THE CRITICAL EXPERIMENT
WRECK EXPEDITION IN BIKINI ATOLL

Frequently Asked Questions

Photo by Jesper Kjøller

BRING YOUR GEIGER COUNTER!
In the early 1900’s after WW1, the Japanese began to administer the Marshall Islands after a mandate from the League of Nations. This mandate later resulted in a military build up throughout the islands in anticipation of World War II. Bikini and the rest of these peaceful, low lying coral atolls in the Marshalls suddenly became strategic, as did other famous wreck destinations like Truk Lagoon. The Bikini islanders’ life of harmony drew to an abrupt close when the Japanese decided to build and maintain a watchtower on their island to guard against an American invasion of the Marshalls. Throughout the conflict the Bikini station served as an outpost for the Japanese military headquarters in the Marshall Islands, Kwajalein Atoll.

In February of 1944, the American forces captured Kwajalein Atoll and thereby effectively crushed the Japanese hold on the Marshall Islands. The five Japanese men left on Bikini, while hiding in a covered foxhole, killed themselves with a grenade before the American military forces could capture them.

After the war, in December of 1945, President Harry S. Truman issued a directive to Army and Navy officials that joint testing of nuclear weapons would be necessary “to determine the effect of atomic bombs on American warships.” Bikini, because of its location away from regular air and sea routes, was chosen to be the new nuclear proving ground for the United States government, after Truk Lagoon actually had been their first pick before Hiroshima and Nagasaki.
In February 1946, Commodore Ben H. Wyatt, the military governor of the Marshalls, traveled to Bikini. On a Sunday after church, he assembled the Bikinians to ask if they would be willing to leave their atoll temporarily so that the United States could begin testing atomic bombs for “the good of mankind and to end all world wars.” King Juda, then the leader of the Bikinian people, stood up after much confused and sorrowful deliberation among his people, and announced, “We will go believing that everything is in the hands of God.”

While the 167 Bikinians were getting ready for their exodus, preparations for the U.S. nuclear testing program advanced rapidly. Some 242 naval ships, 156 aircraft, 25,000 radiation recording devices and the Navy’s 5,400 experimental rats, goats and pigs soon began to arrive for the tests. Over 42,000 U.S. military and civilian personnel were involved in the testing program at Bikini.

The Crossroads tests were the first of many nuclear tests held in the Marshall Islands, and the first to be publicly announced beforehand and observed by an invited audience, including a large press corps. They were conducted by Joint Army/Navy Task Force One, headed by Vice Admiral William H. P. Blandy rather than by the Manhattan Project, which had developed nuclear weapons during World War II. A fleet of 95 target ships was assembled in Bikini Lagoon and hit with two detonations of Fat Man plutonium implosion-type nuclear weapons of the kind dropped on Nagasaki, each with a yield of 23 kilotons of TNT.
95 vessels — the equivalent of the sixth-largest navy in the world at the time included: 4 US battle ships, 2 aircraft carriers, 2 cruisers, 11 destroyers, 8 submarines, numerous amphibious and auxiliary vessels, plus three surrendered German and Japanese warships. The vessels have been bunker and filled with munitions and sheep representing soldiers to be completely war ready. More then half the world's supply of cinema equipment was supplied to record this event.

The two atomic bomb blasts, Able and Baker were both about the size of the nuclear bomb dropped on Nagasaki and the first blast, Able, was dropped from a B-29 and detonated at a altitude of 158m at 9am on July 1st, 1946.

Baker, a bomb of the same yield was used for the 2nd test, this time detonated at 27m underwater beneath LSM-60 on 25th of July, 1946. No identifiable part of LSM-60 was ever found and it was presumed vaporised by the nuclear fireball. Other vessels sunk by this test were USS Arkansas, USS Pilotfish, USS Saratoga, YO-160, HJMS Nagato, USS Skipjack, USS Apegon, and ARDC-13 dry-dock.

According to a Defense Nuclear Agency report on the Bravo blast, the weather briefing the day before the detonation stated that there would be "no significant fallout ... for the populated Marshalls." The briefing at 6pm, however, stated that "the predicted winds were less favorable; nevertheless, the decision to shoot was reaffirmed, but with another review of the winds scheduled for midnight." The midnight briefing "indicated less favorable winds at 10,000 to 25,000-foot levels." Winds at 20,000 feet "were headed for Rongelap to the east," and "it was recognized that both Bikini and Eneman islands would probably be contaminated."

