HISTORIC AMERICAN ENGINEERING RECORD

U.S. NAVAL BASE, PEARL HARBOR, QUAY WALL AND BERTHING WHARF
(U.S. Naval Base, Pearl Harbor, Bishop Point)
(Facility No. A7)

HAER No. HI-96

Location: Bishop Point
Pearl Harbor Naval Base
City and County of Honolulu, Hawaii

UTM: The UTM coordinates for this facility are 04.607100.2359100

Dates of Construction: 1941

Engineer/Builder: Contractors Pacific Naval Air Bases

Present Owner: United States Navy

Present Use: Berthing Wharf

Significance: Quay wall and Berthing Wharf A7 is located within the Pearl Harbor National Historic Landmark. Constructed in 1941, it was part of a complex of buildings, piers and quay walls at Bishop Point Section Base during World War II that was home to the Harbor Patrol and Net Depot. The function of the area is significant for its association with the beginning of the Japanese attack on Pearl Harbor. Early in the morning of December 7, 1941, prior to the Japanese dive bomb attack, a ship patrolling from the Section Base, the USS Condor, sighted a Japanese midget submarine offshore. After reporting the sighting to the USS Ward, the Ward sank the submarine. These were the first shots fired on December 7th, and this event marked the official beginning of the United States’ entry into the Second World War. During the remainder of the war, this quay wall continued to berth small Harbor Patrol craft, and function as a component of the Net Depot.

Historian: Polly Cosson and George Casen, Architectural Historians, of Mason Architects, Inc.

Project Information: Photo documentation and recordation of this facility by the Navy has been done in anticipation of imminent repairs to the wharf. This includes replacement of the steel sheet pile bulkhead, timber pile fender system, and foam filled floating fenders, as well as general repairs to the concrete piles, wharf superstructure, mooring hardware and the steel sheet pile along the small boat launch ramp. Photo documentation of historic facilities by the Navy assists in expediting planned
undertakings by having the documentation prepared prior to taking actions. Also, photo documentation assists the Navy in gaining more information about its historic facilities to assist in making proactive management decisions. This project is being supervised by Jeffrey Dodge, Historical Architect, NAVFAC Hawaii. The photographic documentation was undertaken by David Franzen, photographer. Polly Cosson and George Casen, Architectural Historians of Mason Architects, Inc. prepared the written documentation. The field work and research was conducted for this report between March and December of 2005.

Description:

Quay wall and Berthing Wharf A7 is part of a compound of buildings, piers and quay walls at Bishop Point, a small Navy annex inside the Hickam Air Force Base, which is adjacent to Pearl Harbor. Facility A7 was constructed as part of a complex of quays and piers. It is part of a three-section quay that measures 975’ long. It is the westernmost section of this quay and measures 22’-0’’ wide by 400’ – 3 ½’’ long.

A row of three pre-cast concrete piles provide support the width of the quay wall. The center of the 16” x 16” pile hugging the shoreline is placed 3’–3” from the inland side. The center of the middle pile is 2’ -5” from the first pile. This is a 16” x 16” batter (brace) pile that is angled at a 5:12 angle from the underside of the deck towards the water. The center of the outboard pile is spaced 10’– 9” from the central pile. This pile supports the parallel rail tracks along the length of the quay. The deck hangs over the water 7’–7 ¼” beyond the center of this outboard pile.

There are 45 bays along the length of this section of the quay wall. The piles are spaced 13”- 0’ from center-to-center. The longitudinal beam of the quay wall, centered under the rail tracks, measures 24” high and varies in width from 6’ –6” at the point it meets the slab deck to 2’–0” where it meets the concrete pile.

The reinforced concrete slab of the quay deck is at the same elevation as the surrounding land, and is 10” thick. The deck of the quay is constructed of poured concrete, using the “tremie” method of pouring, which involves pouring concrete at low-pressure into a tremie tube (the “tremie” method exerts less pressure on the piers while the concrete is being poured).

At the face of the quay are “stirrups" 18” wide and 3’–0” high (the ends of the transverse beams that appear along the longitudinal face of the quay are known as “stirrups”). There is
a curb measuring 10" high x 8" wide along the outboard side of the deck. Cleats and piping outlets are located along the outboard curb at various intervals. Electric manholes are located at the inboard area of the quay.

A fender system sits along the outboard (ocean) side of the quay. It is comprised of a series of 12" x 12" timber piles spaced 5'-0" center-to-center, that are secured with 1" bolts to the concrete face of the quay. The bolts pass through a 12" x 12" wale piece, which is a thick plank that forms a ridge on the side of a quay (or a ship). Running continuously between the timbers are 8" x 12" chocks (heavy fittings of metal or wood through which a rope or cable may be run to secure vessels).

