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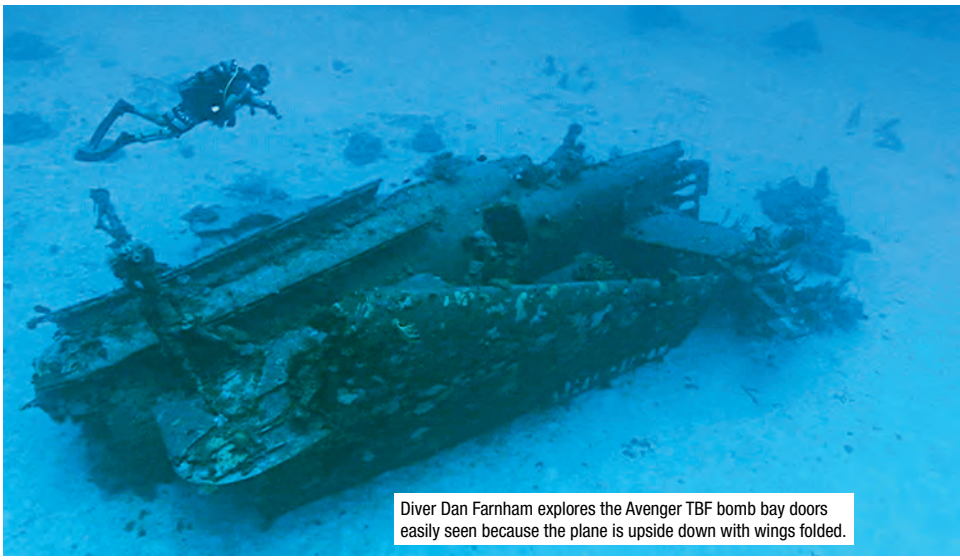
Victory in the Skies

Text and Photographs by
Barbara Buchanan



Diver Dan Farnham explores the Avenger TBF bomb bay doors easily seen because the plane is upside down with wings folded.

Their contrails faded, the fast and fierce US planes that once ruled the skies during WWII are now lying on the bottom of Kwajalein Atoll Lagoon near Roi-Namur Island in the Marshall Islands.

January 31, 1944, one of the many "D-Days" of the Pacific theater, was the start of a merciless assault by continuous naval shelling and aerial bombardment. Admiral Chester Nimitz' attack against the Marshall Islands, code name "Operation Flintlock," was part of a strategic plan to leapfrog across the Central Pacific and strike into the heart of Japanese territory. Nimitz' two objectives were: to first seize the deep water lagoon entrance in the northern part of the atoll near Roi-Namur Island and then the southern part on Kwajalein Island --- the weak spot in the Japanese island chain defenses.

Roi-Namur was assigned to the 4th Marine Division and Task Force 53 under Major-General Harry Schmidt and Kwajalein was assigned to the Army's 7th Infantry Division and Task Force 52 under Major-General Charles H. Corlett.

On January 29th, two days before D-Day, the tails were in the air. The US carrier forces went into action early that morning. Waves of Navy Hellcats and Avenger torpedo bombers descended on Roi-Namur, destroying every Japanese plane in the atoll, losing only four Hellcats and one Avenger. The plan of action left Roi-Namur wide open for close range naval bombardment. Because there was no Japanese aerial support, the second attack came later, when the U.S. naval forces moved in closer and the blasts of firepower from these intruders of the night pounded the shoreline. The following day smoke darkened the sky. The relentless forces from the battleships *Tennessee*, *Maryland*, and *Colorado*, along with five cruisers, nineteen destroyers, and carrier support battered the Japanese again, persistently pouring bombs and shells on every square yard. After the preliminary massive shelling, the next plan was for the advancement of the Marine Regiment. Reaching the beaches, they quickly swept across the island, combing through the remaining remnants, securing a victory within six hours of landing.

