

SOURCE:

Pacific Missile Range Facility (PMRF) Cultural Landscape Report Final

August 2011

Chapter 3 Historic Context

Introduction

To the extent that it is relevant to archaeological and historical investigations at PMRF, the cultural and historical setting is reviewed as six topics: (1) traditional cultural geography; (2) traditional land use; (3) early historic land use; (4) commercial agriculture era; (5) early twentieth century prior to World War II, and (6) **World War II and Cold War to 1990s**.

World War II and Cold War

The World War II and Cold War eras brought considerable changes to Barking Sands and the surrounding ridges. At the time of the Japanese attack on Pearl Harbor, Barking Sands was an unpaved landing strip with a small number of support structures. The wartime expansion was primarily focused around the north and south runways, which were paved in 1942. By the close of the war, the base had grown to include a main base area that was located on the eastern side of where the south and north runways met. Other support structures, including revetments, defensive bunkers, antiaircraft gun positions, fueling areas, and a taxi apron, were located on the eastern and northeastern side of the north runway. The only substantial military development away from the runways of Barking Sands, yet related to airbase operations, was the Kamokala Ridge munitions storage, built in 1943, and Port Allen. During the Cold War, the various missions of the base brought redevelopment of the World War-era areas as well as the development of two new facilities atop Kōke'e Ridge and Mākaha Ridge. The story of Barking Sands in the World War II and Cold War periods is told here.

WHAT FOLLOWS IS EDITED FROM "WORLD WAR II AND COLD WAR":

SUBSECTION: 'BARKING SANDS IN THE EARLY COLD WAR PERIOD, 1946-1965'

Barking Sands in the Early Cold War Period, 1946–1965

This portion of the Historic Context is predominantly drawn from Karen Weitze's *Pacific Missile Range Facility (PMRF): Cold War Historic Context Statement* (2008). Supplementary sources include TEC Inc.–JV's *Pacific Missile Range Facility (PMRF) Cultural Landscape Report Final* (2011a) as well as the Hawaii Air National Guard's *HANG 25: History of the Hawaii Air National Guard, 4 November 1946–3 November 1971* (1971).

With the war over, the military was shutting down or otherwise lessening the burden of numerous installations across the globe. Many of the old territorial landing fields throughout the Hawaiian Islands that the military had developed for wartime use were returned to Hawai'i in the first several years after the war. By orders of the Air Force Chief of Staff, Barking Sands AAB was one of many installations that was to be declared excess. The Department of the Air Force, formerly the USAAF and, as of September 1947, an official branch of the US military, disapproved of this plan, and Barking Sands was not declared excess. The installation was renamed Barking Sands Air Force Base (AFB) in 1948. In the same year, the Air Force added 200 acres to the existing 2,000. The installation served as an off-site base linked to Hickam AFB in Honolulu (TEC Inc.–JV 2011a; Weitze 2008) (**Figures 3.39–3.42**).

Though the US Air Force had managed to save Barking Sands from abandonment, its use of the installation was minimal in the late 1940s and early 1950s. A photograph from 1946 (**Figure 3.43**) indicates that Hawaiian Airlines occasionally used the airfield. During this period, the landscape of Barking Sands AFB appeared as it did during the war, although the level of activity at the base had dramatically decreased (**Figures 3.44–3.52**). The base had two 200-by-6,000-foot runways, aligned northeast and south-southeast; 22 sand-revetted aircraft (bomber) parking pads, configured singly and in pairs; a large, rectangular aircraft parking apron off the north runway; a northern area of clustered fuel tanks; a cantonment of several dozen 700-series, wood-frame buildings clustered along the west edge of the airfield's center; and a small cemetery at the northern tip of the cantonment (Weitze 2008) (**Figure 3.53**).

In 1950, the Hawai'i Aeronautics Commission (HAC) began working with the CAA to acquire the site should it be abandoned by the Air Force. HAC noted that the site should be maintained as a territorial airport and, additionally, advocated that it could possibly be used as a base for the National Guard (State of Hawaii 2005–2011). Though HAC and the CAA's effort to acquire Barking Sands never came to fruition, the 199th Fighter Squadron of the Hawaii Air National Guard (HANG) did perform summer training sessions at Barking Sands AFB in 1951 and 1952 (Hawaii Air National Guard 1971).

