



FLYING BOAT

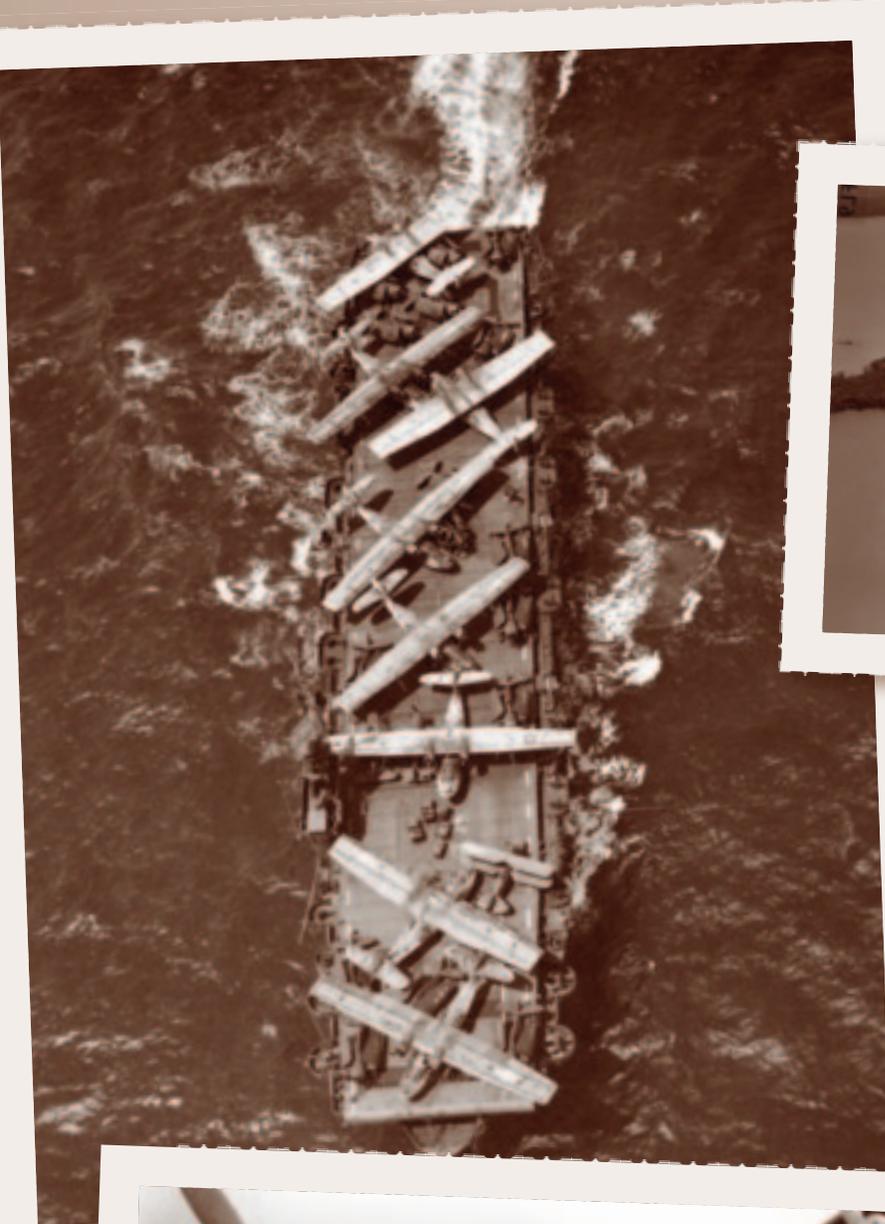
Identified in Kaneohe Bay Provides Clues to
JAPANESE ATTACK



Underwater
Archaeologists
Record Submerged
Historic Resources
at MCB Hawaii

Marine Corps
Base (MCB)
Hawaii cultural resource
managers and under-
water archaeologists
are playing a critical
role in preserving and
documenting sunken
seaplanes decimated by
the Japanese during a
December 1941 attack
in Kaneohe Bay.

