army, Army Reserve, Army National Guards, non-commissioned officers and technical and tactical leadership.

"The Strategic Arms Limitation Treaty (SALT I) signed by President Richard Nixon and Soviet General Secretary Leonid Brezhnev on May 26, 1972, marked the beginning of the de-escalation of the arms race with USSR and the eventual end of the Cold War."

1972

The Strategic Arms Limitation Agreement (SALT 1) was signed by President Nixon and Soviet General Secretary Brezhnev to mark the beginning of the de-escalation of the arms race with USSR and the eventual end of the Cold War.



Nike Zeus missile (also known as the Nike II)

According to Air Defense Trends, in 1969 Hinman Hall was designated as home of air defense artillery and a repository for history, trophies and awards pertaining to Army combat. The AADS continued to experience vast changes throughout the 1970s and 1980s. By 1977, the personnel strength



Patch from 1st graduating class at the AAADS



at AADS started to decline from the peak of its training in the 1950s and 1960s with 4,164 with officers, enlisted students and civilians. Training forces at AADS were merged and changes occurred in the organizational structure to oversee the development of new weapons. For example, the Air Defense Artillery Training Brigade and the Air Defense School Basic Combat Training Brigade were combined.



1977

The personnel strength started to decline from the 1950s and 1960s with 4,164 officers, enlisted students and civilians.

AADS ESTABLISHES ITS PLACE IN HISTORY

In 1972, the AADS bridged the gender gap and four women from the Women Army Corps (WAC) attended the school as the first female students to receive instruction from AADS. They received training in an Air Defense Command Control and Coordination System Operator's Course.

In 1983, the AADS added 14 courses and deleted 12 courses from its curriculum. The purchase of the Chaparral Missile system and the Vulcan by foreign countries resulted in four new courses for foreign students. TRADOC systems managers were added to the organizational structure to oversee development of planned new weapons systems. The TRADOC system managers were responsible for testing, doctrine, organization, hardware, software, logistics, training personnel and testing. The Division Air Defense gun was designed to replace the Vulcan gun; the Roland was designed to replace the Chaparral missile system, the Patriot was designed to replace the

was evident in the expansion of Fort Bliss and the Defense School in particular. The modern facilities exemplified strength and the personnel that roamed the classrooms symbolized valor.

The AADS is the pioneer in artillery and missile defense training that has set the stage for present day tactical defense programs. The unparalleled training programs that once took place within its walls established the US as a strong international force and can arguably be credited with changing the face of the nuclear arms race and the Cold War for the free world.



Patch from 4th graduating class at the AAADS

Nike Hercules and Hawk missile systems and the Stinger was designed to replace the Redeye missile system.

The final class session at AADS during the Cold War period was held in 1989. The training was titled Forward Area Air Defense (FAAD) systems and was designed to neutralize enemy air in forward battle positions. This was the last missile system taught during the Cold War at AADS.

The AADS has played an integral part in US history because of its role in advancing the nation's defensive combat arm. The US invested a great deal into national security, which



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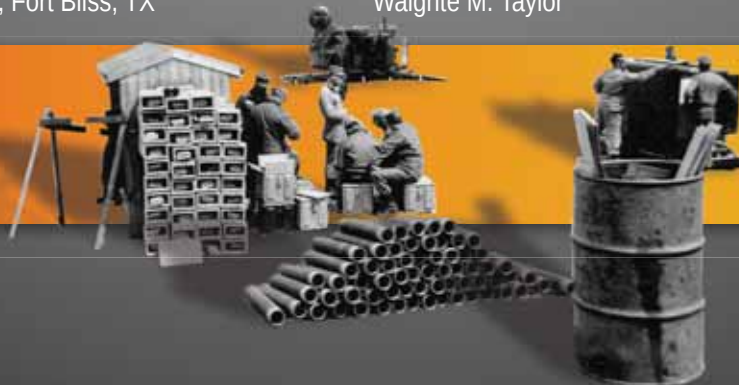
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Design and Production by:

HNTB Corporation in cooperation with
Miratek Corporation.

www.hntb.com

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A FORT BLISS PUBLICATION