Therefore, the decision to go forward with the test, knowing that the winds were blowing in the direction of inhabited atolls, was essentially a decision to irradiate the northern Marshall Islands, and moreover, to irradiate the people who were still living on them.

The radioactive contamination in the lagoon from the Baker test caused far greater problems than were expected. The German heavy cruiser Prinz Eugen, sank in December 1946 at Kwajalein Atoll, five months after the atomic tests, because high levels of radioactivity prevented repairs to a leak in the hull. Only nine surviving target ships were eventually decontaminated and sold for scrap. The rest were sunk at sea, mostly near Kwajalein Atoll, after decontamination efforts failed.

Thus Bikini Lagoon became the final resting place for some of the most historically significant warships in naval history. The dangers of the radioactivity and limited services in the area led to divers staying away from this most remarkable scuba diving site for many years. However, from the dust and detritus of the nuclear weapon tests, the lagoon at Bikini Atoll has emerged as the world's greatest wreck diving site.
**Expedition information**

Bikini Atoll or “coconut place” is one of the most remote diving destination on the planet. Bikini is located just north of the equator in the Pacific Ocean halfway between Australia and Hawaii, approximately 850 kilometers (530 mi) northwest of the island of Majuro and consists of 23 islands of which 2 were habitable. It falls under the Marshall Islands, which consists of 29 atolls and 5 islands.

Bikini Atoll is a very basic place with very poor infrastructure (even compared to other locations around Micronesia such as Truk Lagoon) which makes operating an expedition as tough as it can get, but as you will soon find out, diving the nuclear ghost fleet more than makes up for the logistical hassle you might have to endure to get there.

The following guide should help you answer some of the many questions that you will ask about Bikini Atoll and Operation Crossroads.

**Diving conditions and environmental factors**

Diving conditions in Bikini are excellent, it is relatively easy diving and Bikini is ideal to visit all year around if you look at environmental conditions. The water is a warm 28-29°C/82-85°F all year around whether you are at 6m/20ft or 60m/200ft, and there are no major thermoclines. Whilst the water is warm enough for diving in shorts and t-shirt, I recommend full-length 3-5mm wetsuit or a drysuit with light undergarments. Also bring gloves and a hood for protection, especially if you are planning on penetrating the wrecks. There is sharp metal everywhere and you want to avoid tetanus, infections or being burned by oil or even worse, aviation fuel. Also at times, there are occasional blooms of jelly fish some of which can sting.

Tidal patterns within the lagoon can be complex but the tidal range is generally small and any currents encountered on the majority of wrecks are minimal and hardly noticeable. As you are diving inside the lagoon visibility does vary, but usually is excellent, around 30m.

The daytime air temperature is normally between 28-31°C/82-88°F all year round. Rain is normal most days but normally in short sharp showers with hot sunshine in between.

Food crops grown on Bikini and throughout the Marshalls include coconuts, pandanus, papaya, banana, arrowroot, taro, limes, breadfruit, and pumpkin. A wide variety of trees and other plants are also present on the islands. All fruits and vegetables used aboard Truk Master are imported.

Animal life on Bikini and throughout the Marshalls includes small lizards, hermit crabs, coconut crabs, and a wide variety of birds. Pigs, ducks and chickens are raised for food, and dogs and cats are kept as pets.

Bikini Atoll is a deep and technical diving location, with big challenging wrecks and advanced penetrations. The wrecks are up to normoxic trimix range. Having said that, the wrecks in this range are usually in the deeper range of this spectrum, so racking up a decent bottom time on a “shallow” wreck, will still give you plenty of decompression.
The Critical Experiment

The captain and I have carefully handpicked the most interesting wrecks in the Lagoon, with depths ranging from 21-57m. During the expedition, we will anchor around one wreck per day. Truk Master will do two long dives during the course of the day and the boat does not move at night unless it is an emergency.

In this FAQ sheet, I have included a preliminary wreck itinerary which is subject to change. If the group feels one dive on a wreck is enough and we have weather and organizational logistics on our side to visit another wreck during the day, the captain and I will try our best to make it happen. I do not expect this to happen however, especially not on the Saratoga.

