THE WHITE SANDS
MISSILE RANGER

WHITE SANDS MISSILE RANGE, N.M., JULY 9, 1970–PAGE 1-C

Since 1945

10 commanders have directed post in its 25-year history

COL HAROLD R. TURNER
WSMR 1945 - 1947

BG PHILIP G. BLACKMORE
WSMR 1947 - 1950

BG GEORGE G. EDDY (Deceased)
WSMR 1950 - 1954

MG WM. L. BELL (Deceased)
WSMR 1954 - 1956

MG WALDO E. LAIDLAW
WSMR 1956 - 1960

MG JOHN G. SHINKLE
WSMR 1960 - 1962

MG J. FREDERICK THORLIN
WSMR 1962 - 1965

MG JOHN M. CONE (Deceased)
WSMR 1965 - 1966

MG HORACE G. DAVISSON
WSMR 1966 - 1970

MG EDWARD H. deSAUSSURE
WSMR Commanding

By
RUTH A. MABE

Major General Edward H. deSaussure is the 10th commanding general of White Sands Missile Range.

Coming to the national missile range April 8, 1970, Maj. Gen. deSaussure succeeded Major General H. G. Davisson, who retired from active Army duty March 31.

Preceeding Maj. Gen. deSaussure were nine men who had a hand in molding White Sands Missile Range into a national range during its 25 years' existence. Each of the men, as range commander, contributed to WSMR's development and posture and to the role it plays in national defense.

Back in June 1945, Army Lieutenant Colonel Harold R. Turner was among a hand-picked group of officers and civilians representing the War Department and the Corps of Engineer who came to the Tularosa Basin in southcentral New Mexico to set up an Army rocket testing program.

Taking the name from nearby White Sands National Monument, White Sands Proving Ground was established July 9, 1945, with Lt. Col. Turner as the commanding officer. Shortly afterwards he was promoted to colonel.

With his foot, Colonel Turner marked a particular spot on the ground and declared: "Here we will build headquarters of White Sands Proving Ground."

Headquarters building of the national missile range today stands at the approximate spot marked by Col. Turner 25 years ago.

When activated in 1945, White Sands Proving Ground was meant to serve only as a temporary testing facility. However, its amazing growth and importance was unbelievable. Three years later it was reclassified as a Class II Ordnance Installation and less than a decade later it was designated a national missile range.

Col. Turner commanded the nation's only missile proving ground until Aug. 3, 1947. He was succeeded by Brigadier General Philip G. Blackmore.

General Blackmore's tour was a period of construction and innovations. Missiles and materiels were brought in, buildings constructed, equipment and instruments developed and improvised and employes hired. Government buses were authorized to transport personnel, both military and civilians, from El Paso, Las Cruces and Alamogordo.

On Sept. 8, 1948, General Orders 59 upgraded WSPG to a Class II Ordnance Installation under command of the Army's Chief of Ordnance.

On Jan. 31, 1950, following a three-week leave, Brig. Gen. Blackmore retired from more than 38 years of military duty. He was succeeded by his deputy, Colonel George G. Eddy.

As the range's commanding officer, Col. Eddy carried on the construction program initiated by his predecessors, and in July 1951 was promoted to the rank of brigadier general.

During BG Eddy's command, personnel strength increased from around 1,000 to more than 7,500. Missile firings increased from 32 the first full year of operation of the range (1946), and 63 in 1950, to a total of 696 in 1954.

Paramount among the missile firings was the German V-2 rocket program in which missiles were re-assembled from parts brought to New Mexico from Europe at the end of World War II. Sixty-seven of the rockets were assembled and 65 fired on the White Sands range. The other two were launched from ships at sea. From the experimental V-2 program evolved today's modern supersonic missiles, and spacecraft that took man to the moon and back.

On June 14, 1954, MG Eddy retired from the Army. After living in California for a short while, he moved to Carlsbad, N. M., where he died Jan. 5, 1969.

Major General William L. Bell Jr., succeeded General Eddy as commander of WSMR and served from Aug. 1, 1954, until ordered to a new assignment Jan. 31, 1956. He died shortly after leaving the range, at his new duty station.

Major General Waldo E. Laidlaw was WSMR's fifth commander, assuming duties Feb. 1, 1956, upon the departure of Maj. Gen. Bell. He was to serve more than four years.

During this period, the name of the range was officially changed to White Sands Missile Range; firings increased to more than 2,000 a year; construction reached a peak and began to level off, personnel strength of the WSMR complex, which included the Air Force Missile Development Center at Holloman Air Force Base, had climbed to more than 16,000, and the payroll passed the $74 million mark. The Air Force Missile Development Center was merged with WSMR with its commander designated as a deputy to the WSMR commanding general.

Maj. Gen. Laidlaw retired from military duty in June 1960.

Major General John G. Shinkle assumed command of WSMR on July 1, 1960, succeeding Maj. Gen. Laidlaw. His command ended July 7, 1962, when he was ordered to an overseas assignment.

During Maj. Gen. Shinkle's command, groundwork was laid for WSMR's off-range firing programs; the range instrumentation modernization program got underway in efforts directed toward meeting increasingly complex test requirements for the various range users.

On July 8, 1962, Major General J. Frederick Thorlin assumed command of the national missile range. During his tour as range commander, the off-range firing program hit full-swing with Sergeant missiles launched from Datil and Ft. Wingate, N.M., Pershing missiles from Blanding, Utah, and the Air Force Athena from Green River, Utah. As many as 150 programs were active on the range at one time. The WSMR Complex personnel strength hit more than 18,000, the payroll more than $100 million, and plant investment totaled more than $784 million.

Major General John M. Cone succeeded Maj. Gen. Thorlin upon the latter's retirement Aug. 1, 1965.

Maj. Gen. Cone's untimely death from an apparent heart attack ended his command March 30, 1966. His deputy, Colonel Karl F. Eklund, served as acting range commander until the assignment on Oct. 12, 1966, of Major General H. G. Davisson.

During almost four years under the command of Maj. Gen. Davisson, work at WSMR continued its fast pace while personnel strength began a

(Continued on Page 8-C)

Unique Missile Park 'sentinels' on guard at Post Headquarters

Like a sentinel standing guard over Headquarters of White Sands Missile Range is a gaggle of missiles that formed the nation's first and largest outdoor "missile museum."

Known as Missile Park, the collection of Army, Navy and Air Force weapons is displayed in typical firing attitude and is the focal point of interest for visitors to the range. Each year, hundreds of military and civilian dignitaries, civic and scientific groups visit the garden. Almost any hour of a day, a sprinkling of people can be seen wandering through the pillaring weapons, examining airframes and reading statistics posted beside each display. .

The 35 different rockets and missiles exhibited in the unique museum represent extensive test programs conducted at the desert installation since its establishment 25 years ago. Of the group, 20 systems are operational and still tested at WSMR. The others, including the German made V-2 rocket, are obsolete and important only for their historical value.

Holding center stage in Missile Park is a German V-2, one assembled from the carloads of parts brought to the New Mexico missile range from Europe at the end of World War II. Known as the "grandfather' of American missilery, the V-2 was made by the Germans from findings of an American, Dr. Robert H. Goddard, who did pioneer testing during the early 1930s near Roswell, N. M.

The V-2 experimental program during early years of WSMR provided the basic research for America's array of modern missiles and for placing man on the moon less than 25 years later.

