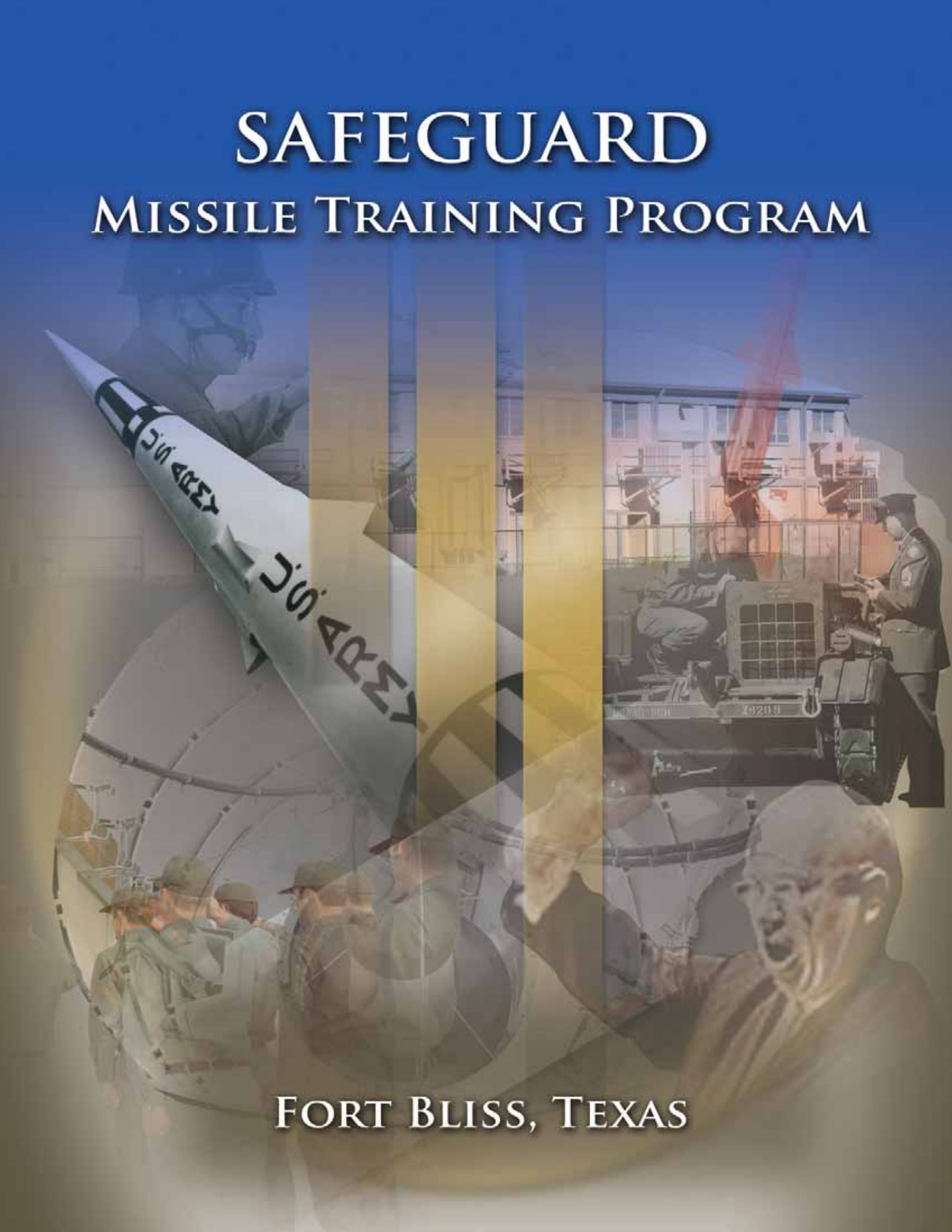
SAFEGUARD

Missile Training Program



Fort Bliss, Texas

Acknowledgments

For almost fifty years the United States and the Union of Soviet Socialist Republics were locked in an ideological conflict that defined the Cold War. This era had its tense moments, on the brink nuclear war episode and the proliferation of weapons beyond the common imagination with the capability to destroy the world in the blink of an eye many times over. Although proxy wars were raged in the third world, the two super powers avoided direct conflict that would test their technological advancements. The ever steady march of technology was the battlefield of the Cold War and the Safeguard Missile Program, perhaps more than any other technological development, was the culmination of advancements made during this era.

Safeguard, like much of the Cold War technologies and events centered on the protection of mainland US has received very little public attention since its dismantling, much in contrast with the public and political attention heaped on it at the time of its development and installation. The intent of this publication is to capture some of the events leading up to the development of the system, the system itself and its training program here on Fort Bliss. The facilities on Fort Bliss that housed the Safeguard training program have great significance not only in our Nation's history but also for understanding global events of the time. It has been determined eligible for inclusion in the National Register of Historic Places in recognition of this significance. This public oriented publication offers a beginning point in understanding this period from which, hopefully, further understanding may be built upon.

Center to preparing this publication were Chuck Angelo and Donsel Champ who served on Fort Bliss as part of the Safeguard training program. Both men hold key institutional knowledge of the program and were kind enough to share their knowledge in preparing the following. Thank you for your time and your depth of knowledge, it has added greatly to this publication. I would also like to acknowledge the outstanding work of Cherilyn Widell in the research necessary in preparing this publication along with Shannon McCord, Guy Garrett and Jamie Pritchett in the layout of it. Thank you all!