The U.S. forces rained havoc on the enemy, but the Japanese would not surrender to the forces against them. After forty-eight hours of intense bombardment, Rio-Namur was pulverized and stripped of the lush, green vegetation, leaving only a handful of severed trunks of coconut palms and charred ruins. The toll was 3,472 Japanese killed and 91 prisoners captured while the Americans lost 190 Marines and 547 wounded. The battle of Roi-Namur in the Marshall Islands resulted in the first piece of prewar Japanese real estate that was captured in combat by the US during WWII. The Marshall Islands' location meant the seizure of Roi-Namur was the first milepost, astride the sea lanes to Japan.

The aftermath of Roi-Namur looked like a pit of hell. The Navy Seabees began the grim task of clearing the island, bulldozing the piles of debris, repairing the runways, and burying thousands of dead bodies. Soon after, Roi-Namur became the US Carrier Aviation Service Unit (Forward) #20 or CASU-F-20 airbase in the Marshall Islands - a steppingstone victory towards the invasion westward to meet the Rising Sun.

The CASU-F-20 aircraft staging base was important for future operations for the repairing of damaged planes or salvaging them for parts to support the frontline advancement towards seizure of the next island chains, including Enewetak, the Carolines, the Marianas and Iwo Jima, a prelude of the destruction to come with the invasion of Japan. The CASU-F-20 also provided service to and maintainenance of the planes permanently assigned to Roi-Namur. These planes performed sea patrols and attacks on the bypassed surrounding islands that were still held by the Japanese.

The U.S. Armed Forces continued to leapfrog from one Japanese island territory to another, advancing towards Japan's mainland and prevailing in victory under vigorous circumstances with horrific casualties. The seizure of Iwo Jima was important for two reasons: first, the Japanese had radar on the island which was used to warn Japan of incoming bombers heading to their homeland and second, it was crucial for the top secret "Manhattan Project," which led to the first atomic bomb launch. After the capture of

Left Inset: C-46 Commando known as "The Whale", a true work horse.
Right Inset: F4U Corsairs in flight formation.
Main Photo: SBD Dauntless dropping a bomb in an attack dive where you can see the metal "Swiss cheese" brakes on the trailing wing section.

Iwo Jima, the island was first used as an air-sea rescue base and also served as a landing and refueling site for American bombers on missions to and from Japan. The island's three airfields were strategically critical for setting the stage for delivery of the first atomic bombs that would later end the war.

After the Pearl Harbor attack, the Americans thought Japan was evil and unworthy of life. On 15 August 1945, known as V-J Day (Victory in Japan), Japan surrendered after two atomic bombs were dropped with utter destruction. The first bomb, known as Little Boy, a gun-type fission weapon was dropped on Hiroshima on 6 August and the second bomb known as Fat Man, an implosion-type nuclear weapon, three days later on Nagasaki. Both bombs were deployed by B-29 aircrafts.

After the end of the war in the Pacific, the U.S. had an abundance of military equipment and thousands of troops returning stateside. All the Navy ships were needed to transport the troops and that did not leave room for unnecessary military equipment. Returning the war equipment was costly, so it was cheaper to scrap and dump the damaged equipment than to transport it back to the states for scrapping. The final job for CASU-F-20 was to salvage the damaged equipment, mostly aircraft. The planes were loaded onto barges and towed out to nearby Mellu Island and dumped overboard into the lagoon.

The aviation graveyard consists of up to 150 planes strewn about on the sandy bottom. There are seven types of US planes in the collection: Mitchell, Dauntless, Helldiver, Avenger, Wildcat, Corsair, and Commando.