If you have a special request for a wreck, please let me know so I can liaise with the captain if logistically possible. As the trip nears, we will have a group for the expedition on Facebook where we periodically discuss preparations.

This is a great way to share information among the participants pre-expedition and for everyone to get to know each other.

A short third dive can be arranged per day if desired, but being in a remote place like Bikini, safety is absolutely paramount. Doing two long technical dives in a day, for 10 days will give your tissues a run for their money. However, if you want to shorten your runtimes on the shallower wrecks into more dives, and in terms of safety the captain and I are OK with it, we can arrange it.

Detailed dive briefs are given for each of the dive sites with teams forming for different missions (CCR group, OC Group, engine room group and so on).

Truk Master will offer guided and unguided dives during this trip on the vessels that have a permanent mooring. The dive guides in Bikini are just that, guides and not instructors or technical diving gurus.

You are responsible for your own safety and dive planning at all times. There are lots of opportunities to penetrate the wrecks; some of these penetrations are relatively easy and straightforward, whilst others are quite advanced. Dive guides on Truk Master do not run lines on any guided dive. If you want to run your own lines into the wreck then this is, of course, possible but not on a guided dive. The captain and I will explain the best course of action on each wreck for penetration.

Solo diving is permitted on the outside of the wrecks.
Expedition information

Equipment considerations

There are absolutely no dive shops in Bikini Atoll for the purchase of diving equipment or spares for rebreathers or OC equipment at all, period. Truk Master will have some basic diving equipment on board for hire, but with different configurations on board its crucial to bring as many spares as possible to not miss any dives. If you have your equipment serviced before coming to Bikini, then use it a couple times before traveling to ensure there are no problems. Bring plenty of torches, the bigger the better you will NOT regret it in the engine rooms!

Tanks

Following DIN cylinders available on Truk Master:

» Aluminium 12L/80 cu ft Twinsets
» Sidemount Sets
» 3L Rebreather Cylinders
» 6-12L/40-80 cu ft Bailout Cylinders

There are NO M26 valves or adapters on board, you must bring your own. Bring your own slings for decos/bailout! Please specify the configuration you will dive in when you book.

Gases

» Oxygen is US$0.07 per liter
» Helium is US$0.20 per liter

All Nitrox mixes from 32-100% will be available with oxygen charged at US$0.07 per liter.

O₂ is provided at minimum 90% purity from our Oxygen generator.

As there are no means to bank gases in Bikini, ALL GASES SUPPLIED WILL BE CHARGED for even if they are not used.

CCR divers can arrange shared cost team bailout at the beginning of the expedition. After a brief discussion on the first evening, we can fill some standardized gases everybody agrees on which will work for the entire trip.

OC Divers can plan their gas cost looking at the wreck list assuming it’s two dives on one wreck per day. I think it’s fair to budget US$300 for OC divers in oxygen by the thought process of topping up 50% and oxygen every day. But remember its all based on your planning and consumption.

Sofnolime

Molecular Sofnolime 1-2.5mm is available and is sold in 4.5kg containers at 65$ each.

Scooters

Two Dive-X Piranha scooters and two Bonex Scooters are available on Truk Master and can be reserved for 50$ per dive.
Expedition information

Proposed Travel Schedule

Day 1
Flight lands in Kwajalein (KWA), transport on the ferry to Ebeye Island, embarkation on Truk Master. Depending on flight arrivals you might have time for equipment setup and weight check where we are anchored. Truk Master embarks for Bikini.

Day 2
Boat travel to Bikini, boat briefing, paperwork, safety procedures, emergency procedures, equipment setup.

Day 2 till day before disembarkation
Diving in Bikini.

Day before disembarkation
Departure to Ebeye Island. Settle Remaining bills.

Last Day
Disembark Truk Master. Transport from Ebeye Island to Kwajalein. The last dive must be completed 24+ hours before your flight.