*Historical photo sources: World War II Database
and Naval History and Heritage Command*



On this Sunday morning, the Japanese attacked
NAS Kaneohe **MINUTES BEFORE** the attack on Pearl Harbor.

**JAPANESE ATTACK ON
NAS KANEOHE**

Sunday morning, 7 December 1941 began as most Sunday mornings at Naval Air Station (NAS) Kaneohe. This small seaplane base on the east (windward) side of Oahu Island was affectionately dubbed the Country Club of the Pacific. The base was constructed on a peninsula of land called Mokapu. Although the north shore of the peninsula features large crescent shaped waves perfect for surfing, the southern shore faces Kaneohe Bay, a protected body of water used as a water runway by seaplanes or flying boats—Catalina PBY (“PB” for patrol bomber and “Y” for the code assigned to Consolidated Aircraft Corporation—the manufacturer). Three PBY squadrons (VP-11, VP-12, and VP-14), all part of Patrol Wing 1, were stationed at NAS Kaneohe.

On this Sunday morning, however, the Japanese attacked NAS Kaneohe (now MCB Hawaii) minutes before the attack on Pearl Harbor. It started with two strafing runs over NAS Kaneohe during which time Japanese gunners fired upon Navy personnel and planes. In the After Action Report, Commanding Officer of NAS Kaneohe, Harold M. Martin wrote, “At about 0750 Sunday, 7 December, low-flying planes were noted passing over the station. Immediately thereafter the sound of machine gun fire alarmed the station and reports began to flow in that Japanese planes were

obviously using incendiary bullets as fires were started immediately. Most of the casualties from this attack were on the planes moored in the water...”

Only three PBYs from VP-14 escaped destruction because they were on dawn patrol over Pearl Harbor. One plane, however, received enemy fire and managed to return to base, in a condition described by Commander Karig, as “badly shot up in aerial combat.” The other PBYs were at NAS Kaneohe during the attack. These PBYs were high priority targets for the Japanese since they were long-range patrol bombers that could have followed the Japanese attack

planes back to their carriers. During the attack, four or five PBYs were undergoing repair in Hangar 1 and between 23 and 25 were parked on the ramps, which suggests that three to six were moored in Kaneohe Bay.

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Location of MCB Hawaii on the island of Oahu.
Map Data ©2016 Google



THE BASICS ABOUT THE PBV "FLYING BOAT"

The PBV was one of the most versatile aircraft used during World War II. PBVs were able to conduct surveillance and reconnaissance patrols, bombing raids, air to sea rescues, evacuations, and ferry troops and supplies. These aircraft were considered "flying boats" since they landed and took off from the water; they were designed to land directly on their fuselage and not on floats like seaplanes. Although seaplanes were initially

employed during World War I, it was not until Consolidated Aircraft Corporation started experimenting with seaplane designs in the 1930s that the PBV was developed. The first PBV-1, originally called a KP3V-1, was constructed in 1936 and would become the most successfully produced flying boat in U.S. military history.

The first design of the PBV included a high wing, an all metal monoplane with struts attached to the wing, floats, and an open cockpit. It weighed about 12,500 pounds and had a range of 1,500 miles. Later improvements to the plane included an enclosed cockpit, retractable floats on the wing tips, and a semi-cantilever wing. The wing itself was constructed of an aluminum alloy frame that was covered with metal forward of the rear span and fabric aft of the span. The early versions of the PBV had beaching gear that the beach crew would have to attach

after landing to bring it ashore rather than attached wheels. The PBV-5, which was the aircraft at NAS Kaneohe in 1941, had additional changes, including waist gun blisters that were armed with .50 caliber machine guns, a redesigned tail with a squared off rudder and horizontal stabilizers and elevators. Also, new Hamilton Standard Hydromatic propellers were installed. The PBV could carry four 500-pound bombs, a torpedo on racks under the wings, or four depth charges.