Missile Park dates back to May 1955. As a special feature for Armed Forces Day celebration, Post Engineer mounted three missiles in cradles and put them on display in the triangular area directly in front of Headquarters Building. Silhouetted against the peaks of the Organ Mountain and the desert sky, the missiles – the giant V-2, the Loon, and Nike I– fascinated the thousands of visitors. All day, men, women and children crowded around

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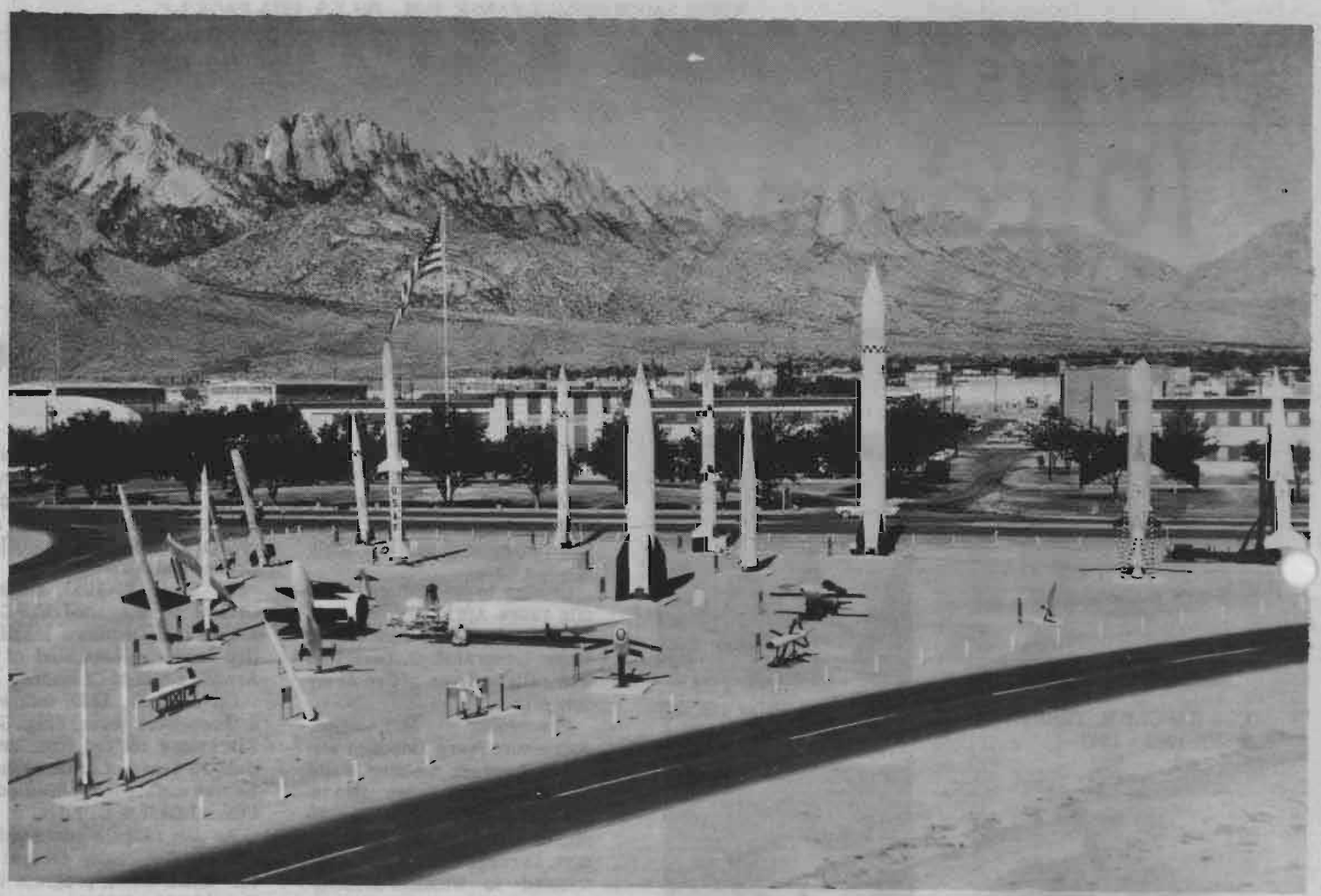


MISSILE PARK TODAY – The focal point of interest for many visitors to White Sands Missile Range is Missile Park, the outside missile-museum which was a spin-off of the 1955 Armed Forces Day celebration. Among missiles installed in the park across from Headquarters Building are (back, counterclockwise) the Nike Hercules, Army anti-aircraft system; the Air Force Mace, surface-to-surface; Army Redstone, surface-to-surface; Army Pershing, long-range ballistic missile; Nike Zeus, Army anti-missile system; German V-2; Army Corporal, surface-to-surface; Air Force Athena, atmospheric re-entry research vehicle; Army Sergeant, ballistic missile; Navy Talos, long-range ship-to-air or ship-to-shore system, and Navy Terrier, two-stage ship-to-air. (U. S. Army Photo)

Computing and Software began range data operation in 1953

by
T. F. Mackin
Computing and Software, Inc.

White Sands Missile Range will be celebrating its 25th anniversary in July. For 17 of those years Computing and Software, Inc. has operated the range Data Reduction Facility at Holloman AFB.

This continuous service was the result of an Air Force contract awarded to Computing and Software, Inc., then Telecomputing Services, Inc., in 1953.

In 1955 under the Integrated Range Mission, TSI was awarded a United States Army contract for a continuation of its services begun under the original Air Force contract. Numerous contracts have been awarded since that time for performance of the same services.

The company has grown considerably since the original contract in 1953. Starting from the small group at White Sands and another in California, Computing and Software has grown into a recognized industry leader in the mangement and operation of computing centers and their applications in the field of specialized information exchanges.

In 1965 Telecomputing Services, Inc., became a wholly owned subsidiary of Whittaker Corporation. Two years later the company name was changed to Computing and Software, Inc., and became an independent publicly owned company with stock being sold on the American Stock Exchange.

Since the inception of Computing and Software's contract back in 1953, the data processing field has changed considerably. In 1953 data processing was performed on the CPC 650 card handling computers.

Later IBM brought forth the 704, a vacuum tube first-generation computer. Until 1963 Computing and Software used the 704, located in Building 841A at HAFB, in support of range tests conducted at White Sands Missile Range.

In 1963 the range acquired an IBM 7094, a second-generation computer, for which all of the processing capabilities of the 704 were converted. In 1964 the IBM 7094 was supplemented by the IBM Direct Couple System (DCS). Since that time range operations and data reduction have used the DCS for their computational requirements.

Computing and Software, Inc., through intensive analysis, careful design, and imaginative programming, has developed a highly mechanized data reduction system around each of these computer systems in an effort to keep abreast of the state-of-the-art in the rapidly changing computer industry.

Even today the growth of the range in the area of computation and data processing is continuing. Currently White Sands Missile Range is beginning installation and operation of five UNIVAC 1108 computers configured into three systems. These units are third-generation computers and have the capability of handling a tremendous amount of processing in both a multi-processing and multi-programming mode.

Considerable effort is being expended by the United States Army at White Sands Missile Range to design, develop and implement the real-time data processing system as well as post-flight processing around the newly installed UNIVAC 1108 computer.

Many of these developments have been contributed to by Computing and Software as a part of the Analysis and Computation Directorate in the overall development of the United States Army data reduction capabilities at White Sands Missile Range.

Did you know?

The capitol building at Providence, Rhode Island has the second largest dome in the United States.

Arrived in 1946

Navy, Marine Corps prominent in history of Missile Range

(Editor's note: This is the first in a series of articles detailing the history of the U.S. Naval Ordnance Missile Test Facility at White Sands Missile Range. The author, employe of a television station in Wichita, Kan., is a Naval Reservist and has served on limited tours of active duty at WSMR.)

* * *

by
James Glynn
Chief Journalist, USNR

On June 13, 1946, a silver C-47 transport plane sparkled in the afternoon sunlight as it cruised over the jagged San Andres Mountains. This rugged area, within a 432-square-mile patch of New Mexico desert, only 11 months before had witnessed the destructive power of the world's first atomic explosion.