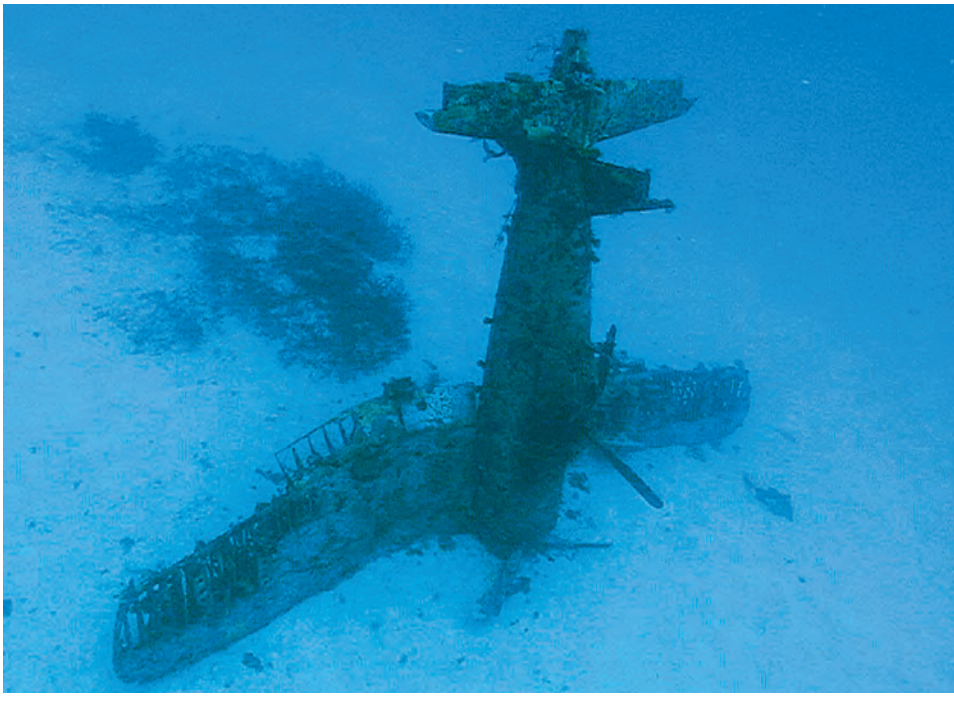
The B-25 Mitchell was a medium bomber designed in 1938 by the North American Aviation Company. Named in honor of General Billy Mitchell, there were 9,984 built. The Mitchell had a shoulder-mounted wing, twin engines, and a crew of five or six. Before the end of production, the model B-25J had eighteen .50 caliber machine guns in various gun positions and could carry up to 3,200 lbs. of bombs.

The Mitchell series became an American classic during WWII. After the Pearl Harbor attack, the Unites States wanted to demonstrate to Japan that their homeland was

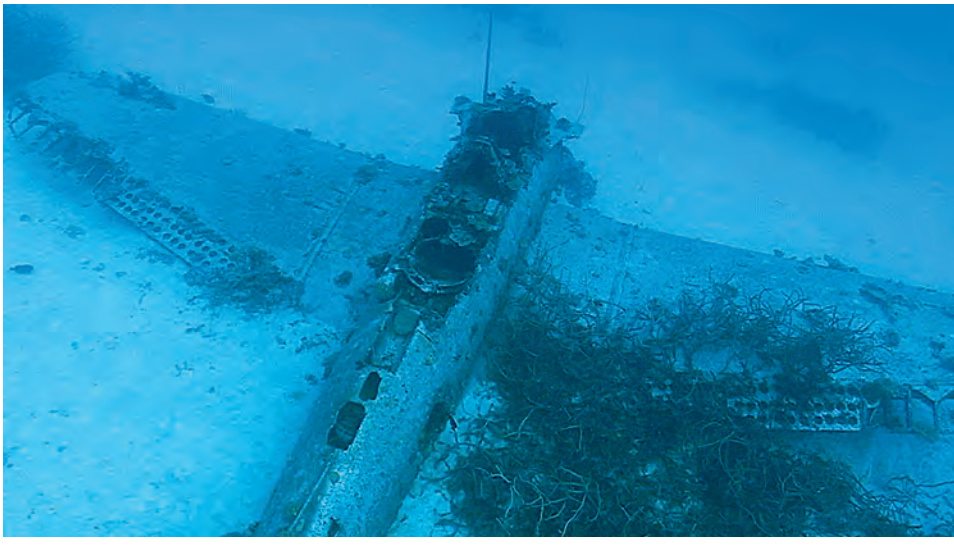
The Dauntless SBD nose end and wingless.

> “The Dauntless’ distinctive feature was the split above and below perforated flaps on the trailing edge of the wing and a section below the fuselage.

