

An underwater photograph of a coral reef. A diver is visible in the lower right corner, swimming towards the left. The reef is covered in various types of coral, including branching and table corals. The water is clear and blue. The title 'BIKINI ATOLL' is printed vertically on the right side of the image in a stylized, metallic font.

# BIKINI ATOLL



# Going Down On Sara!

Story and Photography  
by Kevin Denlay

She has remained in the same area for years, graciously accepting all visitors. She was once a grand and famous lady and although she is now well past her prime, she stills holds that certain exotic allure. Although her awesome reputation precedes her she was still everything I had heard she was cracked up to be. What a beauty, those incredible dimensions, that striking figure, the imposing presence. And I had the opportunity to experience her as much as I liked over the next two weeks! Such is her allure that I have heard of people going back again and again to where she resides, just to go down on her another time. And me, why I couldn't get enough of her either! What sort of dive story is this you may ask? Well this a story about Operation Crossroads, the Atomic Bomb, Bikini Atoll and the allure of the mighty *Saratoga*, or just *Sara* to those who know her, and the ghost fleet keeping eternal vigil on that lonely atoll floor. But first follow me back 50 years to the birth of the atomic age.

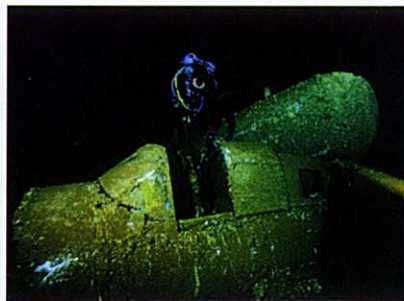
In 1946 the United States assembled a giant armada of almost 100 warships in the protected anchorage of Bikini Atoll, a remote coral outpost in the northern Marshall Islands, located in the central Pacific Ocean. The U.S. had previously

let off three atomic bombs, all shrouded in secrecy. The very first one as a test in the deserts of New Mexico, the next two over Japan, devastating both Hiroshima and Nagasaki and forcing an end to World War II. Still America wanted to test bigger and "better" bombs, this time for all the world to see as the cold war was just beginning and rattling the sabre, so to speak, was thought to be the best way to go to keep those upstart Russians in their place. The US chose the idyllic atoll of Bikini for their experiments, and these lasted until 1958. The Bikini Islanders were all removed from their ancestral home and told that as soon as the test were finished they would be returned. They have still not returned! Little did many people realize at the time that the initial explosion was to be the least harmful effect of the bomb. It was the unseen radiation that contaminated everything, which was to become the real monster of the atomic age. (But as we shall see, time and mother nature heal most wounds!)

Twenty four atomic tests were conducted on or around Bikini Atoll with a further 43 conducted at the nearby atoll of Eniwetak. The largest nuclear device ever detonated by the United States was set off at the northern end of Bikini atoll

on February 28th, 1954. Code named Bravo, it vaporized two small islands and formed a huge crater in the reef over one mile across and 250-ft. deep (this crater is a sight to be seen). The expected yield had been six megatons or the equivalent of six million tons of TNT. It turned out to be 15 megatons! To this day it is still considered one of the world's worst nuclear events, contaminating a huge area.

But enough of that, what interests us is Operation Crossroads and the bombs code named Able and Baker. Babies as it were at a mere 23 kilotons each, the fourth and fifth nuclear explosions in history. Babies that is, with the explosive force of 23,000 tons of TNT! Able was an air burst dropped from a B-29 Superfortress over the abandoned test fleet. Although impressive, it was not quite what most of the visiting dignitaries, military personnel, press and some scientists had expected. And at the time there were 42,000 personnel on or around Bikini Atoll, or on other non-test ships, to witness and assist in the experiment. Many of the test ships were badly damaged by Able and some even sunk, but still it was not considered the spectacle that had been anticipated. But then three weeks later they detonated Baker, an underwater blast set approximately