Few alterations have been made to this quay. Many of the historic piles have been encased in a layer of protective concrete. A curb of wood has been added to the western end of the deck, as the historic design did not include a curb. Rail stops have been removed from the western ends of the tracks. Potable water piping has been added to the deck.

The other components of the quay wall extend eastward and are joined with other facilities. Pier No. 1 (Facility A5/A6) is located adjacent to the east end of the quay. Both Pier No. 1 and Pier No. 2 (Facility A2/A3) are angled toward the quay in the direction of the western end of the quay. The easternmost 399' of the continuous quay is skewed to the right and forms an angle to the continuous quay. An electric conduit from the land runs below the quay to Pier No. 1 (Facility A6) at the point of its intersection with A6.

Other adjacent facilities are the berthing area, which was dredged to a depth of 22,' and Facility S12, a marine railway adjacent to the west side of the quay. Facility S12 is comprised of two walls of steel pilings approximately 135' long and a central concrete incline.

The wharf's condition is deteriorating due to years of exposure to the harsh marine environment. The concrete wall fronting the steel sheetpile bulkhead is spalling due to corroded rebar reinforcement and many of the timber fender piles are missing or damaged.

**Historical Context:**

Berthing wharf A7 was built in 1941 at Bishop Point, a small Navy enclave within the Hickam Air Force Base (HAFB). Bishop Point is connected to the rest of Pearl Harbor Base only by the Pearl Harbor entrance channel. The Navy established several defensive facilities here in the early part of the 20th century, but began a thorough redevelopment of the
area in 1940. For more information on the pre-war history of Bishop Point, see HABS No. HI-377. Also see HABS No. HI-411 for an overall history of the development of the area.

Just prior to the onset of World War II, Bishop Point was a Naval Reservation. In early 1940 the Navy decided to redevelop the site as a base and training center for the net-and-boom craft berthed at the harbor entrance. After construction began in late 1940 for this facility, a net depot was also authorized for the site. Most of the work was completed by 1942, and Bishop Point was officially designated as a Section Base. This meant that it was "designed to support the smaller craft engaged in local defense activities."  

Another relatively small program which contributed significantly to the anti-submarine warfare was the establishment of a considerable number of section bases and frontier bases along the East, West, and Gulf Coasts. These bases were created to serve as home operational ports for the many small craft patrolling the entire coastal area to prevent enemy submarines from lying in wait along coastal shipping lanes or entering the many inlets along the coast, particularly on the East and Gulf Coasts. The facilities constructed by the Bureau of Yards and Docks during the war consisted, in the main, of berthing, small boat repair facilities, and housing and recreational facilities for personnel of the patrol squadrons.

The Section Base at Bishop Point served multiple functions, and its location at the east side of the Pearl Harbor channel made it a prime location for a harbor protection establishment, and as a base for Harbor Patrol. The Navy's harbor protection tasks included controlling all ship movements within defended areas, installing harbor nets and booms, planting contact mines and detection devices, conducting offshore patrols, and

---

doing mine sweeping.\(^3\) The Harbor Patrol operated underwater sound detection boats, submarine attack boats, motor launches, motor boats, and other craft. It also managed the harbor’s Mine and Bomb Observation Posts.\(^4\)

The waterfront improvements that took place at Bishop Point in the early 1940s included the construction of two piers (Pier No. 1, Facilities A5/A6 and Pier No. 2, Facilities A2/A3), 975 feet of quay wall comprised of three separate sections (Facilities A1, A4 and A7) and a marine railway (Facility S12). The berthing area was also dredged. A small floating timber platform was also built to provide docking space for small craft. The larger facilities were host to various vessels including mine sweepers, net tenders and gate vessels.\(^5\)

The quay wall, comprised of sections A1, A4, and A7, was built by Contractors Pacific Naval Air Bases (CPNAB), a consortium of contractors tasked with the majority of construction at Pearl Harbor during the early years of World War II. CPNAB reported that Facility A7 was completed in June 1941 under contracts NOy-3550 and NOy-4173. (Note: the Navy database indicates that it was built in 1944). Sections A4 and A1 were completed soon after June of 1941. CPNAB asserted that "this project considerably increased the berthing facilities of the Navy Yard."\(^6\)

CPNAB's "waterfront" organization handled the construction of the quay, and noted that:

Most of the dredging from the channel to quay wall was done by the 8-cubic-yard dipper dredge "Atkinson" (the "Hellgate" later extended the dredging). The hard coral was drilled and blasted. Then a two-yard, derrick-mounted clam shell, with drag-line, was used to fill the landward side of the quay wall. Piles for quay walls and piers were driven by both land and floating pile-driving rigs. Pre-cast concrete piles were used for the quay wall on east