Diver “DJ” David Castle swims around the Commando R5C that carried supplies and troops during WWII, now missing wings and twin engines.



The Corsair F4F sitting nose end and tail straight up towards the surface.



This Dauntless SBD here shows the metal “Swiss cheese” dive brakes on the trailing wing section.

just as vulnerable to air strikes. President Roosevelt ordered the raid to bomb Japan as soon as possible. Navy Captain Francis Low came up with the plan of attack and Lt. Col. Jimmy Doolittle lead the air raid. On 18 April, 1942, sixteen Mitchell bombers were launched from the USS *Hornet* to strike targets in Japan. Although actual damage was minor, it forced Japan to deflect troops to homeland defense throughout WWII. These bombings also were intended to bolster American morale and to cause the Japanese people to have doubts in their military leaders.

After the "Doolittle" raid, the Mitchell was operated mostly by the Marine Corps as a land-based bomber and the Navy used the SBD Dauntless as a carrier-based plane early in the war. The SBD Dauntless dive bomber, known as "Slow But Deadly," was a force to be reckoned with. Designed in 1938 by Douglas Aircraft Corporation, it wasn't produced until 1940. Several improvements and variants of the plane were made: the SBD -1 was assigned to the Marine Corps, the SBD-2 was assigned to the Navy and the Army Air Force version was known as A-24 Banshee.

The initials SBD stand for "Scout Bomber Douglas." "D" was the letter the Navy assigned to all planes manufactured by Douglas, which produced 5,936 before production ended in July, 1944. The Dauntless carried a crew of two, a pilot and radioman. The radioman had double duty as rear gunner with twin .30-inch machine guns; earlier versions only had a single .30-inch gun. The forward wing firing armament was equipped with two .50-inch M2 Browning machine guns. The fuselage and wings carried a total combined weight of 2,250 lbs. of bombs. The Dauntless' distinctive feature was the split above and below perforated flaps on the trailing edge of the wing and a section below the fuselage. The flaps looked like metal "Swiss cheese" and were used as dive brakes when, in a steep, evasive, 70-degree attack dive, they allowed enough air to pass to achieve stability and pinpoint accuracy. Then the bomb could be dropped and the plane pulled out of a vertical dive.

The Dauntless first saw action during Pearl Harbor and was the first U.S. Navy plane to sink an enemy ship, the Japanese submarine *I-70*, just three days after the attack. The Dauntless' most victorious contribution came during the Battle of Midway, where, in six minutes, the Dauntless sank three Japanese aircraft carriers, *Akagi, Kago* and *Soryu.* The *Hiryu* carrier briefly escaped but was sunk later in the day during a second attack and two cruisers were badly wounded. By the end of WWII, the Dauntless was credited with destroying and sinking more Japanese warships than any other Allied aircraft, a total of eighteen ships including a battleship and six aircraft carriers.

Although the Dauntless had become obsolete by 1941 and was replaced by the SB2C Helldiver, the SBDs were used until the end of WWII. SB2C Helldiver was designed in 1939 by Curtiss Aircraft Corporation but wasn't introduced until December, 1942, after several modifications to the prototype variant. SB2C stands for Scout Bomber 2 (second bomber) and "C" was the letter the Navy assigned to all planes manufactured by Curtiss, which produced 7,140 before production ended in 1945. The Helldiver carried a crew of two, a pilot and radioman. The radioman doubled as rear gunner with twin .30 inch M1919 Browning machine guns, but earlier versions had only a single .30 inch gun. The forward wing firing armament was equipped with two 20-mm cannons. Unlike the Dauntless, the Helldiver had an internal bomb bay which could carry a 2,000-lb. bomb or one Mark 13 torpedo and each wing could carry a 500-lb. bomb.

The Helldiver would never triumph over the success of the Dauntless' handling capabilities. The Helldiver was a debacle with many malfunctions, an egregious failure to the U.S. Navy which didn't accept the Helldiver until 880 modifications were made.