90 ft. (27m) beneath the surface. This turned out to be “a spectacle beyond all imagination” as one observer later noted. The mighty aircraft carrier *Saratoga*, all 880 ft. (270m) of her was lifted into the air by one of the shock waves from the blast and, riding on a wall of water, carried almost a half mile from where she was anchored! Seven and a half hours later she succumbed to the effects of the blast and slipped slowly beneath the surface of the atoll. Hardened military men, especially those that had served on this illustrious lady openly wept as she disappeared forever. The U.S. battleship *Arkansas* and the once mighty flagship of the Imperial Japanese Navy, the *Nagato*, were also lost as were the U.S. submarines *Pilotfish*

and *Apogon*. More than two million tons of water and sediment had been hurled skyward to fall back to earth and batter the ships, while blast shock waves swept across the abandoned fleet and the island with incredible force. (The video footage of this explosion has to be seen to be believed.) Yet it was not this immediate violent explosive effect that was to prove the undoing of this experiment, but the lingering unseen radiation. At the time little was known of its effects and the navy had sailors, the very next day, back on some of the ships that survived the blast hosing and scrubbing down the decks in a futile effort to get rid of this radiation. Futile was the key word and the ships that were not sunk had to be abandoned and towed to other destinations and either scuttled or used in other weapons test, all too hot to handle. The once pride of the German fleet and also a participant in the tests, the *Prinz Eugen*, was towed to Kwajalein Atoll where she sunk belly up on the reef edge, eventually becoming a popular dive site.

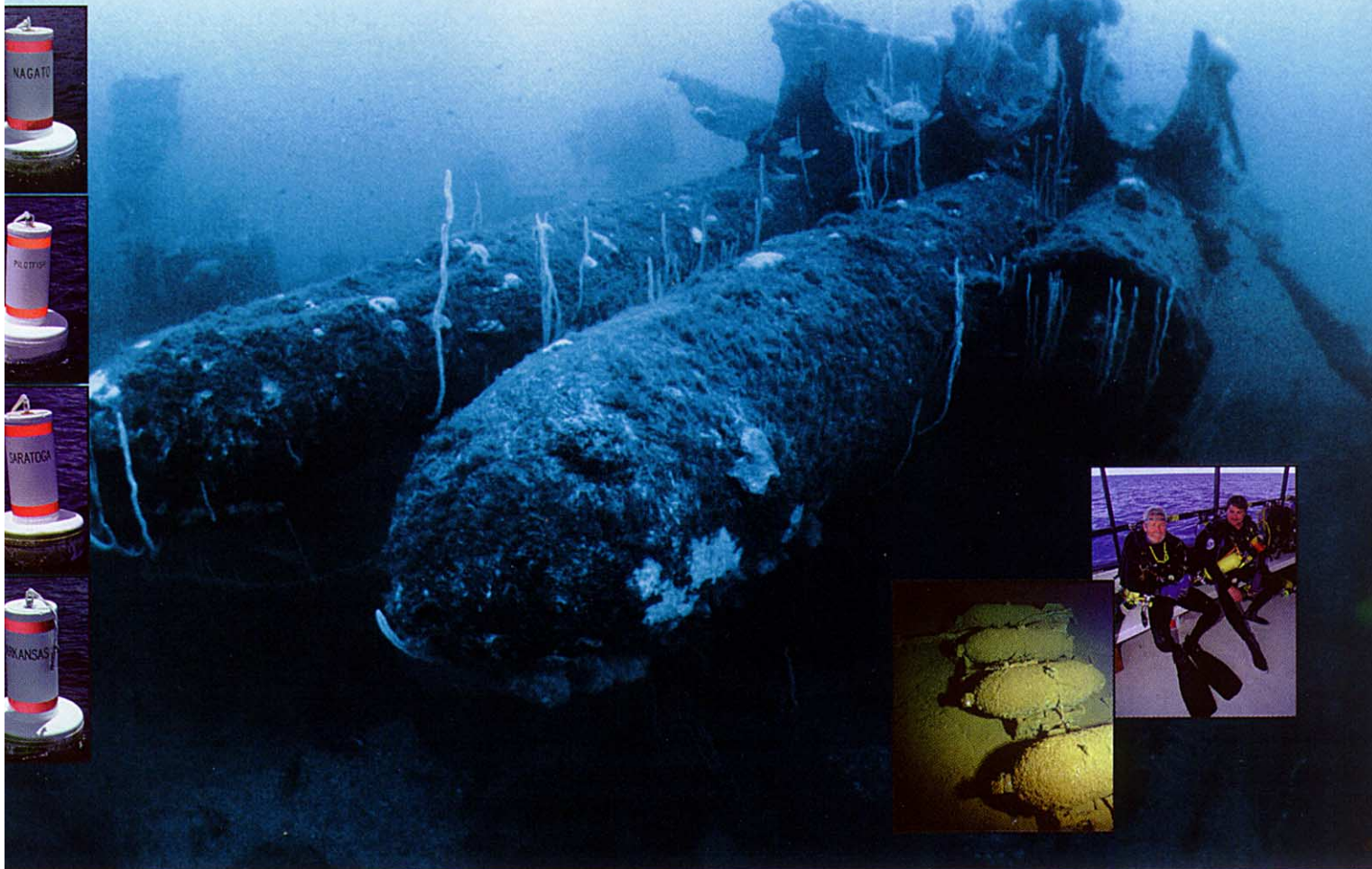
And now 50 years later Bikini is finally open to sport divers, or should I say, ideally very advanced sport divers. Whoa you say, what about that damn radiation!? Well, recent independent tests (non government)