On 15 June 1953, Barking Sands AFB was redesignated Bonham Air Force Base (Hawaii Air National Guard 1971). The name change acknowledged the activities of HANG at the base and, in particular, the service of a specific Guardsman, Captain Carlos W. Bonham. An award-winning aerial gunner who went by the nickname "Bonny," Bonham was a commander of the 199th Fighter Squadron that held summer training sessions at Barking Sands in the early 1950s. During the 1952 session, Bonham was killed in a midair collision. Services for Captain Bonham were held at Barking Sands AFB on 24 June 1952. His ashes were scattered offshore and, with friends and fellow servicemen watching from the dunes of Barking Sands, flowers were dropped from a C-47 (**Figure 3.54**). The 199th flew "a tight farewell formation." By 1956, a new mission at Bonham AFB suspended HANG training, but the organization would return in later years (Hawaii Air National Guard 1971:21).

[Editor's Note: Historic memo, source unknown, but appears to be a USAF memo o/a mid-1964, provides additional information as to the fate of the majority of WWII-era structures:

"6. With the end of WWII and phase-out of military operations, Bonham was declared excess and inactivated in 1949. In 1950, the Honolulu Area Engineer was in the process of effecting return of Bonham to the Territory of Hawaii when a suspension of all disposal actions was ordered by USAF in view of the critical world situation. In February 1954, the entire installation, which was valued at [approx.] \$5,000,000, was again declared excess in compliance with Headquarters MATS directives. However, in January 1955, Headquarters USAF suspended disposal action pending transfer of Bonham from MATS to FEAF. Subsequently, disposal action was cancelled in July 1955.

7. Upon the inactivation of the Base, a caretaker was stationed on the Base to maintain facilities and safeguard Air Force property. In January 1957, the Air Force caretaker vacated the premises [Editor's Note: allegedly a USAF Major, the namesake for "Major's Bay" recreational area] and the Navy assumed the caretaker responsibility of Bonham as of 1 February 1957. The Navy is utilizing a major portion of Bonham for training purposes by Permit No. HONEA 180, effective 27 March 1956, renewable and revocable at the discretion of the Secretary of Air Force upon 30 days notice. Amendment No. 2 extended permit for a term of five years ending 26 March 1966. The area used by the Navy is not authorized to demolish and/or construct any facilities on the Base without prior approval of the Air Force.

8. In 1953, more than 100 temporary demountable buildings were disposed through sale to the Kauai community by the Honolulu Area Engineer. Also, in May 1958, approximately 90 demountable and mobilization type buildings which were deteriorated beyond economical repair were process for disposal action. The demolition was accomplished by the Area Engineer through sale which realized a revenue exceeding \$13,000 due to the need of second hand lumber to repair damages caused by "Hurricane Dot" on Kauai. In addition to the disposal of deteriorated buildings, 229.5 acres of land located in the south end of Bonham was transferred to the Department of the Army for the construction of a communications facility."

Returning to the text of the Cultural Landscape Report:

[Editor's Note: Arrival of the REGULUS cruise missile development program:]

The first major Cold War mission arrived at Bonham AFB in 1956. The Navy became a tenant at the airfield, making a five-year arrangement with the Air Force for the use of 37 acres to support a training mission for the Regulus guided (cruise) missile (**Figures 3.55 and 3.56**). In 1947, the Navy's Bureau of Aeronautics had awarded Chance-Vought Aircraft a contract to develop a strategic cruise missile similar to Glenn L. Martin's Matador missile, a weapons system underway for the AAF (soon to be Air Force). Regulus specifications outlined a 500-mile nautical range, a 3,000-pound warhead, and a speed just under Mach 1. As first planned, submarines would carry the Regulus below deck, surfacing and raising the missile for firing. By 1957, the Navy had modified 10 carriers, four destroyers, and two submarines to launch the Regulus, with additional submarines configured with Regulus guidance equipment. Guidance first relied on directional signaling from two submarines positioned near an enemy coastline, and later on a combination of radar tracking and guidance control and correction from a single submarine or aircraft. For maximum-range launches, Navy controllers could hand off guidance from