With the delays in production, the Helldivers didn't see combat until November, 1943, on the USS *Bunker Hill*, when they attacked a Japanese-held port in Rabaul, north of Papua New Guinea. The Helldiver, still plagued with unreliable operational electronics and longitudinal stability, was underpowered, and had frequent maintenance problems with the electric propeller and hydraulic system, so the plane was problematic. The crews had given the Helldiver several nicknames, such as "Son of a Bitch 2nd class," the "Beast" or "Big Tailed Beast."

After the Navy requested the improvements to the aircraft, the weight increased over 40%, explaining part of the performance problems. It wasn't until early 1944 when the engine was replaced with the R-2600-20 Twin Cyclone with 1,900 HP and the Curtiss 4-bladed propeller in the new variant SB2C-3. Things turned around and the Helldiver participated throughout the Pacific Theater.

With the insufficiency and delays of the SB2C, the TBF Avenger went into service before the Helldiver. The TBF Avenger was designed by Grumman Aviation Corporation and began service for the Navy in January, 1942. TBF stood for Torpedo Bomber and the "F" was assigned by the Navy to all aircraft built by Grumman. Later that year Grumman transferred TBF Avenger production to General Motors, and the Avenger was then designated TBM instead of TBF; the letter "M" stood for aircraft manufactured by General Motors. A total of 9,839 Avengers were built before it was retired in the 1960's.

The Avenger carried a crew of three, a pilot, bombardier, and rear turret gunner. The bombardier also manned the M1919 Browning .30-inch ventral gun turret and radio. The bombardiers had little armor protection which put them in constant danger of shrapnel from AA fire. Since the ventral gun was rarely used, the squadrons used only a crew of two, a pilot and rear gunner. The gunner occupied the rear .50-inch dorsal gun turret most of the time but he could slide down into the fuselage belly and man the radio, or arm bombs and torpedoes when needed. The bomb bay could carry four 500-lb bombs or one 2000-lb Mark 13 torpedo. The nose was equipped with an M1919 Browning .30-inch machine gun (on earlier models) and each wing was equipped with an M2 Browning .50-inch machine gun.

The Avenger was the heaviest single engine plane and was larger in size than any other aircraft. Because of limited storage space aboard an aircraft carrier, Grumman designed a unique wing-folding mechanism. The wings folded upwards and laid against the fuselage, allowing for

maximum space. On later models the Avengers were the first to carry aviation radar, because the radar was bulky and the Avenger was roomier than the smaller, faster fighter planes.

The first six Avengers produced saw combat during the pivotal Battle of Midway where five of them were shot down and the last seriously battered, but the only one to return. Despite the losses in its combat debut, (due mostly to lack of crew experience and no fighter cover support), the Avenger became one of the most outstanding torpedo bombers during WWII. Because of the chunky size and slower maneuverability compared to the smaller, faster F4F Wildcat fighters, the crew referred to the Avenger as "Turkey." One of the most notable Avenger pilots is former President George H. W. Bush, who received the Distinguished Flying Cross for his extraordinary heroism during aerial combat.

In order for the bombers and torpedo bombers to be successful in their mission to hit enemy targets, they needed fighter cover support. The major opponent for the US was the Japanese A6M Zero which outclassed the U.S. fighter aircraft in the early days of the Pacific Theater.

The F4F Wildcat gave the faster Japanese Mitsubishi A6M Zero a competitive dogfight. The Wildcats were introduced in December, 1940, and were designed by Grumman Aviation Corporation. The F4F stood for Fighter 4 (fourth fighter contracted by Grumman) and "F" was the letter assigned by the Navy to all aircraft manufactured by Grumman. Grumman later transferred production to General Motors, and the Wildcat was then designated as FM-1 and later as FM-2. A total of 7,885 planes were produced before it was retired in August, 1945.

The Wildcats were outfitted for a one-man crew, a fighter pilot armed with four, fixed, .50-inch AN/M2 Browning machine guns, two in each wing, firing 450 rounds per gun. Later models had six .50-inch machine guns, firing 240 rounds per gun. Each wing could carry one 100-lb bomb or one 58-gallon drop tank. The protective armor consisted of an armored windshield, and plating in front of the oil tank and behind the pilot. Later model upgrades included the wing-folding mechanism.