Russell Sackett
Historical Architect

Introduction

During the 20th Century, The Cold War was one of the most notable and memorable periods of the era. For nearly a half-century the US and the then Union of Soviet Socialist Republics (USSR) competed for world dominance through military initiatives, nuclear arms, espionage, space exploration as well as industrial and technological advancement.

> *"In this atomic age no nation can survive to fight a global war unless it protects itself from the rain of enemy atomic bombs."*
>
> *- General Stanley R. Mickelsen, November, 1957*

Of all these arenas, the nuclear arms race was one of the most pivotal in the political tug-of-war between these two World powers. During this time, The Safeguard Missile Program was at the forefront of the US nuclear strategy.

The Safeguard Missile Program reached its zenith in 1975 with the construction and activation of the Stanley R. Mickelsen Safeguard Missile Complex in Nekoma, North Dakota. The Safeguard Missile site, which cost more than $500 million to construct, was fully operational for less than 24 hours and was the only operating anti-ballistic missile (ABM) facility ever completed in the US.

The Safeguard Missile Program began in March of 1969 when newly sworn-in US President Richard M. Nixon announced the Program's deployment. The purpose of the Program was simple - to protect America's ability to strike back with nuclear arms if attacked.

Although the Safeguard Missile Program was extremely short-lived, a massive, concentrated effort went into the planning and preparation for the Program. All of the technical training for Safeguard took place entirely at Fort Bliss, Texas; some in special facilities constructed exclusively for the program.

The construction and manning of the site is credited with beginning, the decline, and eventual end, of the nuclear arms race with the Soviet Union.

The Beginning

Although the "Cold War" officially began in 1947, the US and USSR had been at growing ideological odds for some 30 years prior when a Russian Communist regime led by Vladmir Lenin ousted Russian Tsar Nicholas II. The new government's goal was to overthrow capitalism which the US perceived as a threat to its national security.

Russian Tsar Nicholas II ruled from 1894 until his forced abdication in 1917.

In 1922, when Joseph Stalin became leader of the USSR, the relationship with the US worsened. Stalin continued to support Lenin's theory of "socialism in one country," but his ultimate goal was to promote what he called industrialism and collectivization – two initiatives that led to the deaths of what is estimated at millions of Russian citizens. During his 29-year reign he continued to dominate neighboring countries to continue building toward the demise of the capitalism of England and the US. A key defense to his program was the continued expansion of military and weapons, an initiative that continually closed the USSR off to the world.

Communism - A political theory derived from Marxism (Communist Manifesto by Karl Marx), advocating a society in which all property is publicly owned and each person is paid, and works, according to his or her needs and abilities, ultimately creating an economic system by which all means of production are controlled by the government.

At the end of World War II the threat increased with the introduction of atomic weapons. The US had been at the forefront of this technological breakthrough when it established nuclear capabilities and used atomic bombs to cause the surrender of Japan in 1945. Shortly after in 1949, the USSR detonated its first atomic bomb and the nuclear arms race between the two countries began. Using the existing technology of utilizing missile defense against bombers, American scientists and engineers began searching for a way to protect the US against long - range ballistic missiles. During these landmark technological developments, the world became polarized between the two super powers and their nuclear capabilities.

Vladimir Lenin was the 1st de facto leader of the USSR, and primary theorist of Leninism.

Joseph Stalin became leader of the USSR in 1922.

In addition to the two country's rapidly growing nuclear holdings, three significant incidents occurred that contributed to the escalating threat of nuclear war between the two nations:

1. On May 1, 1960, an American U-2 spy plane piloted by Francis Gary Powers, gathering information about Soviet missile capabilities on a high altitude reconnaissance flight, was brought down near Sverdlovsk, causing the capture of the pilot.

Socialism - Another Marxist theory defining an economic system based on public ownership of all means of production as well as all distribution of goods and wealth.

2. In response to this event, Soviet Premier Nikita Khrushchev stunned the world by hammering his shoe on a desk during a speech at the United Nations in New York on October 11, 1960.

3. Those actions were an indicator of what was to come in October 1960, when the USSR aimed nuclear tipped missiles at the US from Cuba- just 150 km south of Florida. Known as the Cuban Missile Crisis, a nuclear war between the US and the USSR was barely averted through skillful negotiation by President John F. Kennedy. These events resulted in ABM defense of nuclear weapons becoming a top priority for the US overnight.

Capitalism - An economic system in which individuals have the ability to produce their own goods and income, encouraging private-ownership and competition.

Nikita Khrushchev stunned the world by hammering his shoe on a desk during a speech at the United Nations

The Cradle of American Rocketry

Antiballistic missile (ABM) - A defensive missile designed to intercept and destroy an in-flight ballistic missile.

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

The first pilotless aircrafts (PAC) to be used effectively in warfare was the German V-1 rocket often called the "flying bomb," "buzz bomb," or "doodle bug." This warhead carried 1,660 pounds of high explosive material, had a range of 250 miles and could travel up to 350 miles an hour.