Typical day
This will be the schedule for a typical day of diving:

» 07:30 Coffee!
» 08:00 Breakfast
» 08:30 Briefing/Dive 1
» 12:00 Lunch
» 14:00 Briefing/Dive 2
» 16:00 Snacks
» 19:00 Dinner
» 20:00 Team Debriefing

How much will all this cost me?
Please contact us on info@thedirtydozen.org for dates and pricing. The package supplied includes premium cabin accommodation, transfers, full board meals and a set of rebreather/doubles cylinder rental and 2x bailout/deco cylinders. The Critical Experiment has been designed to avoid any unnecessary surprises in the end. The only things we cannot bill you in advance are on-board running costs like Helium, O₂, and internet. Please budget for this! Marine park fees (US$500-$550) just before the trip and usually, flights from Europe to Bikini start at around US$1500.

How do I secure my spot?
The Critical Experiment has scheduled trips 3 years in advance, please contact us for currently available dates. Due to limited spaces, a 40% deposit is required to secure your spot and is NON-REFUNDABLE. The remaining 60% have to be paid latest 6 months before departure. You can pay via wire transfer, credit card or PayPal but please be advised there is a 3% administration fee. Master Liveaboards and The Critical Experiment can help you find a comprehensive travel and cancellation insurance for your ease of mind.
Travel preparation

Essentials

Electricity locally is 110v supplied through American type 2 and 3 pin sockets. On board we have mainly 110v supplied through US/European style sockets. We also have a number of 220v sockets at the camera tables in the dining area. Truk Master can provide a limited number of UK/ Australia plug adapters but recommend guests bring their own. Truk Master has an on board KVH satellite internet system providing the fastest internet access in the Marshall Islands (talk about luxury on an expedition!).

Prices for the Internet are:
» 200Mb package: US$70 (US$60 if you pre-book)
» 500Mb package: US$175 (US$150 if you pre-book)
» 1Gb package: US$300 (only available if you pre-book)

Cash is king in Bikini, bring plenty of US$ as the banks here rarely work! Hotels will accept credit card and Truk Master does this also.

The time zone in Bikini is GMT +12, Bikini does not observe any daylight saving.

Language and Religion

The official languages are English and Marshallese. The population of mixed religion: 51.5 % United Church of Christ, Assemblies of God 24.2% and 8% Mormons. There is a small community of Muslims on Majuro.

Health

In the Marshall Islands, medical care is very basic with the “best” medical facility in Majuro. Any form of treatment other than basic requires evacuation. Ensure you bring any medication you need as there is a strong possibility that it will not be available locally. Normal precautions should be taken with food and it is advisable to drink bottled water only.

No vaccinations are required before entering the Marshall Islands, however; we recommend consulting your doctor for updated information well before departure. If you are traveling from a Yellow Fever area proof of immunization might be required.

It’s recommended that tetanus immunizations are also up to date before traveling to Bikini.

Bikini is a malaria free zone and mosquitoes are not a problem on the boat but they can be annoying on shore, so consider bringing insect repellent. Chikungunya, Dengue and Zika virus have all been reported in the Marshals which is spread by mosquitoes.

Radioactive radiation to which divers are exposed from the shipwrecks is negligible since water acts as an excellent insulator. Divers are safe, as long as they do not try to grab souvenirs from the wrecks. Pillfering is forbidden and hazardous.

Diving Emergencies

The Marshall Islands are an extremely remote diving destination without hyperbaric facilities. The nearest hyperbaric chamber is in either Hawaii or Australia. For follow-up recompression treatment, emergency air evacuation to one of the aforementioned countries is required. With this in mind, it is mandatory that our guests purchase dive and liveaboard specific insurance according to their level of certification. This insurance needs to cover air evacuation and the appropriate depths you plan to dive to. We strongly urge that all guests dive well within recognized limits and follow our Dive Guides’ advice.

Emergency Equipment

Each Master Liveaboards vessel is equipped with modern safety features such as automated life rafts, EPIRB, satellite communication and emergency pumps.

