

**PACIFIC MISSILE RANGE FACILITY:
WORLD WAR II STRUCTURES,
ISLAND OF KAUA'I, STATE OF HAWAII**

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The author is a retired investigator with the Honolulu Police Department and Prosecuting Attorney's Office and belongs to the American Aviation Historical Society and the Coast Defense Study Group. He has been active in the latter organization for the past ten years, and is a contributing writer to its quarterly journal with over thirty articles regarding the coast defenses of the Hawaiian Islands and U.S. Pacific Island possessions in World War II (WWII), including airfields.

He served in the Air Force from 1957 to 1961 as a radar operator at stations in Washington State and British Columbia, Canada,

Bennett has examined WWII bunkers, gun emplacements, tunnels associated with gun batteries, observation posts, pillboxes, and several former military airfields on the Island of O'ahu.

Brief World War II History of Barking Sands Army Air Base

Barking Sands Army Air Base (AAB) was established on June 1, 1942 as a dispersal field for the 7th Air Force headquartered at Hickam Army Air Field (AAF) on O'ahu, Territory of Hawaii.

Large scale construction began after the attack on Pearl Harbor with the paving and lengthening of the existing runway (16-34) to a length of 6,000 feet and a width of 200 feet. The extended runway length enabled heavy bombers such as B-17s and B-24 to use the airfield.¹ Mobilization buildings were constructed to accommodate flying squadrons and air base support units.

The first commanding officer was Col. George R. Bienfang in 1942 followed by Lt. Col. Stephen J. Rosetta on November 20, 1944.²

A second runway (1-19) of identical length and width as Runway 16-34 was also built, work continued into October 1944 on a parking apron off the east shoulder of Runway 1-19. Upon completion, both runways included 200 foot shoulders on either side of the 200 feet wide runways for a total width of 600 feet.³

Base Defenses

Initial defense of the area was established shortly after December 7, 1941 with the arrival of a detachment of Territorial National Guard soldiers of the federalized 298th and 299th Infantry Regiments commanded by Lt. Col. Eugene Fitzgerald. On October 15, 1940, Lt. Gen. Walter Short, Hawaiian Department Commanding General dispatched the 3rd Battalion of the 299th Infantry Regiment (less Companies L and K) plus Company C. 1st Battalion, 298th Infantry Regiment to defend Kauai until the arrival of replacements. Prior to December 7, 1941, no fewer than five men were stationed at Barking Sands. On December 7, 1941, Lieutenant Colonel Fitzgerald dispatched one detachment each to guard Barking Sands, Burns Field, and the port of Nāwiliwili at Līhu'e, the island's capitol.⁴

Lieutenant General Delos C. Emmons relieved General Short as Hawaiian Department commander on December 17, 1941. Shortly thereafter, General Emmons ordered the placement of obstructions on all level areas over 400 feet long on which enemy planes could land or take off. By mid-March 1942 all pineapple fields and 60 percent of other likely sites on O'ahu had been blocked. On the outer islands, major emphasis was placed on rendering all airfields useless to the enemy, except those necessary for defense. Consequently both airfields on Kaua'i (Barking Sands and Burns) were mined by army engineers.⁵

Beach defenses were constructed by Company A, 165th Infantry Regiment, 40th Infantry Division, which built and manned defenses at the airbase from April 8 to October 1942. Defense work completed by Company A, included stringing 23 miles of barbed wire along the beach, building foxholes and several .30 caliber machine gun positions.⁶

Company A, 165th Infantry was relieved in October 1942 by Company K, 185th Infantry Regiment, 40th Infantry Division until the division departed for Guadalcanal on January 13, 1944.⁷

Upon the arrival on island of the 398th Infantry Regiment, 98th Infantry Division on April 19, 1944, a detachment was sent to the Barking Sands area to man the defenses until the regiment moved to O'ahu on May 28, 1944 to train in preparation for the invasion of Japan.⁸

Notable Events at Barking Sands

Barking Sands AAB was the location of the "Air Combat Replacement Center (Provisional)" from November 1944 to December 15, 1945 when the assets of the 63rd and 91st Airdrome Squadrons were merged. The center processed combat aircrews of the Army Air Forces enroute to war zones by training them in a number of subjects including escape from crashed aircraft, and a gunner's school. At its peak in July 1945 2,000 aircrewmembers were enrolled at the center.

