U.S. MARINE CORPS BASE, KANEOHE BAY, TORPEDO STORAGE BUILDINGS
(Building Nos. 106, 120, 313, 610, 612, and 165)
Mokapu Peninsula
Kaneohe
Honolulu County
Hawaii

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN BUILDINGS SURVEY
PACIFIC WEST REGIONAL OFFICE
National Park Service
U.S. Department of the Interior
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HISTORIC AMERICAN BUILDINGS SURVEY

U.S. MARINE CORPS BASE HAWAII, KANEOHE BAY, TORPEDO STORAGE BUILDINGS

HABS No. HI-311-~~F~~ O

Location: The six torpedo storage buildings (106, 120, 313, 610, 612, and 615) are located on the Mōkapu Peninsula on the windward side of O'ahu, Hawai'i, on present-day Marine Corps Base (MCB) Hawaii, Kaneohe Bay at ~~latitude~~ longitude -157.76.36630, ~~longitude~~ latitude 21.439466 (Building 106); ~~latitude~~ longitude -157.76.32930, ~~longitude~~ latitude 21.440153 (Building 120); ~~latitude~~ longitude -157.76.55850, ~~longitude~~ latitude 21.446906 (Building 313); ~~latitude~~ longitude -157.77.72550, ~~longitude~~ latitude 21.447220 (Building 610); ~~latitude~~ longitude -157.77.15300, ~~longitude~~ latitude 21.450562 (Building 612); and ~~latitude~~ longitude -157.76.36290, ~~longitude~~ latitude 21.449296 (Building 615). The coordinates represent the center of each building. The coordinates were obtained on 2 October 2012 by plotting the location of each building on the 1:24000 scale Mokapu USGS topographic quadrangle map. The accuracy of the coordinate is +/-12 meters. The coordinate's datum is North American Datum 1983 (NAD 83)_High Accuracy Reference Network (HARN)_Hawaii State Plane Zone#3_distance units: meters_FIPS_5103. The locations of the six torpedo storage buildings are restricted pending concurrence of the owner to release the building locations to the public. MCB Hawaii is located near the town of Kāne'ohe, Hawai'i.

Present Owner: United States Marine Corps

Present Use: Storage (106, 120, 313, and 614) and Vacant (610 and 612)

Significance: The six torpedo storage buildings at MCB Hawaii are associated with three major themes in American military history. First, the six buildings are part of the U.S. military and economic expansion into the Pacific region starting in the 1930s and early 1940s to counter the Japanese Empire. Second, the storage buildings are part of the Navy's munitions infrastructure that developed during World War II to field the Consolidated Patrol Boat Y (PBY) Catalina and other patrol bombers to maintain control of the shipping lanes of the Pacific. Finally, the design of the storage buildings represents the shift in construction materials and design of the U.S. Navy in Hawai'i after the Japanese attack on 7 December 1941 to splinterproof buildings whose designs differed from those of prewar torpedo storage buildings and from the standard naval torpedo designs used elsewhere.

Historians: Edward Salo, Ph.D., and Geoffrey Mohlman, M.A., Southeastern Archaeological Research, Inc. (SEARCH), October 2012.

Project Information: The Historic American Buildings Survey team for this project included Geoffrey Mohlman, M.A., and Edward Salo, Ph.D., both of whom work for SEARCH, and David Franzen. Mohlman and Salo served as the historians for the project, and Franzen served as the photographer. Measured drawings were collected from the Facilities Department at MCB Hawaii. The reduced copy of the 14th Naval District, Kaneohe Bay, T.H., "Kaneohe Bay—T.H., Torpedo Storage Bldg, Plan & Elevations Details, March 11, 1942" that is included on page 24 is on file at the Facilities Department at MCB Hawaii. The work was done as mitigation of adverse effects to Building 615, a former torpedo storage building, associated with MILCON Project P-822 for the construction of a Marine Corps Air Station (MCAS) Operations Complex and Aircraft Fire and Rescue Station (AFRS). Five other torpedo storage buildings similar in design to Building 615 presently exist at MCB Hawaii: Buildings 106, 120, 313, 610, and 612. Buildings 313 and 612 are also slated for demolition with funding provided by the Facilities, Sustainment, Restoration, and Modernization program. All six buildings (106, 120, 313, 610, 612, and 615) are being documented as they were constructed as torpedo storage buildings in 1942. The mitigation work was done in accordance with the *Memorandum of Agreement with the Hawaii State Historic Preservation Department and the Marine Corps Base Hawaii*, in accordance with Contract N62742-09-D-1960, Task Order Number 0017, issued by Naval Facilities Engineering Command, Pacific, to SEARCH.

Part I. Historical Information

A. Historical Context

Introduction

The construction of the torpedo storage buildings at MCB Hawaii is associated with three major themes in American military history. First, the buildings are part of the U.S. military and economic expansion into the Pacific region starting in the 1930s and early 1940s to counter the Japanese Empire. Second, the storage buildings are part of the Navy's munitions infrastructure that developed during World War II to field the Consolidated PBY Catalina and other patrol bombers to maintain control of the shipping lanes of the Pacific. Finally, the design of the storage buildings represents the shift in construction materials and design of the U.S. Navy in Hawai'i after the Japanese attack of 7 December 1941 to splinterproof buildings whose designs differed from those of prewar torpedo storage buildings and from the standard naval torpedo designs used elsewhere. Since World War II, the torpedo storage buildings have been utilized

for other purposes by the Navy and the Marines, and have received several minor alterations to meet the new purposes.

Expanding the U.S. Naval Bases in the Pacific, 1930–1939

During the 1930s, the Empire of Japan initiated both economic and military expansion within the Pacific Rim in hopes of creating a greater sphere of influence within the region. This expansion, known first as the New Order in East Asia (東亜新秩序), and later as the Greater East Asia Co-Prosperity Sphere (大東亜共栄圏), culminated in 1937 with Japan's invasion of mainland China, an ally of the United States. The U.S. government, seeing threats to its strategic partners in Asia from the expansion of Japan, began revising its basic war plan for the region and planning for new bases in the region.[1] In July 1938, Secretary of the Navy Charles Edison appointed Admiral Arthur J. Hepburn, former commander in chief of the fleet, to chair a board to review American defenses in the Pacific and make recommendations of how they might be strengthened.[2]

Hepburn was uniquely qualified to chair the board to examine the defenses of the Pacific. He graduated from the Naval Academy in 1897 and served on the battleship *Iowa* during the Spanish-American War. After that war, Hepburn assisted in oceanic surveys in the Pacific during the 1900s and served on several ships during World War I. He then served as head of U.S. Naval Intelligence in the late 1920s. Between June 1932 and July 1933, he served as a naval member to the three-power Limitations of Arms Conference as naval adviser to the Geneva Delegation in Switzerland and to the American Representative at the London Naval Conference. At the culmination of his career, Hepburn served as commander-in-chief of the U.S. fleet in 1936.[3] These experiences allowed Hepburn to understand the strategic importance of bases in the Pacific.

The Hepburn Board quickly but methodically reviewed the existing Naval War Plans for the Pacific (War Plan ORANGE) and other documents from various naval bureaus to determine the needs of the United States in protecting the Pacific. Regarding the review process, Hepburn stated, "I would say that every item that the board has suggested has been considered in the past some time by one department or another or by the Joint Board involved, and they have

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[1] See Edward Miller, *War Plan Orange: The U.S. Strategy to Defeat Japan, 1897–1945* (Annapolis, MD: U.S. Naval Institute Press, 2007).