The PBV flight crew consisted of two pilots, a navigator, a radioman, a flight engineer, a bombardier/bow gunner and two waist gunners. The plane contained crew comforts for long distance flights, such as bunks, a galley, and food and water stores.





Attempting to save a burning PB4Y at NAS Kaneohe after the Japanese attack on 7 December 1941.
Navy Historical Center

Following the attack, *MYSTERY HAS SURROUNDED*
the fate of the PBYS moored in the bay.

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The first wave of the Japanese attack lasted only eight minutes and every exposed PBV at NAS Kaneohe was damaged. Chief Petty Officer Charles Clark, who was on security watch, remembered a burning PBV on the water off Hangars 1 and 2. This sight he never forgot while he stood there formulating the grim realization that his base was under attack. Daniel Griffin, an enlisted pilot, swam out to his plane, which was moored in the bay. "He just barely got airborne," recounted his son Don Griffin, when "it got hit and burst into flames." Photo documentation indicates that Sailors working by the ramp attempted to pull burning PBVs from the bay to possibly repair them or retrieve the guns from the planes. About 25 minutes after the first attack, another squadron of Japanese Zeros (fighter planes) appeared and began firing on the planes and dropping 100-pound bombs.

Eighteen Sailors and two civilians were killed, and 69 others were injured. Of the 33 planes on the ground, including possibly six floating just offshore, 27 were put out of commission, and the remaining sustained serious damage. Three Japanese fighter planes were shot down, one at the base of Puu Hawaii Loa and two in Kailua Bay.

*THE FATE OF PBVs MOORED
IN KANEOHE BAY*

Following the attack, mystery has surrounded the fate of the PBVs moored in the bay. It has been assumed that pilots of several planes attempted to detach from their mooring buoys and take off. As indicated from oral testimony, at least one plane was burning and may have drifted out into the bay before sinking. It is possible that some of the PBVs were pulled ashore and salvaged for parts. Other planes may have sunk on their moorings.

Historians have disagreed over which planes were at NAS Kaneohe and

what happened to the planes after the attack. In addition, families, such as the Griffin family, have wanted to know the locations of the submerged PBVs flown by loved ones.

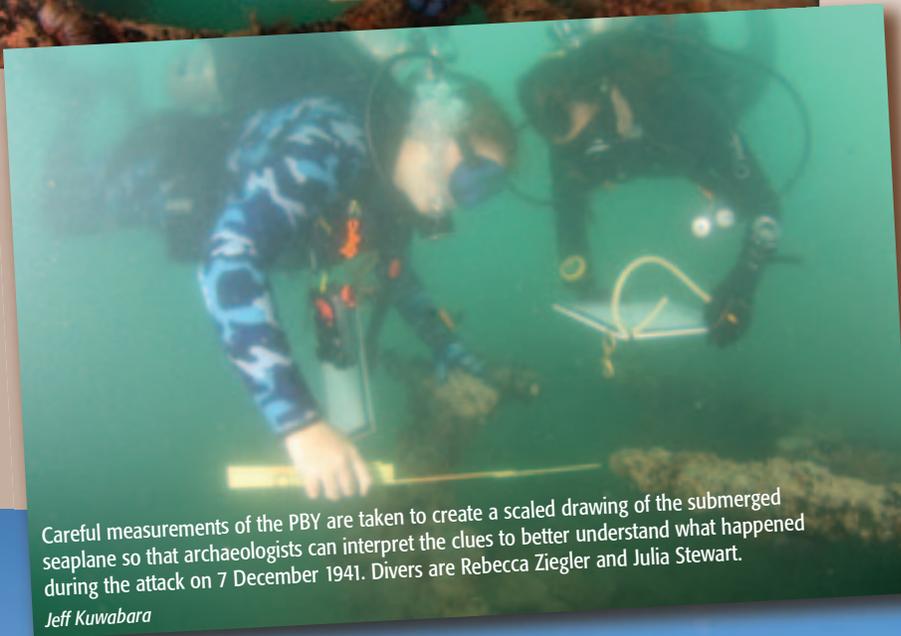
Underwater archaeologists from East Carolina University, the University of Hawaii, and the National Park Service





Underwater archaeology student, Rebecca Ziegler, photo documents details of the submerged PBY in the waters off of MCB Hawaii.