The base received a Chevrolet 1.5 ton "Truck Turret Trainer" on July 1945, which was fitted with a Martin 250CE twin gun turret fitted to the body of the vehicle, this was the same turret used on the A-26 and B-24 aircraft.⁹

The air base also housed a Marine tow target detachment which flew Martin JM-1 (B-26) Marauder aircraft. Marine squadron VMTD-1 was commissioned at Barking Sands on March 23, 1945, redesignated to VMJ-1 on May 1, 1945, assigned to the 3rd Marine Division, squadron towed targets for all USMC AA batteries stationed in the Hawaiian Islands. VMJ-1 was deactivated at Barking Sands in October 1945.¹⁰

The base accommodated a number of B-24 heavy bomber squadrons headed for the Central Pacific war zone. The 494th Bombardment Group (Heavy) with the 864th through 867th Bombardment Squadrons (Heavy) was the last B-24 outfit to leave the Continental United States for overseas deployment; the group arrived at Barking Sands on June 15, 1944 and departed on September 30, 1944 for Angaur, Palau Islands via Johnston Island and the Caroline Islands.¹¹



USMC Martin JM-1 being serviced at Barking Sands AAB in the fall of 1944; 494th Bombardment Group B-24s in the background. (Photo: NARA A40827-B64993AC courtesy of foot note™)

Commentary

The following comments are submitted with regards to certain extant World War II structures described in the report titled, *Integrated Cultural Resources Plan for the Pacific Missile Range Facility (PMRF)* dated April 2005.

Site Nos. 50-30-05-2007, -2030(2), -2048: Concrete pillboxes. No description furnished, nor photographs or drawings which depicted the structures.

Comment:

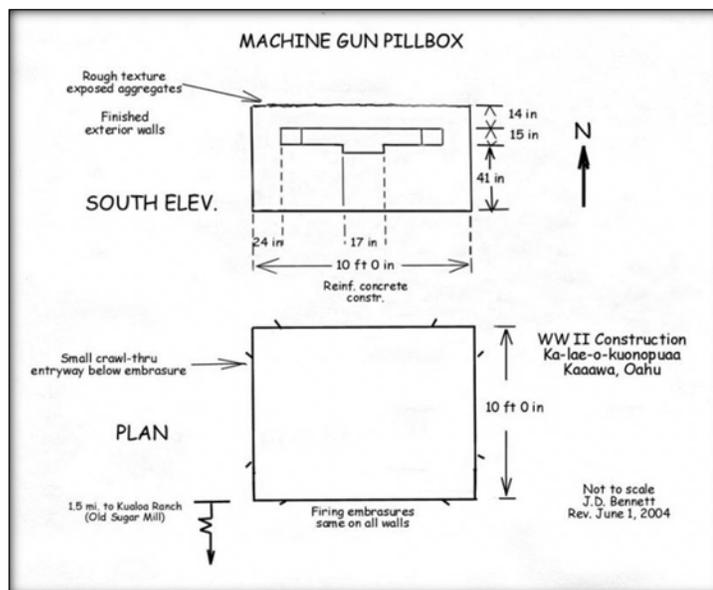
Concrete machine gun pillboxes emplaced in the Hawaiian Islands during WWII were of several designs; the most common example was mass-produced in Army Corps of Engineer base yards using the pre-cast method of construction.

The structure was square shaped with slab walls and roof, typically built with four embrasures, one to a wall. The number of embrasures was dictated by the location in which the pillbox was to be sited, and may have included anywhere from two to four firing slits (embrasures). Typical dimensions were eight feet square, although examples have been found that were ten feet square. Entry was usually accomplished through an opening at the rear wall.

Rebar hoops or staples were included at the four outer corners near the roof which enabled the completed pillbox to be lifted on and off a conveyance for delivery to the site. Construction was performed in place at steep locations, e.g. mountain ridges, which prohibited a pre-cast pillbox being transported to the location. Construction materials were transported by pack mules and human labor to elevated sites.

Another design incorporated a rectangular shape with a longer body length, which included a rounded front with a firing embrasure that conformed to the shape of the wall, and a square rear wall.

The walls were slab sided and the roof rough textured. Entry was achieved via a small opening either on the right or left walls depending on the site.



Drawing of a WWII mass-produced ten foot square pillbox located above the beach at Ka'a'awa, O'ahu. (Drawing by the author)



Typical WWII mass-produced pillbox, example located at Mākua Beach, O'ahu. Another example was known to have existed near the south end of the runway of Kualoa Army Air Field (AAF), which was demolished during construction of a city park. (Photo by author)



Rounded front pillbox at Kualoa Beach, structure placed about mid-field of the former airfield. (Photo by author)



*Double-ended pillbox shown at Nimitz Beach at the former Naval Air Station Barbers Point (NASBP) at Kalaeloa, O'ahu
(Photo by author)*

A hybrid of the rounded front wall design included another section joined to the rear wall as shown in the above photograph taken at Nimitz Beach.

Other pillbox designs are found scattered around O'ahu, including ex-NASBP, which do not appear to have been built in large quantities as the square mass-produced types. An entirely different design with larger embrasures was utilized on Maui during WWII in concert with the square type pillbox. The Maui version did not afford its occupants much in the way of protection from direct or indirect fire, and appeared to be more of an observation post, although placed in tactical positions.