[2] Bureau of Yards and Docks, *Building the Navy's Bases in World War II: History of the Bureau of Yards and Docks and the Civil Engineer Corps, Volume 1* (Washington, D.C., U.S. Government Printing Office, 1947), 4.

[3] U.S. Naval History and Heritage Command, "Hepburn," electronic document, http://www.history.navy.mil/danfs/h5/hepburn.htm.

been put down as projects to be attained when they can get the money."[4] In December 1938, the Hepburn Board submitted its final report to Congress, which recommended:

> the establishment of new air bases and the expansion of existing bases to provide three major air bases on each coast, one in the Canal Zone, and one in Hawaii; with outlying operating bases in the West Indies, Alaska, and our Pacific island possessions. The board also recommended that the naval air training station at Pensacola be greatly enlarged and that possibly an additional air training station be established at Corpus Christi, Texas; new submarine bases be established in Alaska and the mid-Pacific area, and several existing stations be improved or retained. Some additional facilities were suggested for the existing destroyer bases at Philadelphia and San Diego. No new mine bases were considered necessary, but certain deficiencies were noted in existing bases. A general priority schedule was set up, based on the necessity for providing facilities when the ships and aircraft authorized by the Vinson bill would be completed. In addition, there was a list of projects, considered to be of immediate strategic importance, which should be undertaken at the earliest practicable date. These items were: (1) improvement of air facilities at Kaneohe Bay, Hawaii; (2) submarine and air bases at Wake Island, Midway Island, and Guam; (3) air facilities at Johnston Island and Palmyra Island; (4) air and submarine bases at Kodiak and Sitka; and (5) submarine facilities at San Juan, Puerto Rico.[5]

The report was met with excitement by the U.S. public and political leaders. The *New York Times* called the report "the most complete ever written so far as the navy, air and submarine defenses of the nation are involved."[6] While the Hepburn Board determined that Guam, already surrounded by Japanese possessions, probably could not be defended by the United States, it stressed the importance of the islands of Midway, Wake, Johnston, and Palmyra. The board also recommended the development of a naval air base at Kāne'ohe Bay on O'ahu for five patrol squadrons to relieve overcrowding of aircraft at Ford Island, Pearl Harbor (the only permanent naval air station in Hawai'i).[7]

The Navy's plan for expansion of its bases was part of a larger mobilization of the American economy for war, which began in 1939, picked up sharply in mid-1940 after the Germans

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[4] Arthur Hepburn quoted in Public Works Authorization Act. H.R. Committee on Naval Affairs Hearings, 76th Congress, 1st Session, 26 January 1939, p. 94; Bureau of Yards and Docks, *Building the Navy's Bases in World War II, Volume I*, 4.

[5] Bureau of Yards and Docks, *Building the Navy's Bases in World War II, Volume 1*, 4

[6] *New York Times*, "Navy Board Urges 41 Defense Bases for Entire Nation," 4 January 1939.

[7] *New York Times*, "Island Defense Plans Alter Pacific Picture," 12 February 1939.

overran Western Europe, and finally achieved real efficiency in 1943.[8] The U.S. Congress authorized $5.8 million for the construction of the base at Kāne'ohe Bay on 25 April 1939.[9] Later that year, on 5 August 1939, the Navy signed the contract for the construction of a new naval air station at Kāne'ohe, on the northern shore of O'ahu, as well as the expansion of the existing air base on Ford Island and the construction of naval air facilities on Midway, Johnston, and Palmyra islands, at a total cost of $15.5 million.[10] By 1941, Congress passed another $186 million for the expansion of naval bases in the Pacific, including the continued expansion of Naval Air Station (NAS) Kaneohe Bay.[11]

Naval construction of NAS Kaneohe Bay, as well other construction projects in Hawai'i and the American islands of the Pacific, was conducted by Contractors Pacific Naval Air Bases (CPNAB) and was part of "the most stupendous building program ever undertaken in history."[12] Seeing the large scale of the construction work the Navy needed in the Pacific, and knowing that no one company was capable of it, a consortium of three construction companies, each a specialist in its own field, combined to design and construct defense installations in the Pacific Ocean area, including the islands of Hawai'i, Wake, Johnston, and Midway. CPNAB's cost-plus-a-fixed fee contract, NOy-4173, began with a capacity of $31 million and expanded to over $200 million.[13] Because of the size of the projects, CPNAB subcontracted with the renowned industrial architectural firm Albert Kahn Associates to design facilities, and brought in Morrison-Knudsen Company, which constructed the Hoover Dam, as contractor.[14]

Initial Construction of NAS Kaneohe Bay, 1939–1941

As originally planned, NAS Kaneohe Bay was designed to be a seaplane base with facilities to support five patrol squadrons. CPNAB commenced construction in September 1939, under the Pacific Naval Air Base contract, on forty-two projects at the new base. The major project entailed extensive dredging operations to provide the necessary seaplane runways within the sheltered waters of Kāne'ohe Bay. Dredging continued for three years, during which time 11 million cubic yards of material were removed.[15]

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[8] John W. Jeffries, "Part One: Mobilization and Its Impact," in *World War II and the American Home Front: A National Historic Landmarks Theme Study* (Washington, D.C., The National Historic Landmarks Program, 2007), 10.

[9] Bureau of Yards and Docks, *Building the Navy's Bases in World War II, Volume 1,* 28.

[10] Bureau of Yards and Docks, *Building the Navy's Bases in World War II: History of the Bureau of Yards and Docks and the Civil Engineer Corps, Volume 2* (Washington, D.C., U.S. Government Printing Office, 1947), 121.

[11] Bureau of Yards and Docks, *Building the Navy's Bases in World War II, Volume 1,* 34.

[12] Joseph Garner Anthony, *Hawaii Under Army Rule* (Honolulu: University of Hawaii Press, 1975), 3.

[13] Anthony, *Hawaii Under Army Rule*, 3; Bureau of Yards and Docks, *Building the Navy's Bases in World War II, Volume 2*, 121.

[14] Steve Spiller, "An Island Worth Defending," presentation to the Redlands Fortnightly Meeting, #1748, electronic document, http://www.redlandsfortnightly.org/papers/spiller07.html.

[15] Bureau of Yards and Docks, *Building the Navy's Bases in World War II, Volume 2,* 138.

The Navy had initially considered two sites within Kāne'ohe Bay for the new air base: Libbyville on the shore of Kāne'ohe Bay, and the Mōkapu Peninsula. The Commander of Patrol Wing Two, based at Pearl Harbor, argued that the west side of Mōkapu, Heleloa, had the necessary waterfront area to develop a base, as well as the open space needed for the construction of base buildings. Finally, the Heleloa tract also allowed the Navy future expansion of the base and the runways.[16]

On 10 August 1939, the Navy acquired 553 acres of land from the Mokapu Land Company and other owners for the new air station. The area was quickly added to when a second tract of land of 33.9 acres was acquired on 8 September 1939. The CPNAB first constructed temporary wooden structures to house the workers, and then began building the aircraft hangars, administration buildings, recreation facilities, warehouses, housing, and mess halls.[17] Mōkapu Peninsula had already had been used by the U.S. military before the construction of the new base. In 1918, the U.S. Army occupied approximately 322 acres on the eastern side of the peninsula for military use. The base was likely named Fort Kuwa'ahoe Military Reservation, and the base was deactivated sometime after the war. During the buildup for World War II, the United States reactivated the former Fort Kuwa'ahoe as Camp Ulupau in 1941, and redesignated it Fort Hase the next year.[18]

By the fall of 1941, NAS Kaneohe Bay contained approximately ninety permanent concrete, masonry, and steel facilities and sixty temporary wooden facilities, and 465 acres had been added to the base. Among those new facilities constructed to support the patrol aircraft were:

- five steel hangars,
- five seaplane ramps,
- concrete parking areas,
- two warm-up aprons,
- a maintenance hangar,
- two seaplane hangars, and
- two Midway-type hangars.