Jeff Kuwabara



Careful measurements of the PBY are taken to create a scaled drawing of the submerged seaplane so that archaeologists can interpret the clues to better understand what happened during the attack on 7 December 1941. Divers are Rebecca Ziegler and Julia Stewart.

Jeff Kuwabara

became interested in these questions in the early 1990s after U.S. Marine Corps divers from MCB Hawaii identified remains of an airplane in the installation's offshore waters. Initial reconnaissance of the aircraft debris in 1994 confirmed that the wreckage was from a PBY lying on the silt floor of the bay in 25 feet of water about 500 feet from shore. Examination of the wreckage revealed that the PBY is positioned in an east-southeast direction and consists of a section of a fuselage and wing lying at an oblique angle to one another, accounting for 53 feet of the original 104-foot wingspan of the aircraft. In addition, a portion of the plane's tail was located southwest of the main wreckage, possibly having been blown apart

Overview of MCB Hawaii showing Kaneohe Bay on the right (north and west) side of Mokapu Peninsula and Kailua Bay on the left (south) side.

Raymond Rippef



This PBY has the same type of significance as the USS Arizona and USS Utah; they are all **DIRECT CASUALTIES** of the December 7th attack. —*Dr. Hans Van Tilburg*

from the body of the plane. No paintings, markings, or identification were discernable. A significant finding during this study was a submerged buoy located near the wing and fuselage that still held air. The buoy consists of an elongated sphere approximately 18 inches in diameter constructed of rubber-coated metal; it resembles the description of the buoys used in moorings for the PBYs. A steel cable, partly buried below the plane, appears to attach to both the buoy and a large rectangular piece of concrete used as a mooring anchor block. The steel cable provides compelling evidence that the PBY sank at its mooring, ruling out speculation that the plane crashed or represented discarded wreckage.

Extensive examination of the PBY indicates that the PBY does not have a wheel well and is thus an early model of the PBY before retractable wheels were added to the planes. This type of PBY, known as a PBY type 5, is consistent with known planes stationed at NAS Kaneohe during the attack. Diving on the interior of the cockpit, archaeologists observed that the cockpit controls for the port side engine are located in the “throttled up” position. PBY pilots started the port engine first to allow the plane to idle up to its anchor buoy for release.

Underwater archaeologists also identified substantial damage to the port side of the fuselage and wing, possibly having originated from inside the plane. They hypothesized that a depth

charge triggered by a fire, may have caused this catastrophic damage while the PBY was throttling towards the buoy and caused the plane to rapidly sink. A jagged rip in the aluminum can be seen behind the navigator’s window and resembles damage caused when a propeller detaches and tears into the fuselage. The underwater archaeologists from the survey in 1994 noted that “this PBY 5 was doubtless one of the first planes to be strafed by the Japanese fighter planes and probably caught fire within minutes of the attack...It is not beyond reason to speculate that this particular plane’s crew was on station and were in the process of starting the port engine when the attack commenced.”