Even though the Zero outperformed in speed, climb rate and maneuverability, the Wildcat compensated with superior firepower and heavy armor protection that could withstand severe combat damage, unlike the lightweight, unarmored Zero. From lessons learned in early dogfights, Wildcat pilot John Thach developed a two-plane formation style with units spaced three to four hundred feet apart which became known as the "Thach Weave" maneuver. When one two-plane formation was fired upon, the other two-plane formation would turn towards the other and cross paths. At this point the Zero could either break off or follow. If the Zero continued the run, this would set up the second formation for a head-on attack, resulting in a kill. The tactic was a great success against the rival Zero and resulted later in an air combat kill-to-loss of 6.9:1.

The Wildcats' first bomb kill was on December 11 during the Wake Island battle, days after the Pearl Harbor attack, where four Wildcats succeeded in sinking a Japanese destroyer, the *Kisaragi*. Though the Wildcats played a prominent role in the early Pacific Theater, more advanced fighters were needed that were capable of defending against the Zero on more equal terms. Grumman redesigned the Wildcat to meet the need and designated the new fighter, F6F Hellcat, which became known as the "Zero Killer."

Even though the F6F Hellcat was a superior force against the Japanese Zero, the F4U Corsair was faster, with a supercharged engine beyond the Zero abilities. The Corsair was designed in 1938 by Chance Vought Corporation but wasn't introduced until December 1942 after several modifications to the prototype variant. F4U stood for Fighter 4 (fourth series from Vought) and "U" was the letter assigned by the Navy to all aircraft manufactured by Vought. Before production ended in 1953, there were 12, 571 Corsairs built, making U.S. history for the longest production run of any piston-engine fighter manufactured.

The Corsair was a single-seat, carrier-based fighter. The first variants were armed with six .50-inch AN/M2 Browning machine guns. Later variants were upgraded to carry two 1,000-lb. bombs or eight 5-inch rockets, and some variants had four 20-mm cannons instead of six .50-inch machine guns. The Corsair was the first U.S. Navy aircraft designed with fully retractable landing gear completely enclosed in the wing wheel wells. The Corsair's most unique design feature was the gull wing, or bent wing, which made it instantly recognizable.

The U.S. Navy received the first Corsair production in 1942. The initial trials proved the aircraft unsafe for carrier duty. The Corsair's powerful, oversized engine forced the pilot seat farther back from the nose, restricting visibility for takeoff and landing. Upon landing, the pilot was blind in the approach which put more stress on the landing gear, causing the plane to bounce on deck. Even though the Corsair's capabilities were impressive, the Navy was reluctant to commit. The Navy still had the reliable Hellcat, so the Corsair was restricted to land bases and handed over to the Marines.

The Marines discovered the Corsair's worth and built a reputation for air-to-air combat, resulting in several ace pilots. It wasn't until 1944 when the pilot seat was raised and the landing gear was strengthened that the successful landing trials persuaded the Navy to approve it for carrier service. It would become the most formidable American fighter of WWII, with an 11:1 kill ratio.

As the U.S. forces advanced towards Japan, the military needed a cargo transport aircraft to bring in supplies and transport them from island to island. The C-46 Commando was designed in 1936 by the Curtiss Aircraft Corporation but the original design, the CW-20, was intended to be a 36-passenger commercial airliner to compete against the Douglas airliner, the DC-3.

The Army Air Force would receive a majority of the 3,181 C-46 Commandos built, but 160 were assigned to the Navy. The Navy designated the aircraft R5C which stood for Transport 5 (the fifth aircraft from Curtiss) and "C" was the letter the Navy assigned to all aircraft built by Curtiss.

The 76-foot-long Commando, referred to as "The Whale," was the heaviest and largest twin-engine transport, with a wing span of 108 feet. The cargo area was 48 feet long, 9 feet

Left - Top to Bottom: Beside Roi runway is the damaged Japanese airfield Headquarters building.