The Navy also prepared a torpedo workshop (Building 202), a bombsight workshop (Building 203), and thirty magazines for the storage of bombs, torpedoes, and small arms.[19] The PBY was capable of carrying 4,000 pounds of bombs, depth charges, or torpedoes, so the storage of large amounts of armaments was necessary. The pre-Japanese attack buildings at NAS Kaneohe Bay, including the hangars, torpedo storage, administration buildings, and bachelors' quarters,

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[16] Mason Architects, "World War II Resources of U.S. Naval Air Station, Kaneohe Bay," National Register of Historic Places Multiple Property Documentation Form, E-2.

[17] Mason Architects, "World War II Resources of U.S. Naval Air Station, Kaneohe Bay," E-3.

[18] Mason Architects, "World War II Resources of U.S. Naval Air Station, Kaneohe Bay," E-2.

[19] Bureau of Yards and Docks, *Building the Navy's Bases in World War II, Volume 2,* 138–139.

were mostly designed by Albert Kahn and reflected his industrial style. Kahn was best known for his industrial buildings, including the Ford River Rouge Plant in Dearborn, Michigan, and over 521 factories in the Soviet Union.[20] The Kahn firm also designed standard plans for aircraft hangars as well as aircraft and tank factories.[21] It should be noted that the prewar facilities not designed by Kahn still employ many of the same simple characteristics of Kahn's designs.[22]

PBYs and NAS Kaneohe Bay

The reason for the construction of the naval air station at Kāne'ohe Bay was to house several squadrons of naval patrol aircraft, primarily the Consolidated PBY Catalina that would be used to patrol the shipping lanes of the Pacific. The Catalina's long range (over 3,100 miles) and ability to carry 4,000 pounds of bombs or torpedoes made it a valuable weapon to the Navy in the Pacific because it could conduct reconnaissance, antisubmarine warfare, search and rescue, and escort conveys. In fact, during 1942, the PBY and the B-17 Flying Fortress were the only long-range aircraft that the United States operated in the Pacific. The PBY Catalina was designed in the early 1930s to serve as a patrol aircraft to locate and attack enemy transports and shipping. During the war, over 4,000 PBYs were constructed and used in all theaters of operations of maritime patrol, antisubmarine warfare, night attack, and search-and-rescue. It was a PBY Catalina that identified the Japanese Fleet during the Battle of Midway, and the Black Cat Squadron PBYs performed nighttime search-and-attack missions using state-of-the-art radar. After World War II, the PBY continued to serve the navies of the United States and its allies until the 1970s. It was also used as an aerial water bomber by the U.S. Forest Service.[23]

Attack of 7 December 1941 and NAS Kaneohe Bay

By the end of 1941, the Navy had based the Patrol Wing 1, a portion of the Scouting Force for the Pacific at NAS Kaneohe Bay, under then-Commodore Patrick Bellinger. On Sunday morning, 7 December 1941, two waves of Japanese Imperial Navy aircraft attacked NAS Kaneohe Bay. The first wave occurred before the attack on Pearl Harbor, and the second wave took place after Pearl Harbor was attacked. Of the thirty-six PBY Catalina "flying boats" based at NAS Kaneohe Bay, twenty-seven of thirty-three on the ground or moored in Kāne'ohe Bay were destroyed. Only three planes that were on patrol survived the attack, although they did sustain

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[20] *Time*, "Industry's Architect," 29 June 1942.

[21] Aubin Leroy, "Entre L'usine et la villa Les archives d'Albert Kahn a la Bentley Historial Library," electronic document, http://bentley.umich.edu/academic/france/kahn_essay.pdf.

[22] Mason Architects, "World War II Resources of U.S. Naval Air Station, Kaneohe Bay," E-3.

[23] Mel Crocker, *Black Cats and Dumbos: WWII's Fighting PBYs* (Blue Ridge Summit, PA: AERO, 1987); Louis B. Dorny and Jim Laurier, *U.S. Navy PBY Catalina Units of the Pacific War* (Oxford: Osprey, 2007); Bill Yenne and John H. Batchelor, *Seaplanes of the World: A Timeless Collection from Aviation's Golden Age* (Cobb, CA: First Glance Books, 1997).

air-to-air combat damage from the Japanese forces.[24] The United States suffered eighteen deaths and sixty-nine wounded at NAS Kaneohe Bay. NAS Kaneohe Bay defenders did manage to shoot down two Japanese planes, and U.S. Navy Ordnanceman John W. Finn, who was wounded during the attacks, later was awarded the Medal of Honor for his heroic actions.[25] Commodore Bellinger was responsible for the message, "Air raid, Pearl Harbor. This is no drill," which was the first notice to the outside world of the attack. After the attack, Bellinger survived the purge of officers, probably because he had co-authored a report with Air Corps General Fredrick L. Martin, warning of the possibility of an air attack on Pearl Harbor.[26]

Construction of the Torpedo Storage Buildings

Immediately following the Japanese attack, the ongoing CPNAB construction contracts were interrupted to repair damaged buildings and to assist the 14th Naval District with a new defensive construction program that was necessary to counter any future attacks or invasion of the islands.[27] The Navy constructed fifty plane revetments (only Facilities 14, 15, and 17 remain) to protect aircraft on the ground from air attacks. The Navy also shifted its design and construction methods to develop other protective buildings, or to harden existing buildings or structures at the base.[28] Cultural resource documentation of resources at Pearl Harbor indicates that

> the erection of protective buildings [such as the torpedo storage buildings at NAS Kaneohe Bay] was a direct response to the December 7, 1941 attack, and Pacific coast military installations are the only known locations of these categories of construction. Further air raids by the Japanese were expected and facilities, termed splinterproof, were built to protect personnel from bullets, bomb fragments or other material from explosions.[29]

The new splinterproof structures had concrete walls approximately 15" thick and could protect against fragments from 500-pound bombs that exploded 50' away. The splinterproof air-raid

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[24] Naval History and Heritage Command, "Pearl Harbor Raid, 7 December 1941. Naval Air Station, Kaneohe Bay, during the Pearl Harbor Raid," electronic document, http://www.history.navy.mil/photos/events/wwii-pac/pearlhbr/ph-kan.htm.

[25] USMC Base Hawaii, "Historic Tour and Guide," electronic document, http://www.mcbh.usmc.mil/tour/mokapu/Mokapu_military2.htm.

[26] Kent Budge, "Bellinger, Patrick Nieson Lunch," The Pacific War Online Encyclopedia, electronic document, http://pwencycl.kgbudge.com/B/e/Bellinger_Patrick_L.htm.

[27] "Technical Report and Project History Contracts NOy-3550 and NOy-4173," 1945: A-545; quoted in Wil Chee Planning, Helber Hastert & Fee, and Mason Architects, *Historic Context and Building Inventory Marine Corps Base Hawaii* (Prefinal) (2012), 43.

[28] Bureau of Yards and Docks, *Building the Navy's Bases in World War II, Volume 2,* 139.