(Jornada del Muerto, or Journey of Death, a 29-mile-wide and 90-mile-long dog-leg strip of desert due west of Carrizozo and the Sierra Oscura Mountains, had been selected by Manhattan Project scientists as the logical site for the detonation of the first atomic bomb.)

Aboard the plane were nine Marines, including Corporal Russell L. Fuqua, Major Norman "Po" Pozinsky and Second Lieutenant Pete Petrosky, and two sailors – and a German V-2 rocket warhead.

(Corporal Fuqua was an instrumentation expert on the 4.5mm barrage rocket, 5.5mm chemical warfare rocket and 4.5mm aviation rocket. Major Pozinsky was from the Naval Research Laboratory in Washington.)

Minutes later the plane banked slowly and descended over the purple-hued Organ Mountains that formed the western boundary of the U.S. Army's new White Sands Proving Ground. Corporal Fuqua pressed closer to the window as he viewed the small, isolated Army camp below. Corporal Fuqua was a rocket expert attached to the Marine Rocket Detachment at Camp Pendleton, Calif., when he was summoned to the Naval Research Laboratory in Washington for this assignment. Major Pozinsky was a Marine liaison officer. They knew the metallic cargo aboard and the remote desert station they were approaching were to herald a new age in modern science.

White Sands Proving Ground, established in 1945 and situated in a parched and obscure part of the New Mexico desert between Alamogordo and Las Cruces, was in its infancy. Here the U.S. Army was to test captured German V-2 rockets.

In the latter part of April 1945, the famed German A-4 (V-2) Division of the Peenemuende Rocket Base surrendered to the Allies. Top German scientists, realizing that capture was imminent, had moved westward to escape the Russians and surrender to the Americans in Bavaria. At the time of the surrender, approximately 400 missile experts were sent to Landshut, Germany, for careful screening. Of those screened, less than 100 were chosen to be sent to the United States as part of the program designated "Operation Paperclip."

The scientists arrived in the United States aboard the transport Argentina on Nov. 17, 1945, and were moved to Ft. Strong, near Boston. In January 1946, they were transferred to Ft. Bliss, Texas. There the group was divided and approximately 20 were assigned to White Sands Proving Ground.

In Germany, damaged rockets and components were gathered from fields, ditches, canals and railway yards. Subassemblies – in various stages of manufacture – were found in abandoned Nazi factories. Most of the rockets had been stripped of vital parts and deliberately damaged by fire or gunfire, and all were badly corroded by exposure to the weather.

Eight rockets were rebuilt, tested and found capable of being fired. Three were successfully erected and launched over the Baltic Sea before the stockpile was divided for use by Britain and America. The parts allotted to the American scientists were crated and shipped to White Sands.

A few weeks after Lieutenant Colonel (later Colonel) Harold R. Turner arrived in 1945 to assume command of the Proving Ground, he was notified that U.S. forces in Europe had captured some German V-2 rocket bases and that 300 carloads of missile parts had arrived in Las Cruces.

"It looked like a bunch of worthless junk," stated the amazed colonel later. "And we had no means of transportation. Practically every rail siding between El Paso and Socorro was filled with boxcars of missile parts."

With the assistance of General Electric – based at the desert site on a research project – Colonel Turner was able to hire truckers. "I thought I had employed every trucker in this part of the country," he recalled later.

Although the Army Ordnance Department had been assigned responsibility for testing and firing of the V-2, actual assembly of rocket components was completed by the General Electric Co. under a provision of the Hermes contract. German scientists, under the direction of Dr. Ernst Steinhoff, interpreted their personal notes and drawings and instructed General Electric engineers in assembly, testing and firing.

However, trouble arose in joining the captured parts and only two missiles could be assembled from original matched parts. Others were collected from sub-assemblies and from carloads of components. Twenty-five rockets were assembled in the first series.

By learning what the Germans had tried and abandoned in their research, the U. S. Army Ordnance Department was saved thousands of hours of trial-and-error. At the end of the six-month period, the German scientists were returned to Ft. Bliss for contract renewal and reassignment. A few of the original group – including Werner von Braun and Guenther Hintze – went back to White Sands. Now, Marine Corporal Fuqua and the small Navy-Marine contingent about to arrive at the proving ground were new additions to a world-wide cast of players featured in a mysterious drama the U.S. Government started in the desert.

With the German war machine crumbling rapidly throughout Europe, the United States turned toward the Land of the Rising Sun. In April 1945, military leaders in Washington advised President Harry S. Truman that defeating Japan would take another year and a half. In New Mexico, a cadre of desert scientists and Army personnel were based at the new $110,000 camp near Trinity Site working on the atomic "Fat Man" in the final phase of the Manhattan Project.

At the same time, hundreds of landing craft left the safety of the U. S. fleet lying off the coasts of Pacific islands and fanned out across the choppy waters of the western Pacific and East China Sea in a simultaneous assault on Okinawa – the last stronghold of the tottering empire of Japan. The capture of Okinawa was vital to the completion of a chain of island stepping-stones that stretched across the western edge of the Pacific.

From Okinawa, the United States planned to launch bombing missions into the bowels of the Japanese homeland. Aware of this, Japan resolved to defend Okinawa with every means possible. Soon, the U.S. Navy began to reel under the terrific impact of a mighty Japanese weapon introduced in the Second Battle of the Philippines – the dreaded Kamikaze.

These Nipponese suicide planes were committed to destroy the hundreds of U. S. Navy vessels that provided logistical and artillery support to the Allied forces. The majority of the Kamikaze planes directed against the fleet at Okinawa failed to reach their targets. Those that did, however, reaped a heavy toll of men and materiel. Cognizant of the tragic turn of circumstances, the U. S. Navy began a search for new defensive weapons that could effectively combat the threat of enemy air attacks.

In 1945, the Department of the Navy tapped shoulders within the Applied Physics Laboratory of Johns Hopkins University to commence work on the highly classified Bumblebee Project. Two thousand miles to the west, the V-2 made its debut in the American sky.

The scorching summer of 1945 was typical of New Mexico. Gusting hot winds sent tumbleweeds and dust devils bouncing crazily across the sea of sand dunes. The desert, a broad, pocked-marked expanse, dotted only by yucca and mesquite, was an eerie refuge for wild animals and city-bred scientists. Occasionally the clownish Roadrunner, official bird of New Mexico and called "paisano" by the Mexicans, scampered across the hidden encampment and darted between sharp, bristly Spanish bayonet cactus plants.

An admiral who had been sent to the proving ground by the Bureau of Naval Ordnance to study the Army's rocket tests was standing in wrinkled, sweat-stained khakis on the missile firing line. As he stood, shielding his eyes from the glaring sun, he turned to Lieutenant Colonel Turner. Wiping his brow, the admiral – visibly impressed with the Army's technique – thundered his approval and asked, "Colonel, could you use some Navy help on this project of yours?" The colonel viewed the admiral through dark sunglasses. "I sure could, sir," he replied.

Colonel Turner had approximately 25 officers and 200 enlisted men, plus the 1st Guided Missile Battalion of the 69th Coast Artillery (AA), under his command at the proving ground in 1945. Years later he reported: "Shortly after the admiral and I accepted the Navy invitation for additional men, 50 Navy men arrived for duty. This was the beginning of the inter-service use of this range."

On Oct. 30, 1945, the Chief of Ordnance, War Department, officially invited the Navy to participate in missile testing activities at White Sands. Taking advantage of the opportunity, the Navy promptly accepted and outlined certain policy-guiding principles believed to be essential in the newly created Army-Navy relationship. A high-level conference was held in Washington April 23, 1946, where representatives of the Navy and War Departments finalized operating agreements.

With interest reaching a high peak within the Navy Department and official Government circles for a Navy-sponsored high-altitude research program, 12 sites were considered for a Navy missile unit in the White Sands Proving Ground area. Of these, three were in Las Cruces and two in El Paso.