First Aid

Master Liveaboards vessels are equipped with a fully stocked medical first aid kit for treating minor injuries and ailments as well as for assisting trained medical professionals in remote locations. Each yacht has a full complement of medical grade oxygen which can be administered to divers through DAN kits or unit specific attachments. You will also find on board an Automated External Defibrillator (AED) that has been proven to greatly increase the survival rate in the eventuality of cardiac fibrillation. Our dive teams are all qualified emergency responders. Should you feel unwell at any point during your cruise, please seek the advice of your cruise director who will be able to assist you.
Travel preparation

Visa and travel
For most visitors, a free tourist visa for 30 days is granted on arrival in Kwajalen, which can be extended for up to 90 days. US citizens can stay for one year. Passports should be valid for 120 days beyond the departure date and guests must have onward travel out of the Marshall Islands booked before they arrive. There is a departure tax of US$20 cash when leaving Kwajalen. It is important that you have the necessary arrangements sorted out before you travel. Options for getting to Kwajalen are via Hawaii, on the United Airline’s island hopper. As Hawaii is a US state the ESTA regulations also apply. Getting to Guam onwards is possible via Manila, Hong Kong, Tokyo or Incheon, Korea.

Airline to use from Guam or Hawaii:
United Airlines – www.united.com
Flying United Airlines via Guam is not a choice, it’s the only airline that goes from Guam or Honolulu to Kwajalen. Guam and Kwajalen are a US territory. You will need permission to enter the US either by Visa or ESTA (Electronic System for Travel Authorization).

Advice on International Flights
It is recommended that you book your international flight to and from Kwajalein Airport (KWA), which is served by United Airlines three times per week from Honolulu, Hawaii (HNL) and takes around 7 hours. (The HNL - MAJ - KWA flight leaves on Monday, Wednesday, Friday, so generally, you will have to leave the day before that (Sunday, Tuesday, Thursday) from Los Angeles (LAX) or San Francisco (SFO) to make the connection.) Ideally, you arrive in Honolulu one day in advance of your flight to Kwajalein as this flight departs early in the morning. Keep in mind you will be crossing the date line traveling to Kwajalein Atoll. There is also a flight from Guam arriving at Kwajalein, however; the itinerary for our trip is scheduled around the Honolulu flight.

Arriving at Kwajalein Airport
As Kwajalein is a US Army base, arrival and check-in at the airport can be lengthy, bags are likely to be searched and a representative from Master Liveaboards cannot meet you due to the high security clearance. It is of utmost importance that you stress with the government officials when you land that you want to identify your luggage immediately before the plane takes off so it is not forgotten to be disembarked. This has happened before. Once you have completed formalities at the airport a shuttle bus will take you to the Kwajalein ferry terminal from where you board a free Army ferry for Ebeye Island. Once you arrive at Ebeye you will be met by our staff who will assist you in transferring to the Truk Master which will be anchored a short distance away from the ferry dock.

The distance from Kwajalein to Bikini is 406 kilometers (215 nautical miles), of which 120 kilometers (65 nautical miles) are in the sheltered waters in the lee of Kwajalein Atoll and 280 kilometers (150 nautical miles) of open seas from the northerly point of Kwajalein Atoll to Bikini Atoll. On average the trip takes 25-30 hours depending on the weather.

Optional Hawaii/Marshall Islands package
If you would like to extend the luxurious feeling and pamper yourself a little extra, Master Liveaboards can offer you the following package — organisation of your transfers to and from the airport in both Hawaii and on Kwajalein, as well as to and from the Truk Master, and the booking of the hotel of your choice in Honolulu for your first and last night before and after your flight to the Marshall Islands. Please mention this when you book if interested.
Travel preparation

Baggage Allowance
This is a tricky one. United Airlines will allow 2x22kg bags checked in on your flight from Guam onwards to Kwajalen which is great for you. You have to make sure your operator until Guam does the same to receive the benefit the whole way, and not be slapped with fines. What I usually do is have 25kg in my hand luggage and around 50kg in check, at my own risk. Works so far, but you have to be careful. Keeping CCR heads and regulators in an FCC approved cabin pelican case has worked wonders for me taking pressure off checked in weight. Otherwise, you can just pay for the extra bag.