[29] HABS, "U.S. Naval Base, Pearl Harbor, Splinterproof Air Raid Shelters, Various Locations throughout Base, Pearl City, Honolulu County, HI, HABS HI-390," electronic document, http://www.loc.gov/pictures/item/hi0643/.

shelters that appeared all over the islands were designed to protect against the "splinter" effect created by shrapnel fragments and debris. The splinterproof buildings also provided protection from machinegun fire and other smaller projectiles.[30]

New splinterproof and bombproof buildings were built at all Navy installations, including NAS Kaneohe Bay, in preparation for a possible follow-up attack. Extant examples of this program include a splinterproof Transformer Station (Building 590) and several splinterproof shelters (Buildings 538, 540, and 545–548). Additional changes and revisions were made to CPNAB contracts at NAS Kaneohe Bay in response to available materials. "In order to conserve critical materials, the later buildings—i.e., specifically the personnel facilities [at NAS Kaneohe Bay]—were constructed of wood instead of the originally-planned concrete."[31]

In addition to the new air-raid shelters and plane revetments, the 14th Naval District designed eight new torpedo storage buildings in March 1942. It appears that the new torpedo storage buildings were constructed by CPNAB.[32] However, CPNAB noted that "local Navy and Marine Corps forces assisted the contractors in producing these emergency facilities."[33]

The prewar torpedo storage building (Building 202) was a one-story, concrete and steel building approximately 70' x 100' with a height of 29'. Building 202, which was very similar in design to Albert Kahn's other industrial buildings, had a tall central mass, with a low-slope gable roof, flanked by lower lean-to buildings on the east and west. The new torpedo storage buildings differed in design, materials, and location from the prewar torpedo storage building (Building 202). The post-attack torpedo storage buildings were smaller in scale, were less ornate in design elements, and were scattered around the base, probably to protect them from future attacks. The buildings were one-story rectangular concrete buildings with dimensions of 17' x 77' and a height of 10'. Each building had a flat roof covered in asphalt with steel doors as the main opening. The new storage buildings had steel sash, steel angle louvers and a rolled coral floor.[34] An informal study of Navy cultural resources management personnel indicated

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[30] Mason Architects, *Historic Context Report and Historic Preservation Plan for World War II Defense Accessory Facilities. Building Types Assessment: Splinterproof Shelters and Gun Emplacements,* prepared for Commander, Navy Region Hawaii and NAVFAC Pacific (November 2004), 1.3–35; Karl C. Dod, *The Corps of Engineers: The War Against Japan* (Office of the Chief of Military History, Washington, D.C., 1966), 345.

[31] "Technical Report and Project History Contracts NOy-3550 and NOy-4173," 1945: A-545, quoted in Wil Chee Planning, Helber Hastert & Fee, and Mason Architects, *Historic Context and Building Inventory Marine Corps Base Hawaii* (Prefinal), 43.

[32] Fourteenth Naval District, Pearl Harbor, T.H., Bureau of Yards and Docks, Torpedo Storage Building, Plan and Elevations, Details, March 11, 1942, 14 N.D. drawing no. OAN6-325.

[33] "Technical Report and Project History Contracts NOy-3550 and NOy-4173," n.d.: A-1197, quoted in Mason Architects, *Historic Context Report and Historic Preservation Plan for World War II Defense Accessory Facilities*, 1.3–2.

[34] Mason Architects, "Naval Air Station Kaneohe Bay Aviation District, Honolulu, Hawaii," National Register of Historic Places Nomination Form, 7:6.

that no other World War II-era torpedo storage buildings were similar in design to the ones at NAS Kaneohe Bay.[35]

After the attack, the Navy quickly expanded the base. The fleet stationed five seaplane patrol squadrons and several land-based patrol squadrons at NAS Kaneohe Bay. From 1942 to 1945, sixty-four patrol, three photo-reconnaissance, and six search-and-rescue squadrons operated out of NAS Kaneohe Bay. The base also supported ninety carrier aircraft from Carrier Air Service Unit (CASU) 1A and CASU 38. The Navy also operated an air bomber training unit that trained gunners for the bomber fleet, as well as a school for celestial navigation and other patrol aircraft at NAS Kaneohe Bay.[36]

After the Battle of Midway in June 1942, the naval combat arenas moved west to other Pacific islands, and the role of bases in Hawai'i became focused on supply, repair, and training. The Seabees arrived in mid-1943 and replaced CPNAB. The Seabees constructed a new bombproof powerhouse and an electrical-distribution system that included fourteen concrete substations as well as other support buildings. In February 1944, the Seabees constructed a second runway, measuring 400' x 5,000'. It appears the SeaBees also constructed two other partially underground one-story torpedo storage facilities (Buildings 571 and 572) that were also different from the 1942-era buildings. The 1944-era storage facilities were steel temporary structures with a concrete foundation. The new facilities were 25' x 50' and 12' in height, and had a central opening of double metal swinging doors.[37] There was no indication of why the new buildings were constructed; however, because Hawai'i was no longer under threat of attack, the buildings lacked the splinterproofing of the 1942-era buildings.

After World War II, the Navy decommissioned and closed NAS Kaneohe Bay. All property (except buildings) was transferred to NAS Barbers Point. In the early 1950s, the Marine Corps saw the Mōkapu Peninsula as a perfect home for an air-to-ground combat unit. On 15 January 1952, MCAS Kaneohe Bay was commissioned, to encompass all of what had been NAS Kaneohe Bay and Fort Hase. The next year it became home to the First Marine Expeditionary Brigade, and it continues to be an important part of the Marine Corps presence on the island.[38] While the 1942-era torpedo storage buildings were no longer needed for torpedoes for PBYs, the Marines used the buildings for other storage purposes and did several small alterations to the buildings.

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[35] E-mail communication with Darrell Cook, NAVFAC Atlantic Architectural Historian; Michelle Michael, NAVFAC Southeast Architectural Historian; Heather McDonald, NAVFAC Mid-Atlantic Architectural Historian; and Jeffrey Dodge, NAVFAC Hawaii Historic Architect.

[36] M. L. Shettle, *United States Naval Air Stations of World War II, Volume 2: Western States* (Bowersville, GA: Schaertel Publishing Company, 1995), 111.

[37] Mason Architects, "Naval Air Station Kaneohe Bay Administration District," National Register of Historic Places Nomination Form, 7:7.

[38] USMC Base Hawaii, "Historic Tour and Guide."

B. Physical History

1. **Date(s) of construction:** 1942[39]

2. **Architect:** 14th Naval District[40]

3. **Original and subsequent owners, occupants, uses:** The six torpedo storage buildings were originally utilized by the U.S. Navy from 1942 to 1952. The buildings were transferred to the U.S. Marine Corps in 1952 and remain in its stewardship today. The buildings were used for torpedo storage from 1942 to the end of World War II in 1945. Presently, Buildings 106, 120, 313, and 615 are used for storage, and Buildings 610 and 612 are vacant.