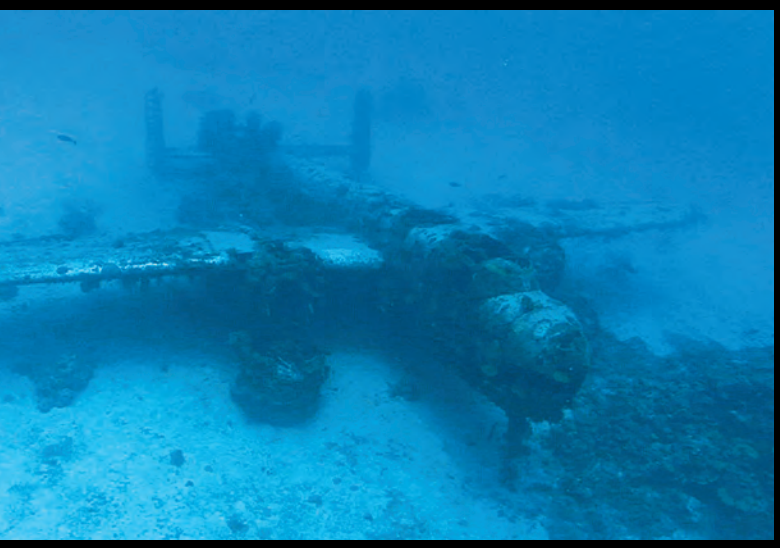
Japanese air raid shelter with ALTAIR radar station in the background.

Japanese blockhouse bunker on a beach facing the ocean with three gun ports; one each facing north, east and west. This would indicate that the Japanese assumed the American would attack from the sea and not from the south lagoon side.

Right - Top to Bottom: A damaged Japanese diesel fuel storage building.

Damaged Japanese support complex near ALTAIR radar station are the remnants of a torpedo workshop, oxygen generating plant, fuel storage building and main power plant.

"Roi-Namur is a registered National Historic Landmark. The WWII Battlefield ...



Above Left: The Mitchell B-25 was mostly known for Doolittle Raid.

Above Right:--- B-25 Mitchell's aboard the USS *Hornet* before the Doolittle Raid on the Japanese homeland.

Right: The Helldiver SB2C would never triumph over the Dauntless reputation.

Below Left: Japanese cemetery where 3,472 bodies are buried.

Below Right: Remnants of Japanese twin 5 inch guns.

About the Author: Barbara Buchanan is a photographer and videographer who travels the globe. She has worked on expeditions with archeologists on Blackbeards shipwreck *Queen Anne's Revenge* documenting the excavation for the Dive Down project. Her most recent project is filming the wrecks of Kwajalein in the Marshall Islands. She is owner of Scuba Planners Dive Travel and has arranged many expeditions including the Japan trip with *Wreck Diving Magazine* where she filmed the expedition. You can view her photos and video work at: www.fishtalesproductions.com

10 inches wide and 6 feet 8 inches high. It had a reinforced floor which could carry a crew of four and 15,000 lbs. of cargo or 50 infantrymen or thirty-three litter patients for medical evacuation. The extra-large cargo door on the left side made it easy to load and unload freight or wounded troops.

The Commando was a true workhorse that gained its fame from transporting war materials over the Himalayan Mountains which became known as "The Hump." After the Japanese cut off the Burma Road between India and China, the only way to transport in supplies to the friendly, southwest forces of China was a treacherous route over the Himalayas. Even though the engines were capable of high-altitude flying, it put a tremendous strain on them and forced the equipment beyond operational limits. The dangerous, four-hour flight also exhausted the pilots and crew.

Unlike the deadly flight over "The Hump," my flight from Kwajalein Island to Rio-Namur Island was a short, 30 minutes over 50 miles of turquoise blue, tropical bliss. The only way to fly to Roi-Namur is by a U.S. Army non-commercial flight, referred to by the locals as metro flight, which transports employees and service personnel between the two islands.