The decision was made, over the objection of Commander J. A. Coddington, CEC, to construct a missile station for the Navy within the new Army complex at White Sands Proving Ground. The Navy Department sent Commander Coddington to the desert installation to begin planning and negotiations that eventually led to the signing of a $1-million construction contract. Shortly thereafter, Commander Coddington was joined by five enlisted Marines.

Army Corps of Engineers authority M-2027 was issued and contract No. W29-005 Eng.

(Continued on Page 5-C)

Fool me again and it's my fault.

Navy, Marines

(Continued from Page 4-C)

425, totaling $964,978.23, was awarded Navy contractors for construction of the cantonment and technical areas for the U.S. Naval Ordnance Missile Test Unit.

The Navy contractors, under the direction of Commander Coddington and his civilian assistant, 62-year-old Sam Houston, constructed more than 70 quonset buildings from Jan. 9, 1946, to Jan. 7, 1947. Many of these buildings are still in use more than 23 years later.

The Army had already launched its missile and rocket testing programs at the new desert facility. The first missle tested, on Sept. 26, 1945, was a wartime "Tiny Tim" modified to simulate the WAC Corporal – a meteorological sounding rocket being developed to probe the upper atmosphere.

The first static-test firing of a V-2 was conducted by the Army and the German scientists on March 15, 1946. The first V-2 flight test was made April 16, 1946. The first public showing of a V-2 firing, later in 1946, almost ended in disaster. After the rocket was ignited, both tower and rocket tilted toward the spectators. When the rocket fired, it zoomed northwest over the heads of fleeting spectators. – Within seconds it was detonated in flight.

On June 13, 1946, the C-47 carrying Corporal Fuqua, Major Pozinsky, the Marine group and the V-2 warhead taxied to a stop on the dirt runway of Condron Army Auxiliary Air Field. The Marines jumped from the plane into the 100-degree heat of the airfield and ran to the shelter of the small operations building.

"Corporal," growled the major, kicking up a large cloud of dust with his boot, "it looks like we've just come from heaven to hell."

Corporal Fuqua hunched his shoulders, laughed, and then telephoned to the cantonment area for a jeep and a truck.

The Navy area had begun to take shape. Enclosed within a chain-link fence and gate on the western edge of the cantonment area, the Navy compound was completely isolated from the Army post. Neat rows of small 20-foot by 40-foot quonset huts were erected for the enlisted men. The officers' mess hall, a long, skinny quonset, was situated to the north. Across from the enlisted quarters, on an east lot, larger 40-foot by 100-foot quonsets were built to house the Enlisted Men's Club, a six-lane bowling alley and a Chief Petty Officers' Club.

Commander Coddington, officially the first Navy officer in charge of construction at White Sands, maintained his office in a large hut south of the enlisted area – facing the Navy garage, motor pool, public works shop and warehouse area. During this period, Commander Coddington and Major Pozinsky resided with their wives in rented homes in Las Cruces. Prior to the building of the Marine quonset area, Corporal Fuqua, after spending his first week at White Sands in a pre-fabricated Army camp, commuted to the base from Alamogordo Army Air Field (now Holloman AFB).

On June 14, 1946 – the day after the C-47 landed – the Naval Unit, under the command of 31-year-old Commander Robert McLaughlin, was officially established as the Naval Ordnance Missile Test Unit by the Secretary of the Navy. Early letterheads gave the unit's post office addresses as Las Cruces and Oro Grande, N. M.

Management control of the facility was exercised by the Chief of the Bureau of Ordnance. Military command and coordination was vested with the Commandant, Eighth Naval District. Technical control of the Naval Unit was the responsibility of cognizant agencies within the Navy Department.

In August 1946, three Navy and four Army enlisted men, under the command of First Lieutenant Richard C. Shangran, Army Air Force, comprised the initial Air Section for White Sands. The proving ground received its first aircraft, a T-11 type, loaned by the Air Materiel Command. Later, the C-47 cargo plane from the Naval Research Laboratory was assigned to White Sands.

The Naval Unit grew at a rapid pace and the usual interorganizational changes were made early. Commander Coddington moved his office across the street into a quonset flanked by the Public Works shop and the garage. Commander McLaughlin moved his headquarters into the hut formerly occupied by Commander Coddington.

Lieutenant F. G. Schettino was named personnel officer, and 27-year-old Lieutenant Commander George Haverson became the operations officer. Lieutenant Merle H. Sappington was selected as assistant operations officer in 1947. Major Pozinsky served as Marine liaison officer, directly responsible to the Commandant of the Marine Corps.

Life at the Naval Unit in 1947 was not comparable to serene duty in Hawaii and certainly lacked the glamour of sea duty in the Mediterranean. Travel on the entire 12-square-block post was accomplished afoot or in vehicles stirring up dust clouds on the narrow unpaved roads. A solitary main dirt road led northward from the White Sands gate to U. S. Highway 70. No roads were constructed for southbound travel from the base to El Paso. Most officers living off base resided in the historic town of Las Cruces. But the leathery construction officer, Commander Coddington, was an individualist. He and his wife moved to El Paso in 1947.

Not to be outdone by the historical Spanish Conquistadores, Coddington turned his cunning engineering talent and experience into a one-man construction project – to bulldoze a road south from the proving ground to El Paso. Early one morning, the indefatigueable commander climbed aboard a gray Navy pickup and, at flank speed, headed south across the desert.

But this initial attempt to trail-blaze the first modern road to El Paso ended with an abrupt stop and embarrassing failure. Twenty miles south of the compound, Coddington's truck came to a jarring stop in a sand dune. The more he tried to break free with engine power, the deeper the wheels buried themselves in the loose sand. Utterly disgusted in the face of defeat and with parched lips and matted hair, the Naval officer trekked on foot the 20 long miles back through the hot desert to the dubious sanctuary of the proving ground. Back in his office, he vocally rendered his distate for the desert and all that it stood for.

By the end of 1947, Navy buses operated on a White Sands to Las Cruces run. The Army scheduled a round trip route to El Paso, but – for an unexplained reason – did not permit Navy personnel to use the service.

Still smarting from his defeat as a one-man desert pathfinder, Commander Coddington decided that, come hell or high water, he was going to commute in Army buses. Intrigue was his answer. With characteristic cunning, he concocted a scheme. Each morning, dressed in his khaki uniform, he removed his brass insignia and added a civilian string bow tie and a large straw hat. Appearing as a civilian laborer, he boarded the Army bus. Arriving in his office, he removed hat and tie and reaffixed his collar devices.

On the return route in the evening at the end of the day's work, he reversed the procedure and took his place in line at the bus stop. The dauntless Navy commander continued this "cladestine' daily routine for several months.

(Next: Growth of a desert installation; "Guns," a Navy mascot; V-2 rocket firings.)

RE modernizes instruments, plans ahead for future needs

by
C. R. POISALL

"We must keep pace with the increasingly complex needs of range users, even as they reflect the rapid advancements being made in missile and aerospace technology."

The statement was they keynote at a White Sands Missile Range conference on range instrumentation.

"To avoid the possibility of becoming obsolete almost overnight," the speaker continued, "we must project developments as far into the future as possible–anticipating new range user requirements and being prepared to meet them."

Thus the speaker outlined the basic philosophy for a number of programs, including some already completed and others just being planned, referred to collectively as "range modernization."

Importance of such programs is apparent. White Sands Missile Range, the only one of the nation's five national ranges situated entirely on dry land, also is the busiest of the national ranges in terms of the number of test operations conducted.

Since 1958, more than 29,000 missile firings or related test flight operations have been conducted at WSMR. During a recent six-month period, 1,785 operations were completed. During fiscal year 1969, test operations totaled 4,543.