4. **Builder/Contractor/Supplier:** Contractors Pacific Naval Air Bases (CPNAB)[41]

5. **Original plans and construction:** Following the Japanese attack on Hawai'i in December 1941, the 14th Naval District designed eight new torpedo storage buildings in March 1942 for NAS Kaneohe Bay, of which six torpedo storage buildings presently remain. Based on available historical documents, it appears that the new torpedo storage buildings were constructed by CPNAB.[42]

   Stripped of any ornamental design, the buildings were designed as one-story concrete rectangular buildings with dimensions of 17'-0" x 77'-0" feet and 10'-0" high. Each building had a flat built-up roof and had steel doors as the main opening on either end. The torpedo storage buildings had vent openings (windows) with steel angle louvers and a rolled coral floor.[43] The torpedo storage buildings were built parallel to the runway with their long side facing toward and the bay doors perpendicular to the runway. This layout further protected the contents of the buildings by having the concrete walls exposed to possible bomb shrapnel. Unlike most Navy ammunition storage facilities, which tend to be clustered in one or two areas on a base, the torpedo buildings at NAS Kaneohe Bay were scattered along the airfield to avoid a single-point attack on a centrally located torpedo facility.

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[39] Fourteenth Naval District, Pearl Harbor, T.H., Bureau of Yards and Docks, Torpedo Storage Building, Plan and Elevations, Details, March 11, 1942, 14 N.D. drawing no. OAN6-325.

[40] Fourteenth Naval District, Pearl Harbor, T.H., Bureau of Yards and Docks, Torpedo Storage Building, Plan and Elevations, Details, March 11, 1942, 14 N.D. drawing no. OAN6-325.

[41] Anthony, *Hawaii Under Army Rule*.

[42] Anthony, *Hawaii Under Army Rule*.

[43] Fourteenth Naval District, Pearl Harbor, T.H., Bureau of Yards and Docks, Torpedo Storage Building, Plan and Elevations, Details, March 11, 1942, 14 N.D. drawing no. OAN6-325.

6. **Alterations and additions:** All of the buildings have undergone some alterations, ranging from the replacement of the original steel angle louvers in the vent openings (windows) to lean-to additions. All of the buildings have had their original metal sliding doors replaced, and five (106, 120, 313, 610, and 615) have had their original rolled coral floors replaced by concrete. Three of the buildings (106, 120, and 313) have had one or more interior partition walls added, and two of the buildings (120 and 615) have had exterior lean-to additions. Building 612 has undergone the fewest alterations, with only the original metal sliding doors having been replaced with wood sliding doors, and one of the wood sliding doors subsequently removed.

   a. **Building 106**

      The original metal sliding doors on the narrow ends (north and south) of the building have been replaced with sliding wood doors. An additional vent opening (window) has been placed on the east and west sides. The original steel angle louvers in the vent openings (windows) have been replaced. Two mushroom ventilators with associated square holes in the roof have been added. For the interior, a recent concrete-masonry partition wall was added, and the original rolled coral floor has been replaced with poured concrete.

   b. **Building 120**

      The original metal sliding doors on the narrow ends (north and south) of the building have been replaced with sliding wood doors. A lean-to with a shed roof is attached to the west side, offset to the north. The original steel angle louvers in the vent openings (windows) have been replaced. For the interior, two recent partition walls were added, and the original rolled coral floor has been replaced with poured concrete.

   c. **Building 313**

      The original metal sliding doors on the narrow ends (north and south) of the building have been replaced with sliding wood doors. For the interior, a recent chain-link partition wall was added, and the original rolled coral floor has been replaced with poured concrete. Additionally, an I-beam has been attached to the center long axis of the ceiling.

   d. **Building 610**

      The original metal sliding doors on the narrow ends (north and south) of the building have been replaced with sliding wood doors. The original steel angle louvers in the vent opening (window) on the east side have been replaced. For

the interior, the original rolled coral floor has been replaced with poured concrete. The northern 20'-0" of the concrete floor is lowered by 2'-0" for vehicle entry.

e. Building 612

The original metal sliding doors on the narrow ends (northeast and southwest) of the building have either been replaced with a sliding wood door (southwest), or replaced and the replacement subsequently removed (northeast).

f. Building 615

The original metal sliding doors on the narrow ends (northeast and southwest) of the building have been replaced with sliding wood doors. A lean-to with a shed roof is attached to the northwest side. The lean-to is six bays wide by one bay deep. A strand of rolled barbed wire is attached along the top of the southeast elevation. For the interior, the original rolled coral floor has been replaced with poured concrete.

Part II. Architectural Information

A. Building 106

Built in 1942, Building 106, along with the other torpedo storage buildings, was designed as a splinterproof facility in response to the 7 December 1941 attack. In preparation for a possible Japanese follow-up attack, the Navy constructed such splinterproof facilities at all its Hawai'i installations.[44] Along with Building 120, Building 106 is located on the southwest end of D Street near Kāne'ohe Bay. Set parallel to D Street on the west side, Building 106 is in close proximity to the seaplane ramps (Buildings 1–5), Hangar 1 (Building 101), and the seaplane parking area to the east of Hangar 1. Along with other parts of the base, Hangar 1 was attacked by the Japanese on 7 December.[45] Made with 12"-thick reinforced concrete walls and a 12"-thick reinforced ceiling, Building 106 was designed to protect against fragments created from adjacent bomb impacts (the splinter effect) as well as to protect against machinegun fire and other small projectiles. Despite some minor alterations, the interior and exterior fabric is in good condition overall.

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[44] Mason Architects, *Historic Context Report and Historic Preservation Plan for World War II Defense Accessory Facilities*, 1.3–35; Environmental Compliance and Protection Department, Marine Corps Base Hawaii, Kaneohe Bay, Hawai'I, *Historic Building Inventory: World War II Era Buildings aboard Marine Corps Base Hawaii, Kaneohe Bay* (August 2011), 10; Wil Chee Planning, Helber Hastert & Fee, and Mason Architects, *Historic Context and Building Inventory Marine Corps Base Hawaii* (Prefinal), 43, 104.

[45] Mason Architects, "Naval Air Station Kaneohe Bay Aviation District, Honolulu, Hawaii," National Register of Historic Places Nomination Form, 7:4.

Building 106 is a utilitarian facility, stripped of architectural ornamentation on the interior and exterior. Having exterior measurements of 77'-0" x 17'-0", Building 106 is a one-story, rectangular concrete building capped by a built-up flat roof with a minimal overhang. Two nonhistoric metal mushroom ventilators pierce the roof (Photographs HI-311-D-24, HI-311-D-26, and HI-311-D-27). The walls and ceilings are made of reinforced cast-in-place concrete, and the form board impressions are still visible on the walls and ceiling. The narrow ends of the building (north and south) each have a nonhistoric metal sliding bay door (Photograph HI-311-D-25). Asphalt driveways that connect to D Street lead to the bay doors. Two narrow vertical sections of cast concrete project from the northwest and southeast corners of the building to protect the edge of the sliding doors when closed. Originally having a single vent opening (window) on either side of the building, presently a pair of vent openings (windows) puncture both long (east and west) sides of the building (Photographs HI-311-D-24, HI-311-D-26, HI-311-D-27, and HI-311-D-28). The original steel angle louvers in the vent openings have been replaced by U-shaped metal louvers. The building rests on a poured-concrete strip footing.

The building was originally designed with a single interior space that measured 75'-0" x 15'-0", and a concrete-masonry partition wall was added sometime before 2005. The original rolled coral floor had a crown in the center of the room that sloped toward the exterior doors. The replacement poured-concrete floor has this crown. No evidence was found regarding the original interior furnishings of the building, but it is assumed that the torpedoes rested on individual wood chocks that were located atop beams, either steel or wood based on other torpedo storage facility plans. None of the original interior utilitarian furnishings are extant, having been replaced with recent storage containers, metal wall hooks, and equipment. Nonhistoric fluorescent lights were added to the interior of the building but were not operational at the time of the field visit.