ships, aircraft, and in some instances ground stations up to three times during a Regulus flight trajectory (Parsch 2008f). By 1950–1951, testing and evaluation of the Regulus had been initiated over the dry lakebeds at Edwards AFB east of Los Angeles, and by 1952, over water at the Naval Air Missile Test Center (NAMTC) at Point Mugu, off the Santa Barbara coast. Regulus became operational in mid-1954. The Navy operated four guided-missile training schools in the early 1950s, three of which had training courses for the Regulus. In addition, the Navy established numbered Guided Missile Units (GMUs) for the Regulus to assist in the testing and evaluation of the missile, and to train seamen with the weapons system. In 1958, the over-water range at Point Mugu became part of the Pacific Missile Range (PMR), a national asset used by all three service arms in the Department of Defense and by the National Aeronautics and Space Administration (NASA). The PMR paralleled the function of the Atlantic Missile Range (AMR) off the coast of Florida. Training activities for guided missiles ceased at Point Mugu, in deference to its new role as a national test range, and by 1956, also ended at Pomona. The Navy consolidated the majority of its training at Dam Neck, Virginia, and at Jacksonville, Florida (for air-launched missiles), but in 1956 moved GMU 1 from California to Bonham AFB (Best et al. 1995:43-47, 124-127, 145-146). GMU 1 was operationally tiered to Point Mugu, supported administratively by the Naval Air Station (NAS) at Barbers Point on Oahu (Burley 2008). Bonham AFB on Kaua'i offered a situation somewhat similar to Point Mugu, where islands in the Santa Barbara Channel afforded launch sites for target drones and observation points. As an ancillary to the PMR, the Regulus training mission stimulated the Navy's formal naming of its activity at Bonham AFB in late 1958: the Pacific Missile Range Facility (PMRF) (TEC Inc.–JV 2011a; Weitze 2008).

The Navy's facilities at Bonham AFB directly reflected the training mission of GMU 1, and were completely distinct from the facilities on Oahu that supported Regulus submarine patrols in the Pacific. For its training mission at Bonham AFB, seamen fired the Regulus from mobile equipment on land and from ships at sea, with guidance and target practice also accomplished by men aboard vessels (*Honolulu Advertiser*, 12 July 1956). Two F-8 Crusaders, chase aircraft out of Barbers Point NAS, stayed with the missile as it climbed to 35,000 feet, and guided it back to the runway at Bonham AFB. Sometimes the Navy also flew F-9 Cougars out of Barbers Point to simulate the Regulus missile during training operations. In these cases, submarine crews controlled the F-9s, although a pilot and second crew member were aboard to fly the aircraft manually. To carry out its Regulus training mission, GMU 1 set up activities at four operations locations on the base. Two of the areas were clustered on and near the World War II parking apron off the north runway, while the remaining two were located at and near today's Public Works compound. The Regulus training landscape included both permanent (two) and ephemeral (two) sites. In addition, the men of GMU 1 billeted in an existing World War II barracks to the west of the Regulus preparations area