Totally involved with range modernization and related programs is National Range Engineering, smallest of the WSMR deputy organizations. This highly technical organization has the responsiblity for analyzing and determining instrumentation requirements, planning and designing new systems and related equipment, developing improvements for existing systems and assisting with procurement, installation and evaluation of instrument facilities.

National Range Engineering (NRE) also provides and operates the WSMR Technical Library, maintains the post's central files of drawings and specifications for use with procurement packages, and provides staff supervision to Equipment Management for instrumentation.

Deputy for National Range Engineering is Colonel Thomas C. Kearns, who also serves as Post Engineer. A native of Philadelphia, Pa., he is a graduate of Omaha, Neb., University. He has completed a number of service school courses, including the Command and General Staff College. Colonel Kearns came to WSMR in January of 1968 from a tour in Vietnam.

Technical Director of NRE is Nathan Wagner, native of Brooklyn, N. Y., and an electrical engineering graduate of Ohio State University. He came to WSMR in 1950. For more than 15 years he headed the Missile Flight Surveillance Office, becoming known as "Mr. Missile Flight Safety" at White Sands Missile Range. He left MFSO in June of 1966 to become technical director of NRE.

Various elements of NRE, including the main offices, occupy all of Building 1506. Other elements are in Building 1530. The Technical Library is in Building 1504, and one small NRE group is in Building 1545.

Strength of NRE is less than 300 including about 45 Army military personnel.

The NRE organization consists of three directorates, plus the Technical Library and the Administration Division. The directorate are Systems Development, Instrumentation Development and Plant Engineering.

The Systems Development Directorate is made up of the Systems Planning Division and the Systems Engineering Division. The three elements of Instrumentation Development Directorate are Data Systems Division, Optics Division and Electronic Tracking Division.

Plant Engineering Directorate is made up of the Systems Planning Division and the Systems Engineering Division. The three elements of Instrumentation Development Directorate are Data Systems Division, Optics Division and Electronic Tracking Division.

Plant Engineering Directorate has five elements. They are Support Services Office, Instrumentation Management and Documentation Division, Engineering Plans Division, Engineering Services Division and Installation Division.

Director of Systems Development is Vernon L. Miller of Las Cruces. Director of Instrumentation Development is Edward O. Noble, also of Las Cruces. Robert C. Barto, of El Paso, is director of Plant Engineering.

Chief of the Technical Library is Jack C. Ward of El Paso. Mrs. Frances F. Williams, Las Cruces, is chief of the NRE Administration Division.

In carrying out their missions, NRE personnel have been involved with such significant programs as TEAM-UP (Test Evaluation, Analysis and Management Uniformity Plan), ARTRAC (Advanced Range Tracking, Reporting and Control), and many others.

TEAM-UP is a program to modernize and standardize the management information and scientific and engineering data systems within the U. S. Army

(Continued on Page 7-C)

NATHAN WAGNER

RE modernizes

(Continued from Page 6-C)

Test and Evaluation Command. Part "A" of TEAM-UP involves business applications, for which an IBM Model 360/50 computer was installed in Building 300 (Range Control Center) last year.

Part "C" of TEAM-UP involves the scientific and engineering requirements that are unique to White Sands Missile Range. Installation of an advanced computing and processing system to meet the Part "C" requirements will be accomplished this year. An Army contract for this system, calling for expenditures of $16.7-million over a six-year period, was awarded to the UNIVAC Federal Systems Division of Sperry-Rand Corp., St. Paul, Minn., last year.

The system will consist of five UNIVAC Model 1108 computers, seven Model 418-11 computers, two input/output controllers (IOC's), and 118 terminal devices.

Range instrumentation will be configured to provide all of the range's batch processing workload, in half the time now required. It also will be capable of supporting range instrument on-line system, so that many of the range operations and processes will be automated to achieve more responsive and more accurate results.

Edward J. Fields of El Paso, an engineer with NRE's Systems Development Directorate, is serving an implementation officer for the TEAM-UP Part "C" project.

NRE is developing an advanced range operations management and data system. The task force is headed by James A. Wise, El Paso, of NRE's Plant Engineering Directorate.

Objectives are to optimize data handling techniques to improve handling, processing, display and control, and to increase total system reliability. The goal for this fiscal year is to complete the initial acquisition system to interface instrumentation to the UNIVAC (TEAM-UP Part "C") computer.

A number of modernization projects have been completed recently. In one of these, UHF telemetry receivers successfully tracked, from horizon to impact, multistage operating with UHF telemetry transmitting equipment. The tests were part of a successful effort to convert the VHF frequency band to the UHF L-band and S-band.

In another completed project, a highly accurate range and range rate trajectory measurement system was developed. Experimental equipment to demonstrate operation of the receiver, transponder and transmitter has been delivered. This system measures slant range with an accuracy of plus or minus two feet and range rate within plus or minus .02 of a foot per second.

NRE engineers redesigned the WSMR cinetheodolite system to improve its accuracy. For passive determination of high-altitude missile position with an accuracy of three to five feet, the cinetheodolite was redesigned to have a static angular accuracy of two to five arc-seconds and a dynamic accuracy of about three to six arc-seconds.

This unprecedented accuracy was achieved through use of a unique optical means of monitoring mechanical errors. Titling, bending or twisting of components of the instrument with respect to each other or to the earth is optically compensated for within the cinetheodolite. Recorded data then are largely free of the types of errors common with conventional data gathering instruments.

Through coordination with the Advanced Ballistic Missile Defense Agency (ABMDA), tracking experiments with the HAPDAR (Hardpoint Demonstration Array Radar) were initiated by NRE. A contract modification was signed to provide programs for reformating tracking data and other permission test data.

Aircraft and missile tracking tests with the HAPDAR are continuing. Ultimately, this development work is expected to result in a capability for simultaneous tracking of multiple targets.

Completed actions in many other phases of the range modernization program have been reported by NRE officials. During a recent six-month period, specifications were prepared and contracts were awarded for 12 different items of new equipment. As the result of contracts previously negotiated, 10 other items of new equipment were accepted and placed in operation.

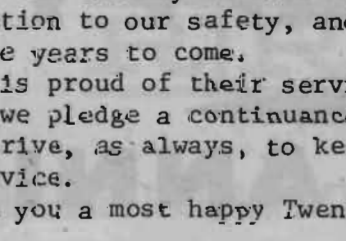
New contracts involved such items as a parametric amplifier system to increase tracking capability of the XN-3 radar; antennas, preamplifiers and multicouplers for the telemetry acquisition system (TAS); microwave terminal and multiplex equipment for three mobile telemetry relay systems; modifications to the medium focal length mobile tracking telescope; a recovery unit to salvage metallic silver deposited in film processing machines, and replacement parts for many of the range instrument systems.

Equipment delivered and placed in operation involved new L-band and S-band transportable TAS's, three TPS-48 radars for use as sensors in airspace surveillance, a ground station for processing FM telemetry data, modifications to the telemetry acquisition and relay system, recorder and reproducer systems for the AN/FPS-16 radars, and new mounts for the mobile tracking telescopes.

Through the years, designers and engineers have carried out these and many other successful efforts designed to keep White Sands Missile Range instrumentation up to date. Concurrently, they have concentrated on developing new instrumentation systems – new systems commensurate with the increasingly complex requirements foreseen for the future.

Therefore, a review of the many improvements and greatly expanded capabilities to be brought about through such long-range programs as TEAM-UP, to cite just one example, indicates that success will continue to be the rule.

This, in turn, portends continued success, and an even greater role in the future, for White Sands Missile Range, as the nation's busy all-land national range continues to make its important contributions to the defense of the nation, and thus to the over-all goal of peace in the free world.



Women will never be equal to men. They have no wives to criticize them.

Missile Park

(Continued from Page 2-C)

the display, at times standing several deep.