B. Building 120

Built in 1942, Building 120, along with the other torpedo storage buildings, was designed as a splinterproof facility in response to the 7 December 1941 attack. In preparation for a possible Japanese follow-up attack, the Navy constructed such splinterproof facilities at all its Hawai'i installations.[46] Along with Building 106, Building 120 is located on the southwest end of D Street near Kāne'ohe Bay. Set parallel to D Street on the west side, Building 120 is in close proximity to the seaplane ramps (Buildings 1–5), Hangar 1

[46] Mason Architects, *Historic Context Report and Historic Preservation Plan for World War II Defense Accessory Facilities*, 1.3–35; Environmental Compliance and Protection Department, *Historic Building Inventory: World War II Era Buildings aboard Marine Corps Base Hawaii, Kaneohe Bay*, 10; Wil Chee Planning, Helber Hastert & Fee, and Mason Architects, *Historic Context and Building Inventory Marine Corps Base Hawaii* (Prefinal), 43, 104.

(Building 101), and the seaplane parking area to the east of Hangar 1. Along with other parts of the base, Hangar 1 was attacked by the Japanese on 7 December.[47] Made with 12"-thick reinforced concrete walls and a 12"-thick reinforced ceiling, Building 120 was designed to protect against fragments created from adjacent bomb impacts (the splinter effect) as well as to protect against machinegun fire and other small projectiles. Despite some minor alterations, the interior and exterior fabric is in good condition overall.

Building 120 is a utilitarian facility, stripped of architectural ornamentation on the interior and exterior. The original core of Building 120 has exterior measurements of 77'-0" x 17'-0", and it is a one-story, rectangular concrete building capped by a built-up flat roof with a minimal overhang (Photographs HI-311-D-19, HI-311-D-20, and HI-311-D-22). The walls and ceilings are made of reinforced cast-in-place concrete, and the form board impressions are still visible on the walls and ceiling. The narrow ends of the building (north and south) each have a nonhistoric metal sliding bay door (Photographs HI-311-D-18 and HI-311-D-19). Small concrete pads are situated on the outside door openings. Two narrow vertical sections of cast concrete project from the northwest and southeast corners of the building to protect the edge of the sliding doors when closed. A single vent opening (window) pierces both exterior long walls (east and west), and the original steel angle louvers in the vent openings have been replaced by U-shaped metal louvers (Photograph HI-311-D-21). The building rests on a poured-concrete strip footing.

A nonhistoric lean-to addition has been added to the west elevation, offset to the east (Photograph HI-311-D-18). This lean-to measures 11'-8" x 13'-8" and has a shed roof supported by wood posts with angled wood brackets. The lean-to is two bays wide by one bay deep and is set on a slab foundation. Built sometime prior to 2000, the porch has been recently partially enclosed with tarps, metal screening, and plywood.

The building was originally designed with a single interior space that measured 75'-0" x 15'-0", and two wood-frame partition walls were added sometime after 2000 (Photograph HI-311-D-23). The original rolled coral floor had a crown in the center of the room that sloped toward the exterior doors. The replacement poured-concrete floor has this crown. No evidence was found regarding the original interior furnishings of the building, but it is assumed that the torpedoes rested on individual wood chocks that were located atop beams, either steel or wood based on other torpedo storage facility plans. None of the original interior utilitarian furnishings are extant, having been replaced with recent metal storage racks and equipment. Nonhistoric fluorescent lights were added to the interior of the building.

[47] Mason Architects, "Naval Air Station Kaneohe Bay Aviation District, Honolulu, Hawaii," National Register of Historic Places Nomination Form, 7:4.

C. Building 313

Built in 1942, Building 313, along with the other torpedo storage buildings, was designed as a splinterproof facility in response to the 7 December 1941 attack. In preparation for a possible Japanese follow-up attack, the Navy constructed such splinterproof facilities at all its Hawai'i installations.[48] Along with Building 615, Building 313 is located on the west side of B Street and north of Third Street. Set parallel to B Street, Building 313 is in close proximity to the airfield. Made with 12"-thick reinforced concrete walls and a 12"-thick reinforced ceiling, Building 313 was designed to protect against fragments created from adjacent bomb impacts (the splinter effect) as well as to protect against machinegun fire and other small projectiles. Despite some minor alterations, the interior and exterior fabric is in good condition overall.

Building 313 is a utilitarian facility, stripped of architectural ornamentation on the interior and exterior. Having exterior measurements of 77'-0" x 17'-0", Building 313 is a one-story, rectangular concrete building capped by a built-up flat roof with a minimal overhang (Photograph HI-311-D-13). The walls and ceilings are made of reinforced cast-in-place concrete, and the form board impressions are still visible on the walls and ceiling. The narrow ends of the building (north and south) each have a nonhistoric metal sliding bay door (Photographs HI-311-D-14 and HI-311-D-16). Small asphalt pads are situated on the outside door openings. Two narrow vertical sections of cast concrete project from the northwest and southeast corners of the building to protect the edge of the sliding doors when closed (Photograph HI-311-D-15). A single vent opening (window) pierces both exterior long walls (east and west), and the original steel angle louvers in the vent openings remain (Photographs HI-311-D-13 and HI-311-D-17). The building rests on a poured-concrete strip footing.

The building was originally designed with a single interior space that measured 75'-0" x 15'-0", and a wood-frame chain-link partition wall was added sometime after 2005. The original rolled coral floor had a crown in the center of the room that sloped toward the exterior doors. The replacement poured-concrete floor has this crown. No evidence was found regarding the original interior furnishings of the building, but it is assumed that the torpedoes rested on individual wood chocks that were located atop beams, either steel or wood based on other torpedo storage facility plans. None of the original interior utilitarian furnishings are extant, having been replaced with recent wood storage racks and equipment. No interior lights were visible. Additionally, an I-beam has been attached to the center long axis of the ceiling prior to 2005.

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[48] Mason Architects, *Historic Context Report and Historic Preservation Plan for World War II Defense Accessory Facilities*, 1.3–35; Environmental Compliance and Protection Department, *Historic Building Inventory: World War II Era Buildings aboard Marine Corps Base Hawaii, Kaneohe Bay*, 10; Wil Chee Planning, Helber Hastert & Fee, and Mason Architects, *Historic Context and Building Inventory Marine Corps Base Hawaii* (Prefinal), 43, 104.

D. Building 610

Built in 1942, Building 610, along with the other torpedo storage buildings, was designed as a splinterproof facility in response to the 7 December 1941 attack. In preparation for a possible Japanese follow-up attack, the Navy constructed such splinterproof facilities at all its Hawai'i installations.[49] Along with Building 612, Building 610 is located on the northwest side of the airfield at the western terminus of Perimeter Road. A revetment is located 6'-4" east of Building 610, between the torpedo storage building and the airfield (Photographs HI-311-D3 and HI-311-D4). Made with 12"-thick reinforced concrete walls and a 12"-thick reinforced ceiling, Building 610 was designed to protect against fragments created from adjacent bomb impacts (the splinter effect) as well as to protect against machinegun fire and other small projectiles. Despite some minor alterations, the interior and exterior fabric is in good condition overall.