have shown that the radiation level above and below Bikini Atoll is actually less than in most major cities. The winds and ocean currents of mother nature have slowly done what man could not. The remaining legacy of the bomb is that of an isotope called caesium 137 which is present deep within the soil and can enter the food chain. As nothing that is grown on the islands is eaten (all food stuffs are shipped in), this is not a concern for visiting divers. A U.S. Department of Energy field station on Bikini continues to monitor these caesium levels in coconuts and other test crops grown on the island. It is now the displaced Bikinians intention to move back to their island in the next few years.

The dive operation on Bikini is operated by Marshalls Dive Adventures, an arm of Robert Reimers Enterprises under a contract with the Bikinian people themselves. Head honcho on site at Bikini and dive operations manager is Fabio Amaral, a very knowledgeable and affable Brazilian who has lived in the Marshall Islands for a few years. An IANTD instructor able to teach everything up to and including technical nitrox/technical deep air, he runs a tight ship. His divemasters include American Scott Herman and Englishman Matt Harris who are both technical trained and qualified along with a local Bikinian divemaster,







Edward Maddison who has done literally thousands of dives on the wrecks. Installed while I was there in September was their brand new DNAX nitrox membrane machine, the very latest in nitrox blending technology which is able to convert atmospheric air to nitrox mixes, doing away with having to deal with large unwieldy oxygen cylinders. A very adequate storage bank system for both nitrox and air assures no time spent waiting on fills. They are able to offer any nitrox or trimix mixture you choose (that is if you are certified and carry your C card to prove it, as only mouthing words will get you nothing) and they have a wide variety of equipment, with both double and single 85s and 104s, and 45, 40 and 30 cubic-foot stage bottles, making this a truly high tech operation. And although all the depths are within technically accepted limits for deep air diving, trimix is ideal for any of the more adventurous penetrations. Diving is from a spacious, shaded decked boat named *Bravo* and a large, in-water, oxygen-supplied deco station with bars at 10 and 20 ft., make waiting out the shallow stops a pleasure (well, as pleasurable as hanging out on deco can be!).