WWII pillbox located at Waiehu, Maui (Photo courtesy of Forest and Kim Starr©)

Site No. 50-30-01-2008, -2050: Concrete box related to Site 01-2050. Writer has no expertise regarding WWII fuel delivery systems, no comment possible.

Site No. 50-30-01-2013: Concrete piers, metal gun turret. No photograph or thorough description provided with regards to the metal gun turret. See the following general comment:

General Comment:

The writer examined one turreted pillbox associated with a WWII Army Air Forces airfield at Dillingham Airfield, Kawaihāpai, O'ahu location of the former Mokuleia AAF. The turret was part of the defenses of the airfield, mass produced by the Blaw-Knox Company of Pittsburgh, Pennsylvania, used in defense of aerodromes and other army bases, as well as the following Navy facilities known to the author: Lualualei Naval Radio Station (NRS) located on the Leeward side of O'ahu and Eastern Island at Midway Atoll, site of a former Navy airfield.

The pillbox was cylindrical shaped with a riveted steel plate body and an armored cast metal turret or cupola affixed to the top, which rotated by means of a hand crank wheel. It was equipped with one firing embrasure capable of being closed.

It was entered by means of a circular cut out at the rear; a round corrugated metal tube fastened to the structure enabled the occupant to crawl through from an above ground entrance. The majority of the body was placed in an excavation with the cupola extending above ground.

The writer is not familiar with the caliber or type of weapon used in the cupola; typical WWII concrete pillboxes in the Hawaiian Archipelago were outfitted with Browning .30 caliber water-cooled machine guns, however, the cramped space in the turret may have had room for an automatic rifle such as a Browning cal. 30 automatic rifle (BAR).

Examples of the turreted metal pillbox found on the Island of O'ahu are depicted below.



Turret pillbox at the former Mokuleia AAF, Kawaihāpai, O'ahu. Note structure had been removed from its defensive position. Circular entry at rear of the body shown. Pillbox was relocated to another location by the State Airports Division, Dept. of Transportation. (Photo by author)



Hand crank wheel that traversed the above pictured turret. (Photo by author)



Photo shows the closed firing embrasure of an example found outside the security fence at the former Lualualei NRS. (Photo by author)

Site No. 50-30-05-2028: Concrete structure (1), wooden structure (2) reported to have been a gun emplacement. No photograph or description furnished. Specific comment about the emplacement is not possible due to insufficient information regarding the structure.

Site No. 50-30-05-2047: Concrete structures (2) reported to have been a gun emplacement, No photograph or description furnished. Specific comment is not possible due to inadequate description regarding the structure. See general comment that follows.

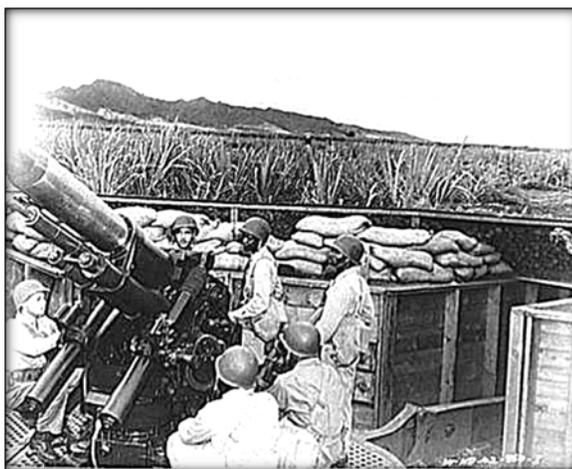
General Comment:

Army Air Forces airfields, including NASBP, on O'ahu were protected by antiaircraft automatic weapons (AW) batteries armed with 37 and later by 40 mm AWs supplemented by Browning .50 caliber antiaircraft machine guns (AAMG). It is thought that this manner of defense extended to military airfields on the outer islands.

The AW batteries were manned prior to December 1943 by batteries attached to Coast Artillery AA Regiments, which were redesignated as Anti-Aircraft Gun and Automatic Weapons Batteries. Gun batteries were armed with 90 and 120 mm AA guns, and AW batteries with 40 mm automatic weapons. Both were also equipped with Browning water-cooled antiaircraft machine guns (AAMG) for close in protection.



Soldiers of the 369th Coast Artillery (AA) Regiment man a .50 caliber AAMG in defense of an airfield on the north shore of O'ahu c. 1942-43. (Library of Congress photo)



Men of the 369th man a 3-inch/50 caliber AA gun in a Central O'ahu field c. 1942. The guns were shortly replaced by 90 mm AA guns. (Library of Congress photo)

The writer examined three AW gun emplacements at Kualoa Ranch on the Windward Coast of O'ahu, site of the former WWII Kualoa AAF. Several examples have been identified at the former NASBP, which have been registered with the *Historic American Buildings Survey/*Historic American