Building 610 is a utilitarian facility, stripped of architectural ornamentation on the interior and exterior. Having exterior measurements of 77'-0" x 17'-0", Building 610 is a one-story, rectangular concrete building capped by a built-up flat roof with a minimal overhang (Photographs HI-311-D1, HI-311-D2, HI-311-D3, and HI-311-D5). The walls and ceilings are made of reinforced cast-in-place concrete, and the form board impressions are still visible on the walls and ceiling. The narrow ends of the building (north and south) each have nonhistoric doors, with the south end having a sliding bay wood door (Photograph HI-311-D5) and the north end having a double-leaf wood door (Photograph HI-311-D2). Unique to this building, a concrete ramp 11'-7" x 7'-11" flanked by poured-concrete walls 1'-6" high leads to the north bay door (Photograph HI-311-D1). Immediately adjacent (east) to the ramp is a concrete pad 14'-5" long x 7'-5" wide. Two narrow vertical sections of cast concrete project from the northwest and southeast corners of the building to protect the edge of the sliding doors when closed. A single vent opening (window) pierces both exterior long walls (east and west), and the original steel angle louvers in the vent opening remain on the west window (Photograph HI-311-D7). The original steel angle louvers in the east vent opening have been replaced by U-shaped metal louvers (Photograph HI-311-D8). The building rests on a poured-concrete strip footing.

The single interior space measures 75'-0" x 15'-0". The original rolled coral floor had a crown in the center of the room that sloped toward the exterior doors. The original floor was replaced by a poured-concrete floor. Unique to this building, the northern 20'-0" of the floor is approximately 2'-0" lower than the remaining 55'-0" (Photograph

[49] Mason Architects, *Historic Context Report and Historic Preservation Plan for World War II Defense Accessory Facilities*, 1.3–35; Environmental Compliance and Protection Department, *Historic Building Inventory: World War II Era Buildings aboard Marine Corps Base Hawaii, Kaneohe Bay*, 10; Wil Chee Planning, Helber Hastert & Fee, and Mason Architects, *Historic Context and Building Inventory Marine Corps Base Hawaii* (Prefinal), 43, 104.

HI-311-D6). Based on the associated exterior ramp on the north end of the building, it appears that that the floor was lowered to assist in vehicular or mechanical access to the building. No evidence was found regarding the original interior furnishings of the building, but it is assumed that the torpedoes rested on individual wood chocks that were located atop beams, either steel or wood based on other torpedo storage facility plans. None of the original interior utilitarian furnishings are extant (Photograph HI-311-D6). Nonhistoric fluorescent lights are affixed along power lines attached to the walls near the ceiling.

E. Building 612

Built in 1942, Building 612, along with the other torpedo storage buildings, was designed as a splinterproof facility in response to the 7 December 1941 attack. In preparation for a possible Japanese follow-up attack, the Navy constructed such splinterproof facilities at all its Hawai'i installations.[50] Along with Building 610, Building 612 is located on the northwest side of the airfield, south of Summer Road. A revetment is located 6'-0" east of Building 612, between the torpedo storage building and the airfield (Photograph HI-311-D10). Made with 12"-thick reinforced concrete walls and a 12"-thick reinforced ceiling, Building 612 was designed to protect against fragments created from adjacent bomb impacts (the splinter effect) as well as to protect against machinegun fire and other small projectiles. Despite some minor alterations, the interior and exterior fabric is in good condition overall.

Building 612 is a utilitarian facility, stripped of architectural ornamentation on the interior and exterior. Having exterior measurements of 77'-0" x 17'-0", Building 612 is a one-story, rectangular concrete building capped by a built-up flat roof with a minimal overhang (Photographs HI-311-D9 and HI-311-D11). The walls and ceilings are made of reinforced cast-in-place concrete, and the form board impressions are still visible on the walls and ceiling. The original metal sliding doors on the narrow ends (northeast and southwest) of the building have either been replaced with a sliding wood door (southwest) (Photograph HI-311-D11), or replaced and the replacement subsequently removed (northeast) (Photograph HI-311-D9). Two narrow vertical sections of cast concrete project from the north and south corners of the building to protect the edge of the sliding doors when closed. A single vent opening (window) pierces both exterior long walls (east and west), and the original steel angle louvers in the vent openings remain. The building rests on a poured-concrete strip footing.

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[50] Mason Architects, *Historic Context Report and Historic Preservation Plan for World War II Defense Accessory Facilities*, 1.3–35; Environmental Compliance and Protection Department, *Historic Building Inventory: World War II Era Buildings aboard Marine Corps Base Hawaii, Kaneohe Bay*, 10; Wil Chee Planning, Helber Hastert & Fee, and Mason Architects, *Historic Context and Building Inventory Marine Corps Base Hawaii* (Prefinal), 43, 104.

The single interior space measures 75'-0" x 15'-0". The original rolled coral floor had a crown in the center of the room that sloped toward the exterior doors. Unlike the other buildings, Building 612 retains an earthen floor, although no rolled coral flooring was present (Photograph HI-311-D12). No evidence was found regarding the original interior furnishings of the building, but it is assumed that the torpedoes rested on individual wood chocks that were located atop beams, either steel or wood based on other torpedo storage facility plans. None of the original interior utilitarian furnishings are extant, and no interior lighting is present (Photograph HI-311-D12).

F. Building 615

Built in 1942, Building 615, along with the other torpedo storage buildings, was designed as a splinterproof facility in response to the 7 December 1941 attack. In preparation for a possible Japanese follow-up attack, the Navy constructed such splinterproof facilities at all its Hawai'i installations.[51] Along with Building 313, Building 615 is located on the west side of B Street between Mokapu Road and 6th Street. Set parallel to B Street, Building 615 is in close proximity to the airfield. Made with 12"-thick reinforced concrete walls and a 12"-thick reinforced ceiling, Building 615 was designed to protect against fragments created from adjacent bomb impacts (the splinter effect) as well as to protect against machinegun fire and other small projectiles. Despite some minor alterations, the interior and exterior fabric is in good condition overall.

Building 615 is a utilitarian facility, stripped of architectural ornamentation on the interior and exterior. The original core of Building 615 has exterior measurements of 77'-0" x 17'-0", and it is a one-story, rectangular concrete building capped by a built-up flat roof with a minimal overhang (Photographs HI-311-D29 and HI-311-D32). The walls and ceilings are made of reinforced cast-in-place concrete, and the form board impressions are still visible on the walls and ceiling (Photograph HI-311-D33). The narrow ends of the building (northeast and southwest) each have a nonhistoric metal sliding bay door (Photographs HI-311-D30 and HI-311-D31). Small concrete pads are situated on the outside door openings. Two narrow vertical sections of cast concrete project from the north and south corners of the building to protect the edge of the sliding doors when closed. A single vent opening (window) pierces both exterior long walls (northeast and southwest), and both openings retain their original steel angle louvers (Photograph HI-311-D29). The building rests on a poured-concrete strip footing.

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[51] Mason Architects, *Historic Context Report and Historic Preservation Plan for World War II Defense Accessory Facilities*, 1.3–35; Environmental Compliance and Protection Department, *Historic Building Inventory: World War II Era Buildings aboard Marine Corps Base Hawaii, Kaneohe Bay*, 10; Wil Chee Planning, Helber Hastert & Fee, and Mason Architects, *Historic Context and Building Inventory Marine Corps Base Hawaii* (Prefinal), 43, 104.

A nonhistoric lean-to addition has been added to the northwest elevation (Photograph HI-311-D-32). This lean-to measures 50'-0" x 11'-10" and has a shed roof supported by wood posts with angled wood brackets. Built sometime prior to 2000, the lean-to is six bays wide by one bay deep and is set on a slab foundation.