German V-1 rocket

When the PAC reached its target, the fuel supply was cut off, and then it dove and exploded. Such long range missiles posed a real threat in battle. During WWII there were V-1 attacks during the Defense of the Port of Antwerp. During these attacks, the Germans averaged launching 160 V-1 bombs within a 24-hour period. The US Army responded with an unprecedented defense using antiaircraft military units and allowed only 211 of the 4,883 total V-1s that were launched to reach the Port area, and those caused only minimal damage.

German V-2 rocket

Even with this landmark defensive success, the US War Department determined that the continued development of long-range missiles was an increasing threat and would require the US to amass much more sophisticated defenses.

The Germans continued to develop their offense with the creation of the V-2 rocket. This was an early ballistic missile that weighed nearly 12 tons and traveled faster than the speed of sound. Traveling that fast you could not see it, and would only know you had been hit when it exploded. Ultimately, there was no defense against it and it was the ultimate technology at the end of World War II. As a result, the US government began the conception and development of "guided interceptor missiles" or what became know as ABMs.

The US Army organized the First Antiaircraft Artillery and Guided Missile Battalion and School by September 1946 at Fort Bliss in El Paso, Texas. Under what was called Operation Paperclip, Fort Bliss became the center of research of the German V-2 rocket research led by, German Scientist Wernher Von Braun as well as the development of the first ABMs.

German Scientist Wernher Von Braun

Operation Paperclip

Operation Paperclip was a US intelligence-led initiative during the final stages of World War II in which the US removed German scientists from Nazi Germany and brought them to the US to garner their scientific knowledge and expertise on missile development. Although this was a controversial scheme, as many of the scientists had Nazi ties, this initiative single-handedly changed the course of American missile development and launched the US into the rocket age.

Operation Paperclip Team

Nike Ajax Missile

One of the first missiles to be developed and tested at the Fort Bliss facility was the Nike Ajax surface-to-air missile system. Introduced in 1946, this projectile was a liquid fuel missile that carried a conventional warhead and had a range of 25-30 miles. The Nike Ajax was developed solely to replace the older gun-based systems that were proving to be less and less able to effectively defend against the improving technology of the enemy's manned-bombers and fighter aircrafts.

The Nike Ajax was deployed in 1953 at Fort Meade in Maryland and was then systematically placed around the US to protect strategic and tactical sites, cities and military installations, as well as serving as a last-line of defense from air attack.

As the Cold War strengthened, so did the strength of USSR missiles. The US Army became concerned that the Nike Ajax might not be enough to halt a massive USSR air attack. As a result, a stealthier version of the Nike Ajax was soon developed. Dubbed the Nike Hercules, this surface-to-air missile had a range three times that of its predecessor. The new missile was designed to operate using the same framework as the Nike Ajax – just more of it. Nike Hercules required four of the Nike Ajax liquid-fuel rockets for its high-powered launch.

Aside from bigger and faster, the Nike Hercules was not much more advanced than the Nike Ajax.

The missile's purpose was basically the same as the Nike Ajax - designed to engage and destroy whole formations of fixed-wing aircrafts. This missile's technology was not capable of effectively targeting incoming missiles and could not be depended on for this function. However, this advancement was still a milestone in the missile defense technology that would continue to improve over time.

Intercontinental ballistic missile (ICBM) - An intercontinental ballistic missile, or ICBM, is a long-range 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 the ballistic missiles.

The Nike Hercules was not developed at Fort Bliss, but missile training was conducted at the Army Air Defense School (AADS) on the base and testing of the missile took place at White Sands Missile Range in New Mexico.

The Sprint (left) and Spartan (right) missiles

Nike Hercules was released for deployment to replace the Nike Ajax in 1958.

As the USSR continued to increase their nuclear capabilities, the US strategized how to defend against it. The fear of long-range bombers was replaced with those associated with intercontinental ballistic missiles (ICBM).

Neither the Nike Ajax or Nike Hercules would be effective in this type of attack and, as a result, by 1958, the Nike project approved development of the

Nike Zeus Missile (Also known as the Nike II)

Nike Zeus (also known as the Nike II), which was the third generation development in the Nike Missile project and the first US ABM ever developed. This long range missile could travel hundreds of miles and was capable of identifying and intercepting enemy missiles. Its tests proved that Nike Zeus could intercept a true ICBM, which it actually did nine times. It also destroyed a satellite in earth orbit.

The Nike Zeus was never deployed, however the success of its technology served as a prototype for further ABM development, and defined the US ABM system technology requirements and site policy for the next 25 years. As with any system of power, there was internal strife among the armed forces on who would control the missiles and their deployment. The US Army, newly formed US Air Force, and the US Marines all had opinions on how the operations should be run and who should be in control. The disagreement between the armed forces was resolved on November 25, 1956 by President Eisenhower's Secretary of Defense, Charles E. Wilson, who assigned responsibility for the "development, procurement, and manning of land-based, surface-to-air missile systems for point defense' to the US Army. This decision provided the US Army with the responsibility of ground-air defense and a broader proactive offensive role for the brand new US Air Force. The US Navy was tasked with sea-air missile responsibilities.

On October 4, 1957, the USSR surprised the US and the world when they launched Sputnik, the world's first artificial satellite. With this launch, it was made clear to the world that the Soviets were not only space pioneers, but also had the ability to launch an intercontinental ballistic missile (ICBM) that could reach a target within the continental US. As a result, the US defense against the USSR ICBM became a national military priority and obsession. By 1959, the US AADS at Fort Bliss had begun training 2,500 future missile and electronic technicians to man Nike and Hawk missiles for guided missile defense.