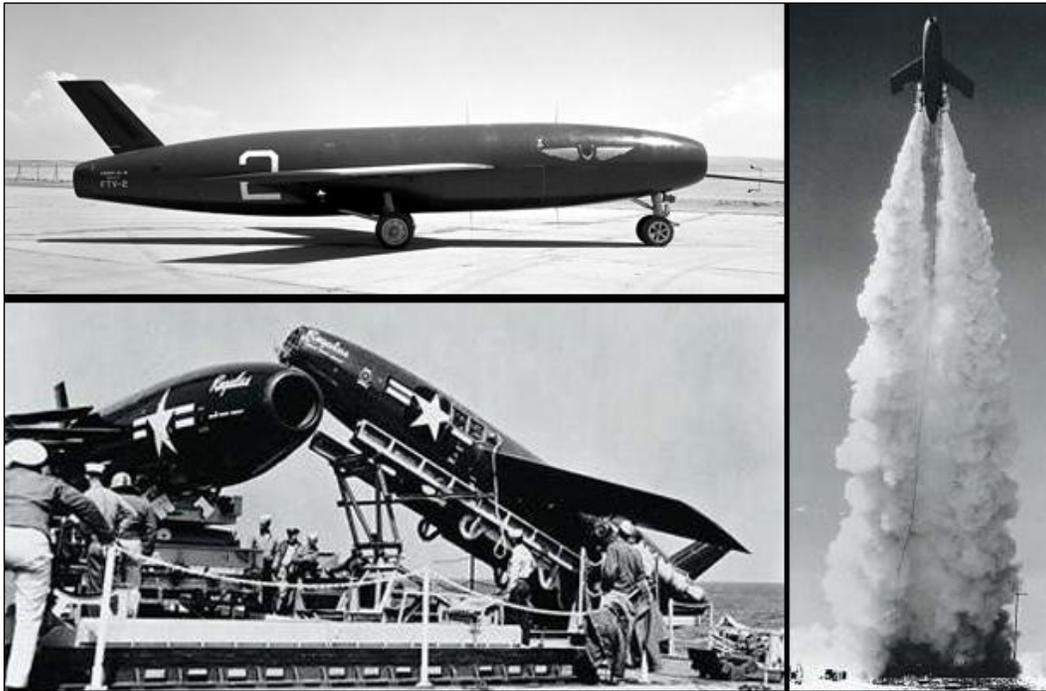


Figure 3.55. Photographs of the Regulus I missile. Courtesy of Vought Aircraft Industries.



Figure 3.56. Photographs of the Regulus I missile at Bonham, 1965. Courtesy of John Burger.

(an earlier Facility 801, gone today, and completely distinct from present-day Facility 801 at the southern end of the PMRF). GMU 1 also stored some spare parts in a World War II warehouse (Facility 250, replaced today on its original raised foundation) (Burley 2008).

A few men arrived at Bonham AFB during the summer of 1956 to undertake advance setup for the Regulus training mission, with the seven seamen of GMU 1 in place as of January 1957. GMU 1 grew to 12 to 15 men within about six months. Chance-Vought also had employees on site, with additional sailors stationed at Barbers Point NAS to support the mission. Herb Bonaventure, Branch Chief for Fleet Support at Point Mugu, was the first operations director for the Regulus training mission at Bonham AFB, as of about mid-1958 (Bonaventure 1991; Burley 2008). Typically, several men would fly over from Point Mugu for each Regulus launch. Chance-Vought transported Regulus training missiles (with retractable wheels and without warhead sections) to Kaua'i by ship in containers, with personnel trucking the containers to a fenced preparations area at Bonham AFB (an area configured similarly to, but probably within, today's fenced Public Works compound). Men unbolted the top of the containers, using a crane to lift the Regulus from its packing, and placed it onto a mobile launcher. The preparations area included four primary buildings: a run-up shop (former Facility 2016), a Regulus tire shop (former Facility 2018), a general-vehicle tire shop (former Facility 2017), and a single-capacity Regulus storage facility (Facility 101). Of this group, Facility 2016, the run-up shop, was the most important. Facility 2016 featured three bays: a center bay where men backed in the Regulus missile mounted on its mobile launcher, bracketed by a two-room machine and battery shop on one side and a screened-in electronics shop with a small attached office and vault room on the other. Site plans from 1956 and 1958 show Facility 2017 as separately fenced, abutting the main compound that included Facilities 2016, 2018, and 101 (a Butler building, originally an unnumbered facility). The earliest formal name for Facility 101 on drawings of June 1956 was "New Bird Storage Facilities." "Bird" is a generic term for aircraft and missiles. Highly altered today, Facility 101 originally featured a fully open interior, with explosion- and dust-proof lights. By 1958, another small building existed in the Regulus preparations area, immediately adjacent to Facility 2018. Numbered as Facility 2020, this facility is remembered as the latrine. A taxiway to a former revetted aircraft parking pad accessed the Regulus preparations area, with Facility 101 separated from the other buildings in the compound by this preexisting "road" (although Facility 101 was still within the security fence) (Burley 2008; Mason Architects, Inc. [MAI] 2007–2008; PMRF Historic Photographs n.d.; TEC Inc.–JV 2011a).