Because of the missile-display's unqualified appeal to the Armed Forces Day crowd, the missiles were left in the area afterwards. WSMR employes immediately began referring to "Missile Park," so, Missile Park was born.

The Loon missile was the American version of the German V-I, and Nike I, the first of the Nike family, later became Nike Ajax, the world's first supersonic missile to become operational.

Within a couple of years, a dozen or more missiles had been installed in Missile Park, each donated by the contractor who built and owned it.

Although the V-2, Loon and Nike Ajax were charter members of Missile Park, they were not the first missile flown on the White Sands range. That honor belongs to a war-time Tiny Tim, modified to simulate a WAC Corporal and developed to probe the upper atmosphere. The Tiny Tim was launched Sept. 26, 1945. It was seven months later, on April 16, 1946, that America's missile program got underway in earnest when the thunderous roar of the first V-2 shattered the desert stillness as it lurched from its make-do launch-pad and careened across the sky.

Between then and June 28, 1951, a total of 65 of the reassembled V-2s were launched on the White Sands range and two from ships at sea. During the program, the V-2 was used for hundreds of experiments and set numerous records, chiefly because it was the vehicle for the nation's first missile program. A V-2 with a WAC Corporal mounted on its nose was the world's first two-stage missile. One of these two-stage rockets, on Feb. 24, 1949, set an altitude record of 244 miles. That was America's first step towards the moon.

Nike Ajax was America's first guided anti-aircraft missile. It was first tested at WSMR in October 1951 and became fully operational May 30, 1954. It was the world's first supersonic guided missile to become operational and 10 years later, in November 1964, the pen-shaped Ajax, which had a "one shot kill" potential, was withdrawn from active duty.

Among other early comers to Missile Park was the Army Dart, anti-tank weapon which was first tested on the range in 1954. Dart was designed to blast through the heaviest known enemy armor and was a boon to the Army's foot soldier as a defense against heavy armor.

Soon to join the ranks of weapons in the outdoor showcase was the Navy's Aerobee Hi sounding rocket used for upper atmosphere studies. Still a vital support vehicle today, Aerobee was first flown in 1947 and broke its own altitude record for a single-stage boosted rocket 10 years later, on April 10, 1957, when it zoomed to 190 miles. Through the years, Aerobee has kept pace with science and today supports numerous programs including several for National Aeronautics and Space Administration.

Another making the early debut in the park was the Army Corporal, the tall, slim ballistic missile which preceeded the Sergeant. Standing 45 feet tall, Corporal had a range of approximately 75 miles compared to some 400 miles for the Pershing. Corporal followed a ballistic trajectory and had a propulsion system that utilized a liquid propellant rocket motor.

In addition to missile history, the WSMR park-museum serves as a monument to missile progress. During late 1966 and early 1967, four of the United States' newest missile systems were added to the collection. These were the Army's long-range Pershing, the Air Force Athena and Navy's Tartar and Terrier fleet air-defense missiles.

The two-stage Pershing was first tested at WSMR in August 1963. Today operational in the Western World, the highly mobile Pershing is test fired from sites in southeastern Utah and impacts on the White Sands range some 400 miles away.

The Air Force Athena is one of the most dramatic missiles in the park. Named for the Greek goddess, Athena is a research vehicle to study atmospheric re-entry problems and not a weapon. The 50-foot Athenas are launched in Green River, Utah, and impact on the WSMR range. On re-entry to earth's atmosphere over White Sands after its 400-mile flight, Athena puts on a spectacular show that is visible for hundreds of miles. The first Athena was launched in 1964, and at the beginning of the 1970 series in March, a total of 120 had been fired.

The Navy Tartar and Terrier took their places with the Talos in the southwest corner of the park in February 1967. Developed at WSMR by the Naval Ordnance Missile Test Facility (NOMTF), the sister missiles have been combined to form the Navy's medium range Standard missile. Terrier, a two-stage system, weighs approximately 3,000 pounds and has a 15-mile range. The single-stage Tartar has a 10-mile range.

Claiming the title of the largest missile in the museum is the Army's Redstone which towers above all its cohorts. The 30-ton, 69-foot Redstone was replaced by the Sergeant and Pershing, which are more mobile and adaptable as tactical weapons. However, Redstone is still fired in Australia. The liquid-fueled missile is a sister model of the propulsion vehicle that carried Commander Carpenter, U. S. Astronaut, on his space flight and man to the moon.

The Missile Park's smallest missile, although not the smallest in existence, is the Loki which is still used for research, usually in combination with other missiles. The Loki frame measures 103 inches long and three inches in diameter and it weighs approximately 24 pounds.

Also displayed in Missile Park, under the protection of Army, Navy and Air Force missiles, is a bronze memorial plaque commemorating the visit of the late President John F. Kennedy to the national missile range in June 1963.

Recently installed in the park was WSMR's own "flying saucer." Actually the cone shaped item is an aluminum payload from a balloon that was launched in a project several years ago near Roswell, and impacted on the White Sands range. But, the silver disk closely resembles an artists' conception of a flying saucer, and once mistakenly received publicity as an UFO.

10 commanders

(Continued from Page 1-C)

gradual decrease.

Between 1957 and 1967, there were a total of 22,150 "hot" firings on the range, of which 12,834 were missiles. In the 1968 fiscal year alone, there were 3,140 "hot" firings of which 1,531 were missiles.

Beginning late in 1967, personnel strength tapered off. As of Jan. 1, 1970, personnel strength was approximately 8,900 and the payroll a little more than $87 million. Although personnel strength has decreased slightly since then, the payroll remains relatively the same due to the retroactive raise for government employes dated back to Jan. 1.

Curiosity is the mother of invention, but intelligence is its father.

AMRAD is used on range in advanced study projects

One of the larger structures at White Sands Missile Range is the AMRAD radar.

The antenna assembly is over 100 feet tall. The disc itself has a diameter of 60 feet, and the dish and its tower stand within a 100-foot-high screen that fences out unwanted signals and radar echoes.

The screen encloses an area just about the size and shape of a major league baseball park infield and outfield, and from the air the whole installation looks something like a seatless Yankee Stadium with an immense tilted mushroom at the pitcher's mound.

Since the development of radar shortly before World War II, the design and capability of radar sensing devices have progressed rapidly, and radar techniques are widely used for many purposes – from the safe navigation of airplanes and ferry boats down to speed traps.

The AMRAD radar is a highly sophisticated instrument built to serve demanding research needs. It is a sharp-sighted tracking device, for one thing; it can give the location of a speeding object 500 miles away, within a few hundred feet.

One of the current uses of the AMRAD is the study of radar echo characteristics and how they may be used to distinguish among missiles, decoys, radar-reflective "chaff," and other bodies. Our country's defense system may depend on the ability of radar to detect the nature of incoming objects.

AMRAD is used to track and study the performance of our own re-entry vehicles and missiles. Specifically, the AMRAD has participated in observations of over 100 Athena and sounding rocket flights, as well as other experiments. The Athenas are launched from Green River, Utah, and are observed by AMRAD as they approach White Sands. The sounding rockets fired at White Sands are likewise tracked by AMRAD.

The name AMRAD stands for Advanced Research Projects Agency (ARPA) Measurements Radar. The project was begun by ARPA in 1961; the basic radar was designed and constructed by Raytheon Company. under direction of MIT's Lincoln Laboratory.

Riverside Research Institute assumed responsibility for the program in the fall of 1965; since the fall of 1968, the activities have been sponsored by White Sands Missile Range.

Riverside Research Institute management of the AMRAD facility is under the direction of Moses Arm. An 11-man professional staff is aided by a 31-man team of Raytheon personnel with Stanley Guy as leader.

The data collected at White Sands are subjected to a preliminary reduction here, and a preliminary data report is prepared within a week of a flight. A full-scale reduction of the data is performed at RRI headquarters in New York.