---

\(^4\) Furlong, William R., Memo to Commandant, Fourteenth Naval District, subj: Base for Harbor Patrol, November 22, 1942, 1.
\(^5\) Yoklavich, HABS No. HI-377, 4.
bank…Tremie-poured concrete, in forms, was used for submarine work and in the quay wall.\textsuperscript{7}

Contractors Pacific Naval Air Bases also documented the following construction process for the quay wall:

As soon as practicable, range lines were established for piles, and driving began; pre-cast concrete piles were used for the quay wall. When enough piles had been positioned, staylathing was placed and the piles cut off to line. Forms for the concrete work in the quay walls were set; sleeves, inserts, conduits, and reinforcements were placed; concrete was poured by tremie method. The pour required care, to prevent segregation of material and disturbance of concrete already poured. Divers inspected. Steel sheet piling for the marine railway was driven to form a cofferdam at the water end, with about 135 feet of piling on each side – later to form the side walls of the railway. Water was pumped from the cofferdam, the incline formed; piles were cut to line and capped.\textsuperscript{8}

One serious accident occurred during the construction of the quay wall. On December 13, 1940, soon after the work on the quays and piers at Bishop Point began, ten workers were injured, and two were killed when 150 pounds of dynamite was accidentally exploded during preliminary dredging work.\textsuperscript{9}

The quay wall (Facility A7) fronted a paved net assembly area and a net weaving slab. Railroad tracks were built atop the entire quay. The tracks were at right angles to the marine railway, and were used to facilitate handling and storage of target floats.\textsuperscript{10} The Army "permitted connection for the new tracks…to the already-existing railroad (which gave Hickam a direct outlet, through Fort Kamehameha)\textsuperscript{11}

The first shots fired in the Pacific War, just prior to the air attack on Pearl Harbor on December 7, 1941, were related to

\textsuperscript{10} Bureau of Yards and Docks, \textit{Building the Navy's Bases}, Vol. II, 149.
the harbor protection duties performed at Bishop Point. While patrolling the harbor entrance near Bishop Point early that morning, the USS Condor (AMc 14), stationed at the Section Base, noted the periscope of a submerged Japanese midget submarine near the harbor entrance. The Condor sent a report to the guard ship, the destroyer USS Ward, who had also noted the presence of the submarine. The Ward fired on the submarine at 0645 and sank it, and promptly sent a dispatch to the Commandant, Fourteenth Naval District that announced, "We have attacked, fired upon and dropped depth charges on a submarine operating in defensive sea areas." This action officially marked the beginning of the December 7th events, and consequently, the United States' involvement in World War II.

Less than two hours later, Japanese dive bombers attacked Pearl Harbor Navy Yard and the nearby Hickam Field. They did not drop any bombs on the Bishop Point Section Base. However, they strafed the area, causing minor damage to facilities such as holes in roofs and broken windows. These resulted from machine gun fire and flying shrapnel. It was also recorded that:

While no enemy action was directed against this station on 7 Dec 1941, there was a power failure due to casualties sustained at Hickam Field. Radio equipment on board ships stationed at the section base [in particular the USS Ash and the USS Cinchona] was used to maintain communication during this power failure.

In addition to the USS Ash and the USS Cinchona (YN-7), which were both boom net tenders, and USS Condor (AMc

---

12 Hubbell, Monroe, Memorandum from the Commanding Officer USS Condor, to the Commander Inshore Patrol, Subject: Air Raid Attack by Japanese, Report On, December 19, 1941.
13 Outerbridge, W.W., Memorandum from the Commanding Officer of the USS Ward to the Commandant of the Fourteenth Naval District, Subject: Sinking of a Japanese Submarine by USS Ward, December 13, 1941.
14 Cooke, J.B., Memorandum from the Commanding Officer of the Bishop Point Section Base to the Commandant of the Fourteenth Naval District, Subject: Air Raid - Report On, December 15, 1941, and Howard, Frank L., Memorandum from the Commanding Officer of the U.S. Naval Net Depot Bishop Point to the Commandant of the Fourteenth Naval District, Subject: Air Raid Attack by Japanese - Report On, December 15, 1941.
U.S. NAVAL BASE, PEARL HARBOR, QUAY WALL AND BERTHING WHARF
(U.S. Naval Base, Pearl Harbor, Bishop Point)
(Facility No. A7)
HAER No. HI-96 (Page 8)