FAST FORWARD 20 YEARS

More than 20 years have passed since underwater archaeologists initially recorded the PBY in Kaneohe Bay and almost 75 years since the Japanese attack. Dr. Hans Van Tilburg, who was on the initial project and is now the maritime heritage coordinator with the National Oceanographic and Atmospheric Administration’s (NOAA) Office of National Marine Sanctuaries, continues to be awed by this submerged plane. He conveys the significance of this underwater archaeological site when he says, “This PBY, known by few and seen by even fewer, has the same type of significance

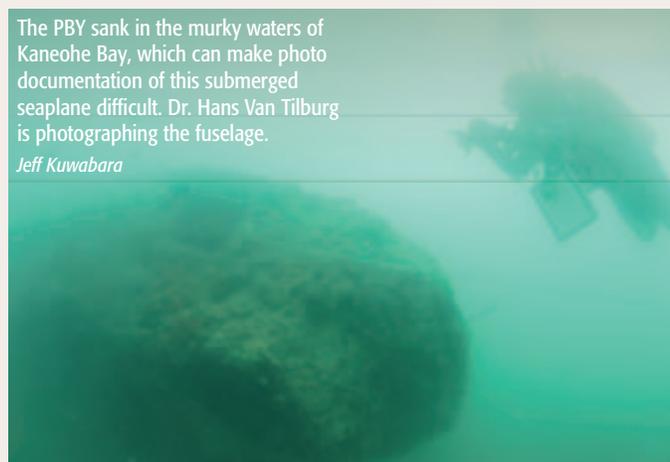
as the USS Arizona and USS Utah; they are all direct casualties of the December 7th attack.”

The PBY’s location in the restricted waters of MCB Hawaii has aided in its protection. Since this important historic site is located in MCB Hawaii’s waters, it falls to the base’s Cultural Resources Managers, June Cleghorn and Coral Rasmussen, to oversee the preservation and documentation of the PBY. Discussions with Dr. Van Tilburg led to speculation about the overall stability of the plane and whether additional information can be gathered using improved photographic technologies.

By partnering with NOAA and the University of Hawaii, MCB Hawaii assembled a team of scientific divers to document site changes of this plane, identified as one of America’s first casualties of the war, that have occurred over the last 21 years. This site, hidden under tranquil blue waters, lies relatively undisturbed.

The PBY sank in the murky waters of Kaneohe Bay, which can make photo documentation of this submerged seaplane difficult. Dr. Hans Van Tilburg is photographing the fuselage.

Jeff Kuwabara



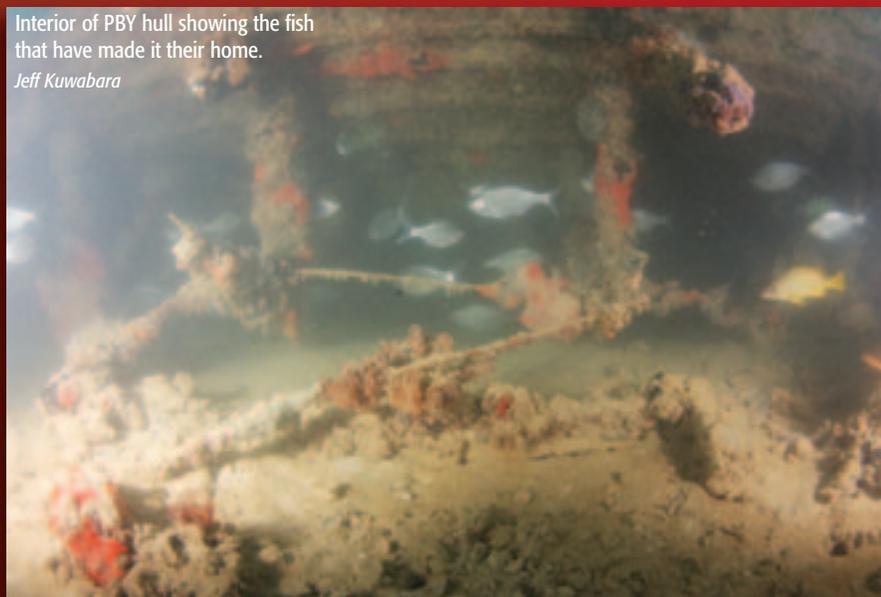
THE BASICS ABOUT THE SUNKEN MILITARY CRAFT ACT

The Sunken Military Craft Act (SMCA) was enacted on October 28, 2004. Its primary purpose is to preserve and protect from unauthorized disturbance all sunken military craft that are owned by the United States government, as well as foreign sunken military craft that lie within U.S. waters. Pursuant to the SMCA, the Navy's sunken military craft remain property of the U.S. regardless of their location or the passage of time and may not be disturbed without permission from the U.S. Navy.