Forty-eight staff members within the institute's Radar Division are engaged in work related to the AMRAD device here, including test planning, technology studies to devise continual improvements to the radar, and data reduction.

Grad To Get Hughes Trophy

WASHINGTON (ANF) — Second Lt. David L. Moses has been selected to receive the Hughes Trophy as the top Army Reserve Officers' Training Corps (ROTC) college graduate of 1969. He will receive the annual Department of the Army award, donated by the Hughes Aircraft Company in 1964, at a Pentagon ceremony.

An alumnus of the University of Tennessee at Chattanooga, Lieutenant Moses was chosen from among more than 16,000 ROTC graduates commissioned in 1969 on the basis of outstanding academic and leadership accomplishments while in college.

Hundreds work in supporting Utah missile firing program

BLANDING, Utah. – The backward countdown originates in a Range Control van on White Mesa. It is heard on hundreds of receivers in Utah and New Mexico. As it reaches zero a U. S. Army Pershing missile roars into the sky above Black Mesa.

The sound diminishes as the powerful vehicle quickly disappears, leaving behind it a vapor trail resembling that of a jet plane. On the ground, the cloud of smoke and dust churned up by the initial thrust of the missile's first stage soon settles back and is blown away by the light surface wind.

Minutes later, by telephone and over the command radio net, comes word from downrange that the missile has impacted on target within White Sands Missile Range, more than 400 miles away in south-central New Mexico. Another off-range firing mission has been completed.

The spectacular show, beginning with the firing alert and including the countdown and the launching itself, lasted only a few minutes – or at most only a few hours – on the launch day.

But not readily apparent to the casual observer were the many operations that went on, for several days beforehand, in preparation for the firing. Also unseen were the hundreds of behind-the scenes workers – schedulers, controllers, assemblymen, repairmen, checkout technicians, instrumentation operators, ground and flight safety engineers, recovery crewmen, mathematicians, computer operators, photographers, test coordinators, military policemen, electronics technicians and administrative support personnel – without whom the launching and its tracking to successful impact could not have been accomplished.

The missiles are fired by batteries of the Seventh U. S. Army, which are operational in Europe, and units of the Federal Republic of Germany Air Force which have been armed with Pershings under the NATO (North Atlantic Treaty Organization) defense alliance.

These firing units are flown from Europe to Kirtland Air Force Base, N. M., and then travel from Albuquerque to Black Mesa by chartered bus. They bring only personal items – all necessary technical equipment, including the missiles, food, housing and other essentials are provided by U.S. Army support organizations.

Technical support during preparation and pre-flight checkout of the missiles is provided by a Ft. Sill, Okla., unit of the Fourth U. S. Army. This is the 2nd Battalion, 44th Artillery, 9th Field Artillery (Missile) Group. Activated in 1963 when the Pershing system became operational, the 2nd Battalion was the U. S. Army's first Pershing unit.

The 2nd Battalion, commanded by Lieutenant Colonel Harold C. Bennett, also operates the camp on Black Mesa and provides billeting, laundry service, logistical support, food service, local transportation and miscellaneous needs of a military force numbering as many as 500 men on bivouac in a remote area.

Some of the firing operations are conducted under simulated tactical conditions. While a number of portable metal buildings and mobile vans have been erected to form a semi-permanent physical plant for the encampment, several large Army tents also are used for such operations requiring protection from the elements as missile assembly and repair, vehicle maintenance and storage of supplies and equipment.

Firing and post-flight operations also are supported by a field force representing another technical organization from Ft. Sill. This is the U. S. Army Field Artillery Missile Systems Evaluation Group (FAMSEG), an all-military group of evaluators, or umpires.

Commanded by Lieutenant Colonel John A. Zalewski, the FAMSEG field crew is especially busy when operational units are firing annual service practice rounds, and when newly trained units are firing graduation rounds.

Technical management is provided by a field crew representing the U. S. Army Pershing Project Manager's Office (PPMO), of Redstone Arsenal, Ala. Chief of this field crew is James E. Conner. In Utah, he represents the project manager, Colonel Rutledge P. Hazzard of Redstone Arsenal.

Most organizational elements of White Sands Missile Range also are required to support the off-range firing program. As each firing day approaches, scores of WSMR military and civilian personnel, each with his special job to be done, converge on the Blanding area.

All WSMR operations are coordinated through the Utah Launch Complex headquartered at Green River. Director of this element of WSMR's Deputy for National Range Operations is A. Muray Maughan.

WSMR project engineer for the Pershing system is Reed Larsen, also of National Range Operations. Test coordinator for WSMR's Deputy for Army Missile Test and Evaluation is W. E. Worthy.

Twelve rounds were scheduled in the spring 1970 series of off-range Pershing firings, which began in April. This series is scheduled for completion in August.

Following a short midsummer break, the supporting organizations and technicians will return to the Blanding area in September to begin preparations for the fall series.

There's nothing wrong with the old-fashioned gal – maybe that's why they're old fashioned.

Congratulations WSMR On Your 25th Anniversary

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'Tiny Tim' first missile fired on Range in 1945

America's missile program got off the ground at 10 a.m. Sept. 26, 1945, when a modified Tiny Tim rocket left its launcher at White Sands Proving Ground (official name used until 1958) and vanished from sight in the New Mexico sky.

Carrying a 250-pound lead nose cone, the Tiny Tim was unimportant within itself but played a key role in the development of the WAC Corporal and literally launched the nation's missile program.

In September 1941 there was no service type rockets at all; in September 1945 Tiny Tim was launched; five years later thousands of missiles had been produced and fired by American fighting men in various branches of the Armed Forces.

Even before Germany launched its V-2 attack against England during World War II, the U.S. Army Ordnance Corps recognized the possibilities of rocket warfare and sponsored research and development in methods of missile guidance. The Armed Service National Defense Research Committee and representatives of American industry were pooling efforts toward developing guidance systems, and in September 1943 the Rocket Branch of Army Ordnance Corps was established to run the rocket program.

In December 1944, Ordnance asked Jet Propulsion Laboratory (JPL), Pasadena, Calif., to perform a study on the feasibility of developing a high-altitude sounding rocket capable of carrying 25 pounds of meteorological instruments to an altitude of 100,000 feet. The results of this study gave birth to the WAC Corporal program, in which the Tiny Tim inaugurated the nation's first missile range.

The WAC Corporal rocket was 12 inches in diameter and 194 inches long. It consisted of an acid-aniline propellant system capable of 1,500 pounds of thrust for a period of 45 seconds, and a booster consisting of a modified Tiny Tim aircraft rocket capable of 50,000 pounds of thrust for .6 of a second. The rocket was fired almost vertically with a primary objective of reaching a maximum altitude. Therefore, a guidance system was not involved.

In this joint effort, Ordnance coordinated the program, JPL directed missile development and technical phases of the firing, Aberdeen Proving Ground obtained test flight data, Signal Corps provided weather instrumentation and support, and Colonel Harold R. Turner, commanding officer of the newly established missile range, directed test scheduling and safety.

Aerojet Engineering Corp. provided field handling equipment for the program, and Douglas Aircraft Co. accomplished missile assembly.

Since this was the first rocket of its type to be made, the WAC Corporal testing was planned in four phases. The first phase consisted of a booster loaded with a 250-pound lead nose cone to simulate the rest of the missile. Phase two was a dummy WAC Corporal consisting of a booster and a pipe full of cement simulating the rest of the missile. The third phase was a booster and a partial charge of acid-aniline and the fourth phase was a complete WAC Corporal.

The Tiny Tim was used as the booster in the program and it was the first phase, Tiny Tim with the lead nose cone, that was launced in September 1945.

Rocketets in phase two were fired on Sept. 27 and 28, and two rounds of phase three on Oct. 1 and 2. Six rounds of the full WAC Corporal were fired between Oct. 1' and Oct. 25, 1945, with the WAC Corporal reaching an altitude of 230,000 feet. The program was far more successful than had been anticipated.