14), which was a coastal minesweeper, several other coastal minesweepers were moored at the Section Base on the morning of December 7th. These included the USS Crossbill, the USS Reedbird (AMc 30), and the USS Cockatoo (Amc 8). Many of the ships opened machine gun and rifle fire on the low flying planes, and it is believed that they succeeded in hitting at least two planes.¹⁶

Other ships moored at the pier departed during the attack to mine sweep the channel and perform other duties. For example, the duty officer of the Net and Boom Defenses, R.V. Eastman, departed from the Section Base in a 26' motor whaleboat (USS YNG 17), and crossed the channel under machine gun fire. He “kept the channel gate to Pearl Harbor closed as much as the hurried departure of units of the Fleet permitted.”¹⁷ Most ships received no damage, although the USS Cinchona received four machine gun holes.¹⁸ No men were killed at the Section Base on the morning of December 7th, although several received ear injuries due to gun blasts, and other miscellaneous injuries due to falling shrapnel.

Throughout World War II, Bishop Point Section Base continued to be used as a net depot, buoy stowage area, and as the base for Harbor Patrol. The quay wall (Facility A7) was an important component of this busy marine-oriented complex. Many of the tasks at Bishop Point Section Base functioned in concert with its annex at Iroquois Point, across Pearl Harbor channel.

Following World War II, and through circa 1950, Bishop Point was an annex to the Shipyard. By 1953, the site was used as a Naval Reserve Training Center, and by 1964 it was incorporated into Naval Station. At the end of the Vietnam Conflict, Harbor Clearance Unit ONE relocated from the Republic of the Philippines to Pearl Harbor, and its headquarters was situated in Facility 17 at Bishop Point. In 1979 the unit's mission was expanded, and in 1982 its command name was changed to Mobile Diving and Salvage Unit (MDSU). Today, MDSU is one of the primary Navy tenants at Bishop Point to use quay wall Facility A7.

¹⁶ Cooke, Memorandum Air Raid - Report On.
¹⁷ Williams, S.S., Memorandum from the Officer in Charge, Net & Boom Defenses, to the Commandant of the Fourteenth Naval District, Subject: Air Raid Attack by Japanese, Report On, December 15, 1941.
¹⁸ Bjork, E. A., Memorandum from the Commanding Officer of the USS Cinchona to the Commandant of the Fourteenth Naval District, Subject: Air Raid Attack by Japanese, Report On, December 14, 1941.
The deck of the quay fronts an area that was originally used as a paved net assembly area and a net weaving slab. The paved net assembly area and the building that has been built upon the net weaving slab are presently being used by the Navy's Mobile Diving and Salvage Unit (MDSU) as storage and office space.

For an overview on Pearl Harbor's waterfront facilities see HABS No. HI-53.

Sources:


Bjork, E. A. Memorandum from the Commanding Officer of the USS *Cinchona* to the Commandant of the Fourteenth Naval District. Subject: *Air Raid Attack by Japanese, Report On*. December 14, 1941. In binder of individual reports of December 7, 1941 attack, provided by Jeffrey Dodge, NAVFAC Hawaii.


Cooke, J.B. Memorandum from the Commanding Officer of the Bishop Point Section Base to the Commandant of the Fourteenth Naval District. Subject: *Air Raid - Report On*. December 15, 1941. In binder of individual reports of December 7, 1941 attack, provided by Jeffrey Dodge, NAVFAC Hawaii.

Memo to Commandant, Fourteenth Naval District,
subj: Base for Harbor Patrol, November 22, 1942.
Declassified document from the NARA San Francisco,
Record Group 181, Box 1, Folder A1-1/ Bishop Pt.
Beginning Aug. 4, 1932 to the end of June 3, 1943.


NAVFAC PAC Plan Files. Original drawings for Facility A7 on microfilm, various dates.


U.S. NAVAL BASE, PEARL HARBOR, QUAY WALL AND BERTHING WHARF
(U.S. Naval Base, Pearl Harbor, Bishop Point)
(Facility No. A7)
HAER No. HI-96 (Page 12)

Bishop Point Map

Area Enlarged Below

Vicinity Map
Quay Wall Location Plan
(Drawing No. 149384, dated Nov. 5, 1940) (reduced, not to scale)
Quay Wall and Pier Details
(Drawing No. 151639, dated Mar. 1, 1941) (reduced, not to scale)
Quay Wall Reinforcing Details
(Drawing No. 151640, dated Mar. 1, 1941) (reduced, not to scale)
Quay Wall and Pier Detail Plan
(Drawing No. 151638, dated Mar. 1, 1941) (reduced, not to scale)
Aerial view of "Buoy Stowage Net Depot" at Bishop Point, showing Quay Wall/Facility A7 on July 12, 1942.
Photo No. 80-G-451149, National Archives.