Minuteman Missile – an interballistic guided missile that carries nuclear weapons to a specific target.

In 1961, under the Kennedy Administration, the popularity of increasing missile sites in the US began to wane. The technological feasibility and strategic advisability of building more missile sites was constantly being questioned by both the public and politicians. Secretary of Defense Robert McNamara, who served in both Kennedy and Johnson administrations, believed that offensive weapons under the control of the US Air Force, like the Minuteman missile, were a more certain defense as well as more cost effective than ABMs. He also believed that an increase in the ABM system would cause an increase in the number of offensive missiles the USSR would develop.

As a result in January 1963, McNamara directed a scaled-down development by dismantling the Nike Zeus program and replacing it with the Nike-X.

John F. Kennedy

The Nike-X was not a single missile, but a combination of technologies for the ultimate defense. The program included two types of missiles, a phased-array radar (PAR) and a missile site radar (MSR). One of the two missiles was the long-range Nike Zeus continuing to serve as the ICBM interceptor. In addition, a short-range, nuclear-tipped interceptor was introduced called the Sprint. Highly-classified, this missile could travel at unparalleled speeds and through exhaustive testing, had a strong record of accuracy. The Nike-X hosted a PAR which would detect incoming warheads and within three seconds determine their trajectory. It also had a MSR that, when alerted by the PAR of incoming missiles, would target and launch the Nike Zeus (later to become the Spartan) and Sprint missiles. All of these components were advanced systems in regard to navigational systems, target accuracy and control. With the development of this new program, the Nike-X became the most advanced, and the only ABM in the free world. It is this combination of radar and missiles that would become the Safeguard ABM Program.

The Nike-X was an advanced version of the Nike Zeus

In 1967, the US and USSR had another nuclear competitor in their midst. China had created and exploded its first nuclear weapon, instantly making them a nuclear threat to the US. As a result, President Lyndon Johnson refocused the ABM program from the ICBM

missile threat of the USSR to the newly emerging threats of China. This reprioritization became known as the Sentinel Program and was designed to protect the nation's urban and industrial areas from both China and the USSR as well as provide a defense missile shield against an accidental missile launch.

In 1969, Richard Nixon was elected into office amidst the escalating Vietnam War, an anti-war climate and depleting military budgets. As with any administration change, defense programs would be reevaluated. On March 14, 1969, only a few short months into his presidency, President Nixon announced the end of the Sentinel Program and the deployment of the Safeguard ABM Program – essentially the Sentinel System with a new name.

The impetus behind Nixon's decision was twofold:

1. The pressure to reduce or eliminate the escalating costs of the Sentinel System

2. The pressure to reduce the number of US missile sites and reduce the chance of the USSR to retaliate.

Lyndon B. Johnson

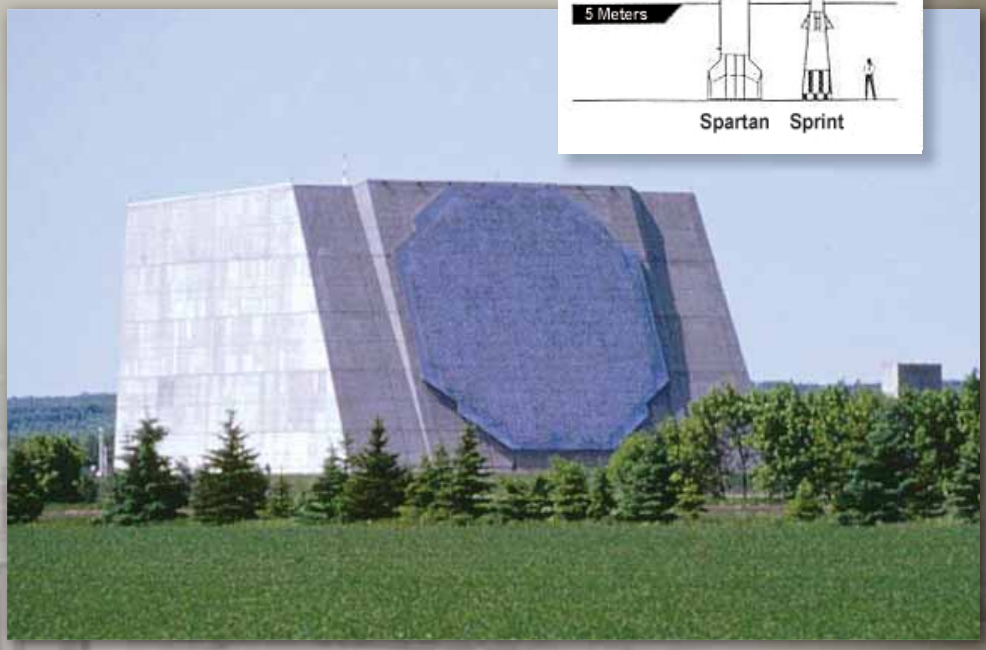
The Safeguard ABM Program was designed to be a US Army monitored defense of nuclear armed Sprint and Spartan missiles to "safeguard" America's ability to strike back with Minuteman missiles under the direction of the US Air Force if attacked by transpolar, intercontinental ballistic missiles. This differed from the Sentinel Program in which missile sites would additionally be placed around all major cities and would be used for both offensive and defensive attacks. Support for the Safeguard ABM Program reflected the national division of public sentiment over ABM defense. In August 1969, it was necessary for Vice-president Spiro Agnew to cast a tie-breaking vote in the Senate to fund the Safeguard Program. Senator Henry Jackson of Oregon was an outspoken critic of the program and challenged Ambassador Gerard Smith who was chief US negotiator with the USSR, with the following question regarding the US missile defense strategy:

Richard Nixon

"Why did we propose such a low number (of interceptors) when we know or should know that it would be totally inadequate for the defense of Minuteman? You see, I would have argued for zero ABM, instead of an ineffective ABM."