The Naval History and Heritage Command (NHHC) Underwater Archaeology Branch manages the Navy's more than 17,000 ship and aircraft wrecks located around the world. These craft, and their associated contents, represent a collection of non-renewable and significant historical resources that often serve as war graves, carry unexploded ordnance, and contain oil or other hazardous materials. Accordingly, it is the overall policy of the U.S. Navy that its sunken military craft remain in place and undisturbed.

Interior of PBV hull showing the fish that have made it their home.

Jeff Kuwabara



Detail of the engine nacelle, an aerodynamic structure that holds the engine, on the starboard wing. Note the coral growing on the hard substrate of the plane.

Jeff Kuwabara

The U.S. Navy is in the process of establishing a revised permitting program to allow for controlled site disturbance of sunken and terrestrial military craft for archaeological, historical, or educational purposes. In the interim, applications are submitted for consideration under the current permitting program. The SMCA does not affect commercial fishing and laying of submarine cables, non-intrusive recreational diving, salvage of vessels that do not qualify as sunken military craft, and the routine operation of ships.

For more information, visit www.history.navy.mil/research/underwater-archaeology/policy-and-resource-management/sunken-military-craft-act.html.

Discovery of additional **PBY LOCATIONS** can help confirm how many PBYs were moored in the bay and what each plane was doing at the time of the attack.

During the summer of 2015, underwater archaeologists, led by Dr. Tilburg, slide off the dive boat and into the water to inspect the plane. Curious fish accompany the archaeologists as they swim towards the submerged PBY, initially visible only as a dark shadow in the green-blue water. First they see the form of the damaged fuselage, followed by the wing and engine nacelle. With the aid of improved underwater cameras, these images were captured, showing details of the plane never seen before. June Cleghorn, Senior Cultural Resources Manager at MCB Hawaii, explains why, as the 75th anniversary of the attack approaches, these images of the wreck are important,

“This sunken flying boat is a window into the events of the attack, a moment in time which reshaped the Pacific region. Understanding this site sheds light on the mystery of the lost PBYs, and honors the legacy of the Navy and Marine Corps Base in Hawaii.” The PBY-5 wreck is protected by the SMCA of 2014.

Dr. Van Tilburg noted that although the site has remained relatively stable with most of the major features remaining in place and apparently undisturbed, the PBY is deteriorating due to natural elements. There is an increased deterioration on the hull and wing duraluminum (age-hardenable aluminum

alloy) and metal over the starboard engine nacelle system.

WHAT'S NEXT

Mystery still surrounds the disposition of the remaining PBYs moored on the water the morning of 7 December 1941. MCB Hawaii plans to continue partnering with NOAA and the University of Hawaii to search Kaneohe Bay. Technological advances in magnetometers, which measure the total magnetic strength of materials, can be used to survey the ocean floor and discover remnants of the PBYs that may not be immediately recognizable or buried under the soft silt of the bay floor. Discovery of additional PBY locations can help confirm how many PBYs were moored in the bay and what each plane was doing at the time of the attack. Although this information is helpful to historians, it is very important to family members that continue to mourn the loss of their loved ones. The PBY already discovered, as well as others that may be present in Kaneohe Bay, will continue to be protected and preserved at the bottom of at those that fought bravely on 7 December 1941, and as such, will eventually succumb to the environment. 



Underwater archaeology students preparing for a dive on the submerged PBY in Kaneohe Bay.

Jeff Kuwabara

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