Approaching Roi-Namur, I looked out the window at two polygon-shaped pieces of land joined together, barely a square mile between them - a forlorn place to live. Roi-Namur originally was two separate islands, but during their occupation, the Japanese built a causeway connecting them. Today Roi-Namur is an occupied U.S. territory, part of the Ronald Reagan Test Site and home to four radar tracking stations, ALCOR, ALTAIR, MMW and TRADEX.

Upon landing, I thought of D-Day when Rio-Namur was pounded and stripped of all the lush, green vegetation and of the rubble of charred, Japanese ruins. It was not the paradise I saw that day. To the right of the runway were the remnants of the Japanese airfield headquarters building and air raid shelter.

Roi-Namur is a registered National Historic Landmark. The WWII Battlefield Tour consists of 17 stops around the island including several Japanese blockhouses, pillboxes, air raid shelters, ammunition, bomb and fuel storage, the support complex, airfield headquarters and Japanese cemetery. Touring the severely damaged remnants gives you a sense of the merciless battle that took place.

After the war the planes were salvaged and dumped overboard by the CASU-F-20 airbase unit. Near Mellu Island is one of the most unique, underwater, aviation museums. It is unlike any other museum in the world and not open to the public. It is one of the most complete collections of WWII U.S. naval and land-based aircraft known to exist in one location.

The depth averaged 120 feet and the visibility was 80+ feet which had a milky haziness about it and not the gin-clear conditions you would expect in turquoise blue waters. For the dives we anchored on the reef and used a compass heading to swim along a featureless sandy bottom until we reached the dive site.

We planned the dives as follows: day one - the Dauntless and Mitchell; day two - the Helldiver; day three – Commando; day four - Corsair, Avenger and Wildcats.

Approaching the Dauntless site, we had the sensation of parachuting over the top of an airfield. Some planes looked as if they had just landed and some as if they had crash landed. The first plane was wingless, nose end buried in the sand, and tail straight up. The planes were scattered about, mostly wingless, upside down or sideways. There were two upright with wings which allowed us to see the unique, perforated metal, "Swiss cheese" flaps used in a vertical attack dive.

The Mitchell was a huge 52 feet 11 inches long with a wing span of 67 feet 7 inches. This American classic sat upright, encrusted with coral, and mostly intact. Comparing the land-based Mitchell to the smaller carrier planes, we found it impressive. It successively launched from the USS *Hornet* during the "Doolittle Raid."

Day two: the Helldiver, which never triumphed over the Dauntless' capabilities, lay on the bottom, upright in a mangled mess. The right wing was broken and bent over a metal box container, and the left wing was intact. Shells were piled next to the fuselage and in the pilot seat. Both the tail fin and engine were missing. Severely damaged, this plane was either in serious combat or used for parts.

Day three: unlike the other dives, it was too far to swim to the Commando so we anchored near the wreckage. The Commando was a massive 76 feet long with its wings and engines missing. Swimming through the empty cargo area, I wondered what cargo she carried or if she dared to fly over the "Hump."

Day four: my last dives on Roi-Namur were to three notable aircraft types that triumphed in many battles. The most formidable American fighter of WWII with an 11:1 kill ratio was the Corsair. She stood tall with propeller nose end in the sand, tail straight up and wings spread out to each side. The nearby Avenger became the most outstanding torpedo bomber during WWII, with the teamwork of fighter cover support from the Corsair and Wildcat. She was upside down with her bomb bay doors open, doors that once released havoc on the enemy. The Wildcat had a combat ratio of 6.9:1 after pilots adopted the "Thach Weave" maneuver tactic which had great success against the rival Zero. Several Wildcats were scattered on the bottom, mostly upside down or sideways, with only the fuselages and tail fins remaining. There was one solo upright in shallow waters near the reef.

These battered and bruised planes were victors in the skies and the pilots that flew them were heroes to the end. The men were called upon to serve their duty in a grievous mission that may have seemed impossible, but with the brotherhood of honor, loyalty and courage, they conquered defeat. To all those that gave their heart and soul to fight, God bless you.

"Touring the severely damaged remnants gives you a sense of the merciless battle that took place.