In the meantime, some 100 carloads of German V-2 rocket parts and components had arrived at WSMR from Europe, and the V-2 experimental program was getting underway. This program sent up its first V-2 vehicle on April 16, 1946.

A Most Memorable Flag

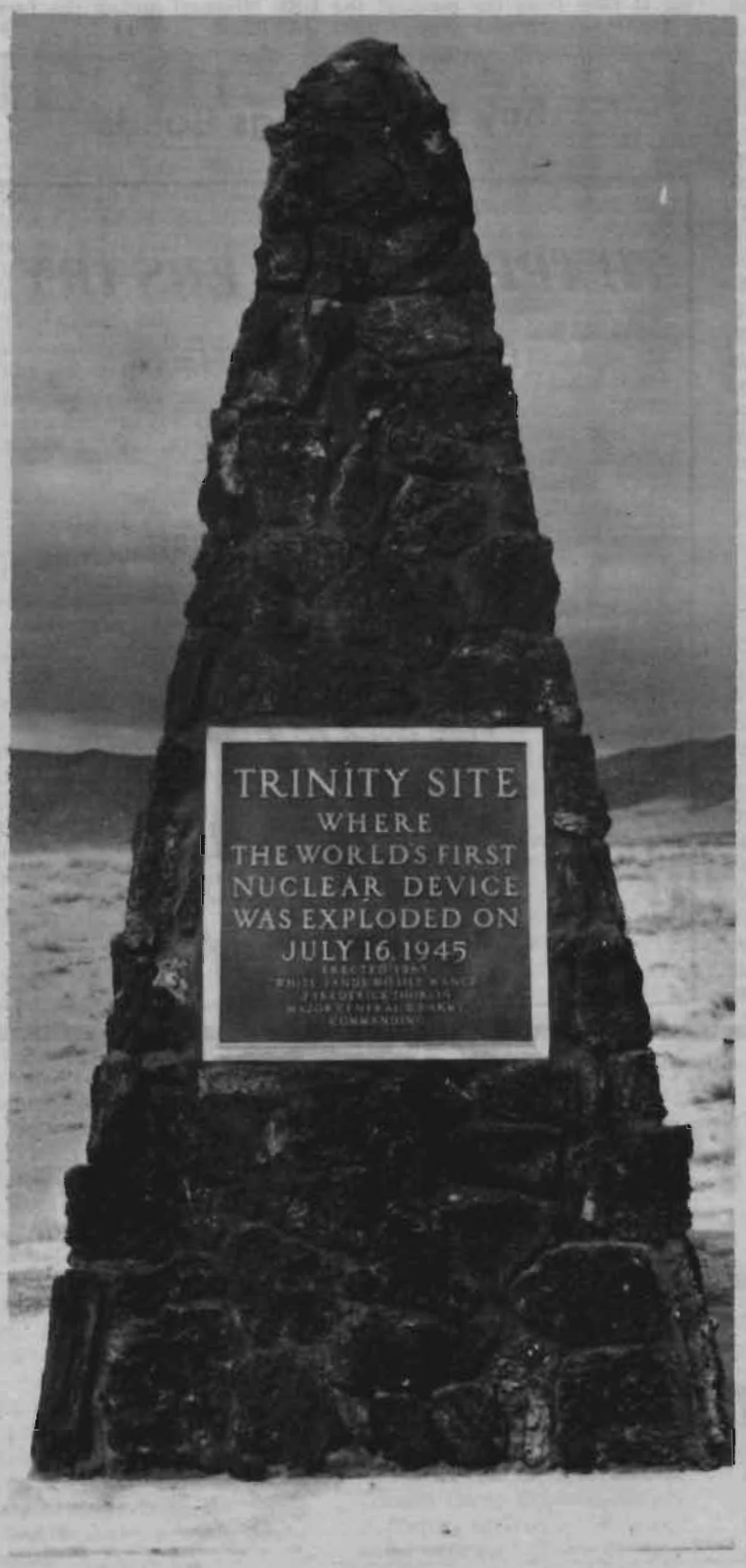
One of the most memorable American flags is the one that flew over the Capitol in Washington, D.C., Dec. 7, 1941 when Pearl Harbor was attacked.

This flag was raised again Dec. 8 when war was declared on Japan, and three days later at the time of the declaration of war against Germany and Italy.

President Roosevelt called it the "flag of liberation" and carried it with him to the Casablanca Conference and on other historic occasions.

It flew from the mast of the USS Missouri during the formal Japanese surrender Sept. 2, 1945. (AFPS)

Now desolate, Trinity Site knew its moment of glory 25 years ago



TINITY SITE – Erected by the U.S. Army at White Sands Missile Range, N.M., this black lava-rock monument marks the site of man's first awesome achievement of the 20th century, the atomic detonation of July 16, 1945. Located in the northernmost portion of the vast missile range, the site is visited once each year by people who come hundreds of miles by automobile caravan. (U.S. Army Photo)

Twenty-five years ago, on July 16, 1945, a blinding light leaping from the floor of the New Mexico desert bathed the surrounding mountains in an eerie light brighter than day; a shockwave knocked over two men in a bunker some distance away; a roar welling across the Tularosa Basin was heard from El Paso to Albuquerque; months later, the President of the United States announced the detonation of the world's first atomic device in south-central New Mexico.

Trinity Site, the birthplace of the atomic age, is located some 80 miles north of White Sands Missile Range headquarters in the northern portion of the 100-mile-long range. Today, Trinity Site celebrates its 25th birthday anniversary in the same desolation that brought it world renown.

Although its hour of glory has long past, the historic spot is still remembered. Once each year, through the cooperation of the Army at White Sands Missile Range and the Chamber of Commerce at Alamogordo, N. M., the site is open to visitors. On these days, people come hundreds of miles in automobile caravans to spend a few hours gazing at the scar on the desert floor left by the blast which shattered the stillness of the entire state, reverberated across the nation and sent shockwaves around the world.

Marked today by a simple black-rock pyramid monument surrounded by a greenish colored gravel called "trinitite," Trinity Site still lies miles and miles from any living object or creature, exept perhaps a few stray rattlesnakes, coyotes, lizards and rabbits. The green-gravel trinitite is actually the residue of melted sand left from the roaring blast.

Set off from a 100-foot tower, the explosion was felt and seen in almost all parts of New Mexico and extreme West Texas. Understandably, it caused a deluge of speculation and alarm...something exploded at the one-week-old White Sands Proving Ground (official name until 1958). . .an explosion storage dump. . . and other guesses. The only generally accepted explanation was "something big" had happened. The true explanation was not known until after the bombing of Hiroshima and Nagasaki, when President Truman released the story of the atom bomb.

Located on the old McDonald Ranch and within WSMR's 90-mile impact area, Trinity Site was unofficially named by the late Dr. J. Robert Oppenheimer, who was assigned to develop and produce an atom bomb. The name became offical several years ago when steps were initiated for making the site a national monument.

In commemoration of man's first awesome scientific achievement of the 20th century, the Army at WSMR made and erected the conical shaped black-lava rock monument and surrounding tall cyclone-type fence. For safety, remnants of structures, bunkers, and conduits left from the single blast were torn down and removed. Also for safety, trinitite was broken to fine bits and bulldozed under the top soil.

The small sign warning people – although a few desert animals are the most frequent visitors – of the hazardous area, long ago was bleached and blasted bare by wind and rain. Today a single unimpressive board on the padlocked gate bears the name Trinity Site. The lava rock monument identifies "Ground Zero."

Did you know?

No two cows, pigs, ants, fish or rabbits are ever alike, any more than any two humans are alike. It is our lack of careful observation that leads to assume otherwise.

El Paso Firms Salute White Sands