The single interior space measures 75'-0" x 15'-0". The original rolled coral floor had a crown in the center of the room that sloped toward the exterior doors. The replacement poured-concrete floor has this crown. No evidence was found regarding the original interior furnishings of the building, but it is assumed that the torpedoes rested on individual wood chocks that were located atop beams, either steel or wood based on other torpedo storage facility plans. None of the original interior utilitarian furnishings are extant, having been replaced with recent metal storage cabinets and equipment (Photograph HI-311-D-34). No interior lighting is present.

Part III. Significance

The six torpedo storage buildings at MCB Hawaii are associated with three major themes in American military history. First, the six buildings are part of the U.S. military and economic expansion into the Pacific region starting in the 1930s and early 1940s to counter the Japanese Empire. Second, the storage buildings are part of the Navy's munitions infrastructure that developed during World War II to field the Consolidated PBY Catalina and other patrol bombers to maintain control of the shipping lanes of the Pacific. Finally, the design of the storage buildings represents the shift in construction materials and design of the U.S. Navy in Hawai'i after the 7 December 1941 attack to splinterproof buildings whose designs differed from prewar torpedo storage buildings and from the standard naval torpedo designs used elsewhere.

1) The torpedo storage buildings are associated with the Hepburn Board's recommendation, and the U.S. Navy's implementation of those recommendations, for the development of a naval air base at Kāne'ohe Bay on O'ahu for five patrol squadrons to relieve overcrowding of aircraft at Ford Island, Pearl Harbor (the only permanent naval air station in Hawai'i). While not directly called for in the recommendations, the torpedo storage buildings were part of the overall implementation of the Board's recommendations.

2) The initial reason for the construction of NAS Kaneohe Bay was to house several squadrons of naval patrol aircraft, primarily the Consolidated PBY Catalina that would be used to control the shipping lanes of the Pacific. The use of torpedoes by these planes required the construction of torpedo storage buildings to house and store the weapons prior to arming the station's Catalina aircraft.

3) Built in 1942, the six torpedo storage buildings were designed as splinterproof facilities in response to the 7 December 1941 attack. Made with 12"-thick reinforced concrete

walls and 12"-thick reinforced ceilings, the buildings were designed to protect against fragments created from adjacent bomb impacts (the splinter effect) as well as to protect against machinegun fire and other small projectiles. The design of these six torpedo storage buildings differed from earlier and later torpedo storage buildings constructed at NAS Kaneohe Bay, and differed from those constructed on the mainland during the war. As splinterproof buildings, the six torpedo storage buildings embody the military's construction and design response to the attack of 7 December 1941.

Part IV. Sources of Information

As part of the preparation of the HABS documentation of the torpedo storage buildings at MCB Hawaii, the historians conducted research at several archival repositories, collecting primary and secondary sources, to prepare the historic context. Archival research was done in Hawai'i and Washington, D.C., for oral histories, maps, historic photographs, and other pertinent documents. SEARCH historians researched the following repositories:

- Library of Congress, Washington, D.C.
- National Archives and Records Administration, Washington, D.C., and College Park, Maryland
- Facilities Department at MCB Hawaii
- Environmental Compliance and Protection Department at MCB Hawaii
- Public Affairs Office at MCB Hawaii
- Naval Facilities Engineering Command, Pacific
- The SEARCH library

A. Architectural Drawings

Fourteenth Naval District, Pearl Harbor, T.H., Bureau of Yards and Docks, Torpedo Storage Building, Plan and Elevations, Details, March 11, 1942, 14 N.D. drawing no. OAN6-325.

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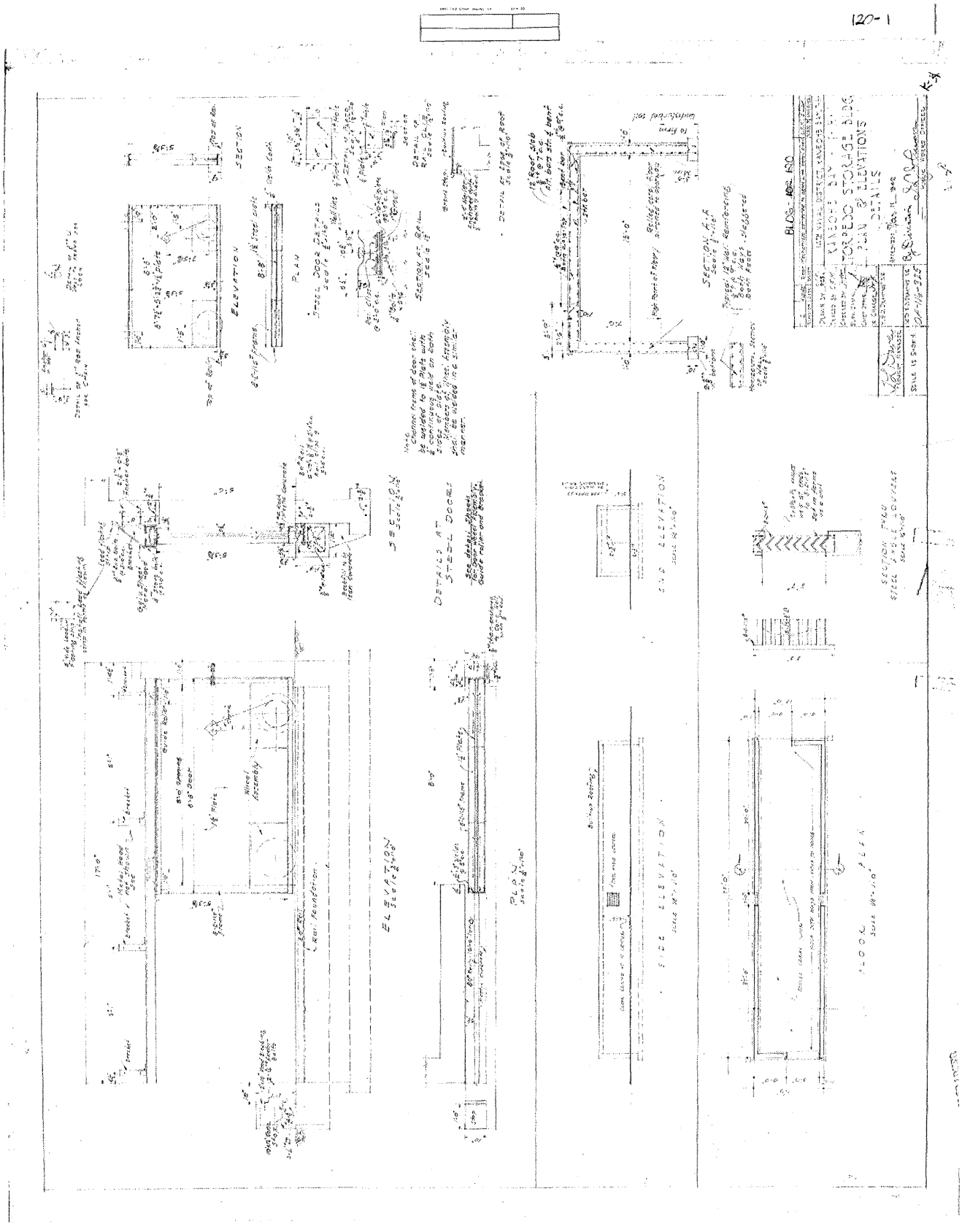
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TORPEDO STORAGE BLDG
PLAN & ELEVATIONS
DETAILS
ELEVATION
PLAN
SECTION
SIDE ELEVATION
DETAILS AT STEEL DOORS