How the Safeguard ABM System Worked

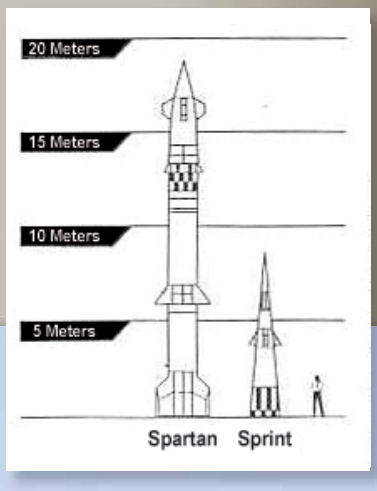
The Safeguard ABM System was originally designed to protect the Minuteman Missile from a pre-emptive strike across the North Pole. If an attack by an enemy ICBM was detected by the PAR, a radar that could scan for a threatening missile re-entering the earth's atmosphere [also known as re-entry vehicles (RVS)] within a 2,000 mile range, it would provide initial track data and alert the Safeguard firing units to prepare the Spartan at the missile site radar. The missile site radar was a high capacity, multi-phased array radar (powered by the most sophisticated computer system available at that time) used for defense missile tracking and guidance. Once the missile site radar was alerted, it then refined the tracking data to control the launch and flight path of the Spartan missile(s) to intercept the incoming intercontinental ballistic missile. The ICBM recognition to defense launch of the Spartan only took six seconds. This immediate response was critical for the process to successfully identify and intercept incoming missiles.



Safeguard phased - array radar

The Safeguard System did not work alone. It was commanded by the Ballistic Missile Defense Center (BMDC) located at the North American Air Defense (NORAD) Command headquarters within the Cheyenne Mountain Complex in Colorado. The purpose of the BMDC was to integrate the Safeguard System into NORAD by providing a command interface with other military systems such as the Ballistic Missile Early Warning System located in Alaska, Greenland and Great Britain as a means of disseminating command directives and controls to the Safeguard site.

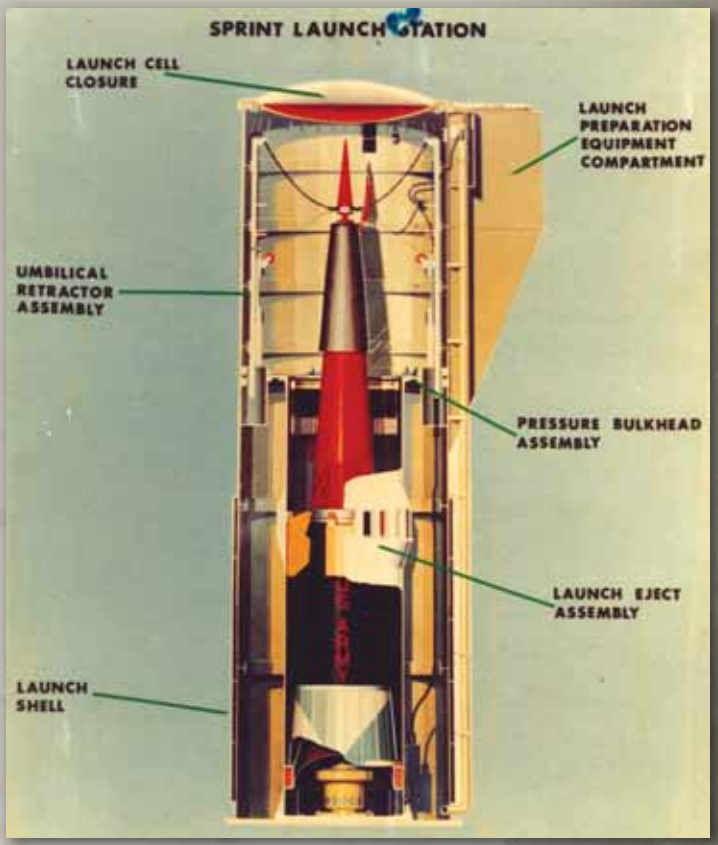
The Safeguard Program also accommodated for the possibility of an ICBM that accidentally re-entered into the atmosphere. As part of the program, both short-range Sprint missiles along with the long - range Spartan missiles were strategically placed to work in tandem at the Safeguard Missile site. If re-entry by the ICBM were to occur and it was too late to defend with the long-range missile, the shorter range Sprint missiles would be used for interception of the incoming threat.



"The Sprint Missile" was an in the atmosphere interceptor that, at that time, was the fastest thing ever built by man. The Spartan was the ICBM interceptor that we derived from the Nike missile program." Chuck Angelo – US Army staff sergeant and missile maintenance technician and Safeguard training class member.