Only about five or six Regulus training missiles were kept at the PMRF at any one time during 1957–1964, as remembered by an inaugural member of GMU 1, Stewart Burley (Burley 2008). The missiles were predominantly stored outside in the open, always on their mobile launchers (presumably, one missile was also stored inside Facility 101). Coupled with the Regulus fenced preparations area was a cluster of telemetry vans and two van-mounted SCR-584 radars, placed on the tarmac to the immediate south of the juncture of the north and south runways. The taxiway from the preparations area accessed the vans. Unlike the preparations area, however, the van area was ephemeral, in existence at this location only for the duration of the Regulus mission at the PMRF. About a dozen wheeled vans contained the telemetry equipment, allowing equipment operators to receive and evaluate the results of a Regulus launch in real time (MAI 2007–2008; PMRF Historic Photographs n.d.). The SCR-584 radars were Army anti-aircraft, gun-laying systems, used widely by the Army during World War II and afterward, and also refurbished postwar as range instrumentation at multiple locations in the United States. In ca. 1964, the Navy is believed to have moved the Regulus telemetry vans to near the site of Facility 105, adapting the equipment (and continuing its use) for the PMR Fleet Training Facility.

The Navy configured a launch area for the Regulus training missile in the middle of the World War II aircraft parking apron off the north runway, also establishing a booster storage site nearby. A large, circular, heavily reinforced concrete launch pad, still extant today, included three oversized, steel tie-down loops for the positioned launcher. A firing angle of 330 degrees remains evident at the site, not only from the presence of the tie-downs, but also in the two sections of damaged concrete (underneath the side-mounted boosters). A small, probably portable, metal blockhouse, mapped in 1965 with a protective sand berm, stood along the western edge of the aircraft parking apron. A smaller rectangular concrete pad, with two very small rear pads, may also have been associated with the Regulus launch area positioned forward from the circular launch pad at the edge of the aircraft parking apron. The second cluster of pads, although not of heavy construction, featured an identical launch window of 330 degrees. These pads are of undetermined historic use. GMU 1 personnel towed a Regulus training missile on its launcher from the preparations area to the launch area, positioned it on the circular launch pad, and readied it for firing (Burley 2008). The weight of the Regulus topped 13,500 pounds when fueled and augmented with its solid-fuel boosters. GMU 1 stored the boosters in Facility 100, a concrete-block structure designed and erected specifically for the Regulus mission. Facility 100 sat in the center of a World War II revetted parking pad, accessible from the aircraft apron. The sand revetment provided blast containment, should an accident occur with the solid-fuel boosters. Each booster weighed about 1,750 pounds (MAI 2007–2008; Parsch 2008f). The circular launch pad was the only permanent feature of the otherwise ephemeral Regulus launch site, although Facility 100 remains in use for munitions storage today.

The Navy sustained a Regulus training mission at the PMRF into the 1960s, paralleling operational deployment of the weapons system for Pacific patrols out of Pearl Harbor. In 1962, the Navy added two standard 20-by-100-foot dehumidified aircraft storage containers within the fenced preparations compound (today's Facilities 104 and 158). The storage containers were not Regulus shipping containers, and may or may not have been used to store individual Regulus missiles (with wings folded). Access doors of these shipping containers were about 12 feet wide—Regulus shipping containers had no access doors. The Navy later modified Facilities 104 and 158 for the Public Works compound (MAI 2007–2008) (**Figure 3.57**). Regulus operations at Bonham AFB and the nascent PMRF during the late 1950s and early 1960s led to the negotiation for a full transfer of the airfield from the Air Force to the Navy. Bonham AFB became Auxiliary Landing Field (ALF) Bonham while these efforts went forward. Removing the Regulus from service in August 1964, the Navy officially ended the weapons system program in January of the next year. Simultaneously, the Air Force transferred ALF Bonham to the Navy, and from this date forward the installation has been known as the PMRF. The Navy converted the majority of the remaining Regulus missiles to expendable target drones, redesignating them as BQM-6Cs. A ca. 1965 photograph (**Figure 3.58**) shows about 20 of the decommissioned Regulus missiles, with wings folded, stored end to end outside along the remnants of three World War II taxiways (two former revetted parking pads). Chance-Vought had fabricated a total of about 500 Regulus missiles of all types. During May–June 1966, the Navy fired the final 16 Regulus missiles (converted as BQM-6C target drones) from the PMRF, subsequently replacing the target with a BQM-34A Firebee (Binder 1995:6; *Honolulu Star-Bulletin*, 16 May 1966; Parsch 2008f).



Figure 3.57. Public Works compound, Barking Sands, 25 September 1967. Courtesy of the National Archives and Records Administration.



Figure 3.58. NASA Hawaiian Tracking Station range center and Regulus compound and barracks area, ca. 1965. Inset shows row of Regulus missiles. From the Batis Collection, PMRF.