Then there are the wrecks! There are 10 prime wreck sites located at Ground Zero in Bikini Atoll, and all are marked with one or more buoys and down lines. But be advised that these wrecks were all sunk in a weapons test scenario and most had as much as 80% or more of their ammunition and armament on board when they went down. This is all still there and it is LIVE, so take care! Sitting upright and the flagship of this ghost fleet is, of course, the mighty *Saratoga* (CV-3), a Lexington class aircraft carrier commissioned in 1927, which to this day still holds the record for most take off and landings done from any carrier. *Sara* was always in the thick of the action in WWII and was claimed sunk so many times by the Japanese she was often referred to as of the Ghost of the Pacific. The charismatic Bull Halsey commanded this gallant ship and access to the bridge where he once stood is still possible, while the flight deck sits at about 100 ft. (33m) and the hanger deck with the Avenger, Hellcats, torpedoes and bomb racks is at about 140 ft. (42m). Her sponson deck literally bristles with quad 40mm bofors and twin five-inch main batteries can be seen on her flight deck. The *Arkansas* (BB-33), a WWI-era battleship still saw more than her share of action in WWII. She carried 12,

12-inch guns and 16, five-inch guns along with an aircraft launched from a catapult. She now rests upside down with penetrations to please even the most jaded. One of her crewman, 76-year-old WWII veteran Fred Fredrickson, was one of the first visitors to Bikini after it opened in 1996 and got to dive his old ship! "The best dive of my life," were his exact words. Then there are the destroyers *Lamson* (DD-367) and the *Anderson* (DD-411). The *Lamson* is a Mahan class destroyer that had once searched the Pacific for Armelia Earharts' downed plane and went on to earn five battle stars in WWII. She now sits upright with her superstructure blown away while her main guns, etc. remain in place. The *Anderson* is a Sims/Anderson class destroyer which lies on her side and being still relatively intact is the more intriguing of the two. She had earned 10 battle stars in WWII serving at such places as Midway, Coral Sea, Guadalcanal and Tarawa. She went down with more than 90% of her ordinance on board and it clearly shows. Torpedoes lay scattered about like toothpicks! The Balao class submarines *Apogon* (SS-308) and *Pilotfish* (SS-386) both sit upright as if still patrolling the depths, looking for all the world as if




they are just waiting out a depth-charge attack. At any moment you expect them to power up and sneak away. Both show superficial damage but are very well preserved and are unforgettable dives. (A sister ship, the *Bowfin*, is on permanent display at Pearl Harbor and is well worth an on-board visit on your way to Bikini.)

And then there is the huge and once proud flagship of the Imperial Japanese Navy, the *Nagato*. A Nagato class battleship with 16-inch guns, she was once home to none other than Admiral Isoruko Yamamoto, the architect of the raid on Pearl Harbour that brought America into WWII. She now rests upside down with scope for major penetrations. Her huge guns are an awesome sight with barrels almost 40 ft. (12m) long. Four huge props and twin rudders adorn the upturned hull and dwarf divers. But be warned, rumor has it that Yamamoto still haunts his once grand lady and that a curse remains. Nearby is the Imperial Japanese Navy cruiser *Sakawa*, an Agano class vessel crushed like a toy and almost completely buried in the sand, sitting upright on the floor of the atoll. Although little remains of her except her forward turrets (with barrels removed) the crumpled, buckled

bow is an awesome sight to see. And last, and some might say least because they are not true warships, are the *Carlisle* and the *Gilliam*, both Gilliam class attack transports. Anywhere else in the world the *Carlisle* would be considered a world class dive in her own right. Here she is relegated to second-class status. Although heavily damaged amidships the stern is intact with an aft gun and full ammunition crates still plainly visible. And the *Gilliam*, moored almost directly beneath the Able blast is now a barely recognizable shattered hulk on the bottom, ample evidence to the bomb's destructive force. Fish life abounds on most of the wrecks, giant trevally, dogtooth tuna, schools of jacks, we even sighted eagle and manta rays occasionally, and sharks both whaler and silver tips, were to be seen on most dives. But ask me what my favorite dive was and it is impossible to say. The hanger deck on *Sara* with the Avenger, Hellcats and torpedo/bomb racks, or the 16-inch guns and the bridge where Yamamoto once stood on the *Nagato*, or the armed to the teeth *Anderson* with torpedoes and depth charges scattered about, either of the two imposing submarines, penetrations on the *Arkansas*, or just seeing the

crushed bow of the *Sakawa*? Take your pick, I guarantee if you love wrecks and history, you won't be disappointed. And I bet you'll go down on *Sara* more than once too!