The precise effects of the detonation of an intercontinental ballistic missile over North America were never fully disclosed nor even determined, the possible effects of such an event were described as “a flash” and “a blast of radioactivity.”

**To date, speeds of the Sprint Missile are still considered classified information and were unavailable at the time of publication.*



Sprint launch station diagram

THE OOZELFINCH

The order of the Oozelfinch was a distinguished award given to Nike Missilemen who demonstrated special and unique qualities.

You say Sentinel, I say Safeguard

On August 5, 1970, shortly after Nixon suspended the Sentinel Program, the Sentinel Central Training Facility plans were halted and redesignated as the Safeguard Central Training Facility (SCTF). As part of the US Army Air Defense School (USAADS) at Fort Bliss, the SCTF's mission was to educate select military personnel on the operation and application of the Safeguard ABM system.

The newly named ABM program was divided into three key departments:

1. Tactical equipment – assembling and maintaining active and test missiles

2. Tactical support – operating and controlling the missiles

3. Combined subjects – electronics, communications and other associated subjects

All military occupation specialties (MOS) within the Safeguard Program would be categorized within one of these three groups provided at the SCTF training facility.

There was no formal application process to be accepted into the ballistic missile defense (BMD) training at the SCTF in Fort Bliss. However there were several prerequisite qualifications that trainees must meet, including proven skills in air defense artillery operations and intelligence, specialization in one of six missile-related jobs, including missile crewman, missile site radar fire crewman, Safeguard electro–mechanical repairman, missile site radar crew chief, perimeter acquisition radar crew chief and digital online maintenance specialist. Other prequalifications included understanding fundamental communication procedures within the tactical elements of the BMD system, the ability to use drafting equipment and could work with minimal supervision.

Chuck Angelo, a staff sergeant and missile maintenance technician in the inaugural Safeguard training class reflected on his experience:

"Everyone selected by Department of the Army Air Defense branch was a veteran of training at Fort Bliss, on either the Nike Hercules or Hawk Missile systems. There was no application process to get into Safeguard [ABM Program]. Everyone was selected based on records. MOS test scores, availability and performance appraisals all weighed in selection. It is safe to say that the Army picked the best Air Defense soldiers it had available to staff the Safeguard site."

In March 1972, the US AADS at Fort Bliss announced the establishment of "extensive new training facilities that will accommodate the resident training program for Safeguard peculiar skills". Peculiar skills were the specific skills needed to deploy the Safeguard Missile Program. The training site included both new construction and renovation of existing Fort Bliss buildings.

Understanding Training Needs

For the Safeguard training program to effectively succeed, the training program for the Safeguard Ballistic Missile Defense (SBMD) system had to be formulated to support the needs of the program. To accomplish this, there were three main areas of Safeguard training focus the US Army had to implement.

Training program for the SBMD system

First was the need for US Army personnel to understand the major system components of the Safeguard Missile System. This meant understanding the two types of PAR technology, the digital data processing system, the power generation process, all project-related environmental equipment and the two interceptor missiles, Sprint and Spartan, and all other ground support-related equipment.

Second, US Army personnel needed to understand the man-machine interface in the command and control of the SBMD system. This included training personnel on handling and maintenance of the weapon system in response to potential or actual threat and monitoring all missile target direction, identification, and engagement activities. It also required the understanding and support of three different types of consoles and its logic support equipment, a wall status panel and its internal wiring that provided operate/non-operate information on the major elements of the system and the communication system that communicated between the two.

Third, a clear understanding of how to arm, maintain, and deploy the Sprint and Spartan missiles was an obvious critical need of the program. For both the Spartan and Sprint missiles, trainees learned how the missile worked as well as how to operate the underground operation station, how to prepare launch equipment, handling the test equipment as well as three special purpose vehicles used specifically to arm the warheads. Trainees also had to learn how to conduct routine maintenance on the missiles, including missile preparation and installation and periodic testing on the launch station. Corrective maintenance training was also conducted

and consisted of more internal maintenanceofthelaunch station cabling and maintenance of the system in response to an alarm.

The training was not always easy, and soldier trainees faced challenges everyday. Safeguard soldier trainee Chuck Angelo reflected specifically on the training that went on in the launch silo stating, "The training included the procedure of entering and exiting the silo. The process of setting the missile transport truck and the silo maintenance trucks up at the site consumed a lot of the training. When entering a silo you had to open the facility to enter the equipment room portion of the silo first, and then you opened the silo entry enough to insert an air monitor to check for a whole list of toxic gases before entering the actual silo. The missiles were armed with nuclear warheads, so a very strict 'no lone rule' was followed. Two personnel had to be together at all times. The whole personnel reliability program and security clearance procedure were very strict. Transporting the warhead from the warhead prep facility to the silo was a very complex job. The convoy was guarded on the ground and by a helicopter in the air. If any accident had happened we trained on a 'Broken Arrow' scenario to secure the warhead and protect it from any further compromise. Later as we began to install missiles at the remote site launch facility a Chinook helicopter was used to move the warhead."