Advised minimum dive level & insurance
Master Liveaboards strongly recommends that all guests carry full travel and cancellation insurance as we cannot be held liable for delays which occur during the cruise, nor any delays or cancellations of the flights, accommodation, tours, and transfers organized. Master Liveaboards work in partnership with DiveAssure and can offer you a selection of competitively priced dive and travel insurance policies, including short-term and multiple trip policies. We recommend the comprehensive insurance plan Dive & Travel Plus; which has been specifically developed for diving liveaboard holidays. This insurance covers your trip expenses in the event of missing your liveaboard departure due to (flight) delays. Moreover, it provides coverage for lost diving days if for any reason the boat is required to abort the cruise; for instance, due to a guest injury, mechanical breakdown of the ship, air supply failure, inclement weather conditions, etc.
Minimum training requirement for this cruise is normoxic trimix open circuit and closed circuit.
Life on Board M/Y Truk Master

The yacht

Built of steel and giving a cruising speed of 10 knots, the 3 decks provide ample space for you to dive and relax with all the comfort and space for your technical dive equipment as well as your underwater cameras and accessories. All this surrounded by knowledgeable and specially trained expedition-crew ready and waiting to show you all the mysterious wrecks of The Critical Experiment!

Guest facilities

» 8 twin-bed/double-bed a/c and en-suite cabins for 16 guests
» Main deck spacious indoor dining combines with camera station, complete with numerous charging points and storage
» Dive deck provides individual set up stations, under-bench storage and camera table with a large entry platform to the rear and deck head.
» Booster to fill O₂ to 200 bar
» Oxygen generator
» Upper level indoor lounge and bar with plasma screen for planning expedition dives
» Plenty of space to setup rebreathers and fill scrubbers
» Big rinsing tubs
» Shaded outdoor relaxation area, with lounge chairs
» Sun deck and captain’s fly-bridge
» One dive tender when doing exploratory wrecks
» Brand new customized expedition tec diving facilities

For more information about Truk Master please visit:
www.masterliveaboards.com/truk_lagoon
Life on Board M/Y Truk Master

Food and Drink
All Master Liveaboards yachts offer a choice of international and local cuisine, served buffet style, in the indoor air-conditioned dining area. We cater to special dietary requirements; please inform our reservations team prior to your trip to ensure we have plenty of dishes to suit your needs. A range of carbonated soft drinks, fruit juices, black, green and herbal teas are commonly available, as well as instant and freshly brewed coffee. A selection of fresh fruit is readily available, as well as some tasty treats, should you feel peckish in between meal times. You may also select beer, wine, or spirits from the cocktail bar for an additional fee.

Clothing and Footwear
It is recommended our guests to bring casual and comfortable clothes; swimwear, shorts, and t-shirts. A sweater is advised for cooler nights, particularly after multiple dives.
We do request that guests respect the wishes of others by donning clothing for meal times. Most guests prefer to walk barefoot on board of our vessel; however, island visits may require sturdy sandals or cross-trainers.

Smoking
Smoking on board is permitted in designated outdoor areas.

Payments on Board
Marine and Port Fees
The dive permit for Bikini costs: US$500 (subject to change)

Optional Extras
All prices on board are quoted in US$. We are able to accept payment by credit card (Mastercard or Visa) for which there is a 3% surcharge. Guests are advised to bring from US$500-1000 for any optional extras.

Tipping
Tipping is a matter of personal choice. Should you feel that your crew has made your holiday extra special, then they will certainly appreciate a tip. Please be advised that the boat can only accept tips in cash. An envelope will be provided for your convenience by your cruise director and gratuities then divided equally amongst all the crew, including the captain and dive guides. 200$ is recommended tipping.
The Critical Experiment – FAQ

Please note that the wreck list is subject to change at any time for any reason deemed appropriate by the captain and me.

USS Prinz Eugen

Prinz Eugen was an Admiral Hipper-class heavy cruiser, the third member of the class of five vessels. She served with Nazi Germany’s Kriegsmarine during World War II. The ship was laid down in April 1936, launched in August 1938, and entered service after the outbreak of war, in August 1940. She was named after Prince Eugene of Savoy, an 18th century Austrian general.

Prinz Eugen saw action during Operation Rheinübung, an attempted breakout into the Atlantic Ocean with the battleship Bismarck in May 1941. The two ships destroyed the British battle cruiser Hood and moderately damaged the battleship Prince of Wales in the Battle of the Denmark Strait. Prinz Eugen was detached from Bismarck during the operation to raid Allied merchant shipping, but this was cut short due to engine troubles. After putting into occupied France and undergoing repairs, the ship participated in Operation Cerberus, a daring daylight dash through the English Channel back to Germany. In February 1942, Prinz Eugen was deployed to Norway, although her time stationed there was curtailed when she was torpedoed by the British submarine Trident days after arriving in Norwegian waters. The torpedo severely damaged the ship’s stern, which necessitated repairs in Germany.