So if you now plan to visit this once-proud fleet, generally expect to do two decompression dives a day in the 130 ft. (40m) to 180 ft. (55m) range and spend up to an hour decompressing, depending on your dive profile. (Night dives are not an option as hungry tiger sharks are known to haunt the atoll waters after dark.) Dive computers must be decompressed fully (that is if you are still diving a computer for these kind of dives) and a mandatory extra 10-to-15 minutes is spent on surface supplied oxygen while on the deco station at 10 ft. after your computer clears. Divers using custom, computer-generated tables would cut their own schedules. In the two weeks I was there we exclusively used the very reliable and hassle free Pro-Planner deco software for all dives, while other divers deco'd out their computers. And although all dives, except the flight deck of *Sara*, are beyond the so called limits of sport diving, the operation is run with safety foremost in mind. The conditions while reasonably deep are



*Kevin Denlay is a mixed-gas instructor/trainer and his company Alternate Diving Services, which specializes in technical diving and mission support, has trained technical divers and instructors all over the world. He travelled to Bikini Atoll at the request of the operators to further their training in technical diving. Not only did the dive team do the first ever nitrox dives in Bikini, Kevin also did the first trimix dives on both the *Saratoga* and the *Nagato*. Kevin claims to live in Australia and can be contacted by phone/fax at 61 7 55907477 or by Email at altidive@iaccess.com.au. (that is if he is ever home)*



generally benign. Warm water 82F (29C), good visibility and no current make for very enjoyable diving. A minimum four-hour surface interval is had between dives spent resting and eating lunch back at the lodge, and the dive boat *Bravo* is set up with ample room to handle gear-intensive tech divers. Food at the Ground Zero Galley is both ample and filling and the accommodations, while simple are very clean and more than adequate. And although this is a truly first-class operation with an emphasis on safety (you're a long way from home now Toto!), any visitor, to really take full advantage of their time at Bikini, would do well to arrive already technically trained, qualified and experienced in decompression diving.

#### SOME TRAVEL DETAILS.

At present only one flight a week (on Wednesdays) goes from Majuro (the capital of the Marshall Islands) to Enau Island on Bikini Atoll. This is a small plane so weight restrictions are strictly enforced. Bikini Island is about a one-hour boat ride across the atoll from Enau. No phones, faxes or television exist on Bikini Island although there is a well-stocked video library and viewing room. Usually an overnight stop is required in Hawaii connecting to a Continental Air Micronesian flight the next morning that flies down to Majuro with a stop at Johnston Atoll. Here you may be greeted by the sight of machine-gun toting guards making sure that no one, except military personnel and assigned workers, get off the plane. That's okay, you do not want to get off here anyway as it is a storage and disposal site for U.S. chemical weapons. Another overnight in Majuro is necessitated with a next day flight to Bikini via Kwajalein Atoll. Another U.S. military installation, Kwajalein, besides being the biggest atoll in the world, is the reentry site for U.S. intercontinental ballistic missiles test fired from Vandenberg Air Force Base in California. Although more than a 5,000-mile flight, they splash down in Kwajalein's atoll (hopefully) within 30 minutes of lift off. So with a bit of luck and as long as your bags made all the flights, you will be diving the mighty Sara on the Wednesday afternoon. And yes, it is well worth the journey/expense and no, you will not glow in the dark. 🙌

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