Safeguard Central Training Facility - Fort Bliss

"Bottom of the Silo Society"

The whole missile was painted with an epoxy like coating that ablated from the heat as the missile flew. That was important to us because if you entered the deep silo and somehow dropped anything when the missile was installed you had to climb down the ladder on the inside of the silo and inspect the missile for any sign of chipping or scratches that could burn through during flight. Needless to say it was a big deal if you were unfortunate enough to drop something in the silo.

We had a "bottom of the silo society" to remind everyone of the unfortunate guys that did drop something. One way of trying to keep from losing anything was to tie it to your hand with a string lanyard before taking it into the silo. For big items like tools, wrenches and what not it worked. I remember once when we were placing the work platform grating around the missile in the silo that one of the guys managed to get his belt buckle caught in the grate. When he pushed it out to place it, it came lose from the black web belt that was part of the Army uniform back then, and fell all the way to the bottom of the silo, banging along the missile as it went.

Welcome to the "Bottom of the silo society."
-Chuck Angelo

Central Training Facility Construction

In November 1967, the Biggs Army Air Field, at a site located in the area of the old Biggs Air Force Base trailer park, was chosen for use as the Sentinel Central Training Facility- soon-to-be-Safeguard Central Training Facility (SCTF).

Thirteen new buildings and an existing warehouse would become the training facility. Construction was to be based on a 12-site tactical deployment of the ABM system and the designs were prepared by the US Army Corps of Engineers (USACE), Huntsville, Alabama Division. The thirteenth building with more than 16,000 square feet of floor space would be built on Fort Bliss property.

Credit: Ron Plante

Launch training area (Spartan and Sprint)

As the cost for developing the training facilities continued to climb, in 1970 the original plans for 13 new buildings were reconsidered. Fort Bliss was requested to determine what facilities could be made available from existing Fort Bliss and Biggs resources instead of new construction.

In response to this request, in October 1970 the construction of four new buildings were replaced with the following Fort Bliss buildings:

- Building 503* - administration
- Building 21* – SCTF headquarters
- Buildings 1089* and 1090* - allied trades and welding

In addition, Building 1094 was modified for Missile Equipment Training. The new buildings that were constructed, included facilities for academics, classroom/instructors, multiple labs for electrical systems, power generation, essential mechanics, heavy duty diesel, environment systems, basic electronics and PAR and MSR, and buildings for technical maintenance and repair, a warehouse, security and sentry houses. Also included on the training campus was a five-silo, mock launch station area for Sprint and Spartan missile subsystems.

A missile training facility was not included since it was determined that training could be accomplished elsewhere on site. Because of the highly classified nature of the Safeguard Program, special construction requirements were required for any new structures built on site. These included sound-proof classrooms with no windows and a combination lock for entry. In addition, the air ducts had sound and security baffling and there was special treatment of the attics to insure soundproofing. Special care was also taken to assure that there were no back to back outlets which would permit the installation of listening devices.

The design criteria for the SCTF prepared by the USACE Division, Huntsville, Alabama stated that "All training facilities for the Safeguard System must provide a pleasant atmosphere and one which will maintain high morale in the assigned personnel.

The new construction was planned to be semi-permanent, light, non-combustible construction of modular design. Development of the modules will consider the possible future expansion of each building to the extent practicable.

Notice to proceed with the construction was given October, 1971. All the building construction, both new and renovated, was near completion when

Credit: Ron Plante

Sprint silo (foreground) and Spartan silo (background) at the Safeguard Central Training Facility. Part of the five silo mock launch station

announcement of the disestablishment of the SCTF occurred in January 1973.

During the planning and construction phases between 1969 and 1972, more than $3.5 million was spent to construct seven new buildings at Fort Bliss for the SCTF.

Building 1094 - Safeguard Central Training Facility

Life at Fort Bliss

As stressful and intense as the Safeguard Ballistic Missile Defense (SBMD) program could be, life at Fort Bliss was similar to most bases at that time. Most "work days" consisted of eight hours of training for five days a week. However, if the threat of attack were to increase, soldiers had to be ready to respond which would result in longer work hours.

Fort Bliss, Texas

During "downtime," soldiers enjoyed a movie theatre, bowling alley, and other recreational amenities available at Fort Bliss. Soldiers could also apply for a pass to go off post on the weekends to take in the offerings of downtown El Paso, including the Plaza Theatre, restaurants, area hunting and fishing, and other activities. Some ventured south to Juarez, Mexico to soak up some of the local flavor.

Chuck Angelo remembered, "Very few of the soldiers involved were single. Most of us had families and young children. Our off times were spent mainly with family. Many of us enjoyed hunting and fishing. At Fort Bliss, the hunting on McGregor range and local area was good. Rabbits and in season deer was good hunting. The younger guys enjoyed the clubs around Fort Bliss and in Juarez, Mexico."

School of Hard Knocks

The management and operations of the SCTF was unique to the standard protocol of US Army training facilities. Although it was part of the USAADS, three commands known as the Safeguard Training Committee (STC) managed the program rather than the traditional procedures of oversight by the USAADS commandant. The committee was chaired by the general officer from the Continental Army Command (CONARC) and was divided into three subcommittees for the purpose of focusing on specific disciplines for training devices, documentation, on-site training and training aids. The committee also included local electric company Western Electric as a non-voting member. This structure proved very limiting as it precluded the commandant of USAADS from exercising his authority as primary advisor to CONARC.

US Army Air Defense School at Fort Bliss
Hinman Hall

This structure proved to be costly to the program in many ways. There was more than $150 million spent to support the training program. One of the main drivers to this excessive spending was the large number of courses in the program - there were 99 courses in all lasting anywhere from two weeks to one year.

In order to conduct much of this training, hands-on learning was a must. Trainees needed access to real tactical equipment like radars and data processors prior to the Safeguard Missile site being activated. However, because of the short (54 month) activation schedule, weapons contractors were still designing and manufacturing the system equipment at the same time student and instructor training was supposed to be taking place. As a result, tactical equipment could not be delivered in time for student or instructor training and design and procurement of equipment could not meet the schedule for activation. The situation became so dire that SCTF even risked defining equipment for training before the design of the equipment was completed or even prior to the development of the concepts!

Safeguard Training Program radar

According to Mr. David Eller, Training Specialist, Tactical Equipment Department of the SCTF and author of the History of SCTF written immediately following the end of the Safeguard Training Program: "If this writer were to choose the major lesson learned, it would be that the Army should maintain control of the development of weapon systems, not the contractor, and that total control of the training program remain the responsibility of the Commandant, USAADS, Fort Bliss."

Regardless of the outcome of the Salt I negotiations, it became obvious that the SCTF assisted by the rest of the Safeguard training community was rapidly costing themselves out of business with highly expensive training requirements. In the end $150 million dollars was spent to support the training program and the US Army learned the hard way that it and not the weapons contractor should maintain control of the development of the weapon systems.

$150 million in 1975 is the equivalent of approximately $600 million in 2007.

"All the training was done in the ten hundred [building] area and done by Western Electric and McDonnell Douglas. They gave instructions for 138 hours on each system and they taught from tip to tail, and that included the basic design of the framework, the blade line, materials that went onto the missile, they taught guidance, hydraulics, everything in 30 days … The school was just to get you oriented with the system and familiarized [with the system]."

First sergeant Donsel Champ on the Safeguard Training processes

First sergeant Donsel Champ working at the Safeguard Central Training Facility at Fort Bliss

The Great Thaw

In 1969, spurred by the strengthening relationship between China and the US, Brezhnev moved to reopen negotiations with the US regarding strategic arms limitations. After nearly two and a half years of turbulent negotiations, on May 26, 1972 at the Moscow Summit, the two clashing titans found common ground and signed the treaty that would mark the beginning of the de-escalation of a half-decade long nuclear arms race.

US President Richard Nixon and Soviet Leader Leonid Brezhnev at Moscow Summit May 26, 1972

Signed by US President Richard Nixon and USSR Leader Leonid Brezhnev, the Strategic Arms Limitation I ABM Treaty, also known as the SALT I Treaty, was an agreement focused on limiting strategic arms as well as relieving tension to begin strengthening the relationships between the two countries.

The US Government reacted by commanding disestablishment of the Safeguard Training Program which begun in February 1973 although the Safeguard Missile

The Stanley R. Mickelsen Safeguard Site in Nekoma, ND

Maintenance Technician / Specialist course and staff officers' course lasted until December 1975. A total of 133 students from 13 classes graduated and the SCTF buildings were converted to new uses by USAADS.

Under the treaty, the US was permitted only two 100 ABM sites and prohibited nationwide missile defense. As a result, only one ABM site, the Stanley R. Mickelsen Safeguard Site in Nekoma, North Dakota was completed. It became fully operational on October 1, 1975 with 70 Sprint and 30 Spartan missiles. Graduates of the Safeguard Training Program were relocated from the Fort Bliss training facility to operate this site.

On October 2, 1975, US Congress deactivated the Mickelsen Site and ended the Safeguard program and need for training stating that the system was too costly and ineffective against new USSR weapons. The Safeguard Site was fully operational for less than 24 hours.

SALT I TREATY FACTS:

Who: *US and USSR*
What: *Landmark treaty regulating the nuclear arms race was signed*
When: *May 26, 1972*
Where: *Moscow Summit*
Why: *To limit strategic arms development in the US and USSR*

Significance of Safeguard

At that time, the Stanley R. Mickelsen Safeguard Missile Site was the only intercontinental ABM site ever constructed and operated in the US. The experience gained in developing and deploying Safeguard was invaluable to the development of major technological breakthroughs in software development, components and systems integration.

Credit: Ron Plante

Fort Bliss Facility

The strategy behind the ABM programs and associated training programs were also important factors in the decline and eventual end of the Cold War. Without the contributions of the Fort Bliss facility and all of the soldiers and their families that were part of the program, the climate between the US and other world powers could have had a very different story in history.

In the December 14, 1975 issue of the "New York Times", architectural journalist Ada Louise Huxtable summarized her thoughts of the impact of the Safeguard facility and initiative:

"All of that engineering elegance and efficiency born of rational, industrialized solutions that was (sic) to make a better world -- led by the architect -- did not bring a new dawn. It brought an era of more gigantic problems in the nature of life and survival than history has ever known."

Although The Cold War is history, the legacy of rocketry and US defense still continues through the continual development of the US nuclear defense program. Even with the increase in the number of countries with nuclear power increased to eight, the US continues to review its nuclear strategy and reduce the number of active nuclear warheads it has in operation.

Building 1094 - Safeguard Central Training Facility

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