Upon returning to active service, the ship spent several months training officer cadets in the Baltic before serving as artillery support for the retreating German Army on the Eastern Front. After the German collapse in May 1945, she was surrendered to the British Royal Navy before being transferred to the US Navy as a war prize. After examining the ship in the United States, the US Navy assigned the cruiser to the Operation Crossroads nuclear tests at Bikini Atoll. Having survived the atomic blasts, Prinz Eugen was towed to Kwajalein Atoll, where she ultimately capsized and sank in December 1946.

USS Saratoga

Commissioned in 1927, an American aircraft carrier weighing 39,000 tons, it now rests in Bikini’s lagoon at a depth of 51m. Her bridge is easily accessible at 12m feet, her deck at 25m feet, and the hanger for the Helldivers at 40m. These Helldivers and bombs are still on display complete with all dials and controls. Saratoga had a fuel capacity of 63,200 barrels of fuel oil, 249 barrels of diesel oil, and 132,264 gallons of gasoline. Fuel and ammunition loads during the Baker test were 10% of capacity and 67% capacity respectively. She was reported sunk by the Japanese seven times during World War II. Eight hours after the waves created by the atomic Baker blast rolled over her, New York Times correspondent Hanson W. Baldwin wrote this epitaph as he watched the Saratoga sink slowly beneath Bikini’s lagoon: “There were many who had served her in the observing fleet and they fought with her through the long hot hours as the sun mounted. Outside the reef ... the observing ships cruised, while the Sara slowly died. There were scores who wanted to save her—and perhaps she might have been saved, had there been a crew aboard. But she died a lonely death, with no man upon the decks once teaming with life.
HIJMS Nagato

The Japanese Flagship to the Japanese Navy, she was Admiral Isoroku Yamamoto’s floating fortress during Japan’s World War II attack on Pearl Harbor and was a treasure to the Japanese forces. Japanese Naval historian Masanori Ito wrote: “When World War II began, the Japanese Navy—the third most powerful in the world—included some of the mightiest ships in naval history and was a force worthy of the pride and trust of the Japanese people. Then, in less than four years, this great war machine fell from glory to oblivion. Of ten battleships riding in Hiroshima Bay in December of 1941, nine were sunk. The lone survivor, the Nagato, died at Bikini as a target in an atomic bomb test.” The 32,720 ton battleship is at rest upside down in 170 feet of water; her bridge is accessible where you can enter the exact spot Admiral Yamamoto launched the attack on Pearl Harbour. She is upside down in the water and an incredible dive with her four massive screws appearing like an underwater Stonehenge.

USS Arkansas

A 29,000 ton American battleship that survived two world wars had a fuel capacity of 37,779 barrels of fuel oil, 119 barrels of diesel oil, and 4,000 gallons of gasoline. The Arkansas took part in the Presidential Naval Review in the Hudson River, October 14, 1912 and then carried President William H. Taft to the Panama Canal Zone for an inspection of the unfinished canal. On April 22, 1914, she assisted in the occupation of Veracruz, Mexico. In December of 1918 she formed part of the escort carrying President Woodrow Wilson to France. In World War II, the Arkansas escorted convoys across the Atlantic. She remained in European waters for the invasion of Normandy where she performed yeoman service at Omaha Beach, the bombardment of Cherbourg and the invasion of southern France. She then moved to the Pacific to participate in action at Iwo Jima and Okinawa. The Arkansas, at rest almost completely upside down in Bikini’s lagoon, received four battle stars for her service in World War II and was sunk by the Baker Blast.

IJN Sakawa

The Sakawa, a Japanese ship, was built in Sasebo Naval Dockyard, and launched on April 9, 1944. She was the only vessel of its class to survive the war. Nominal armament 6 x 6”/50 (interestingly, these guns were refitted secondary weapons from earlier ships, like the Kongo-class battleships), 4 x 80mm AA, approx. 61 x 25mm AA, 8 x 24” torpedo tubes, 16 depth charges, 1 catapult, and 2 floatplanes. The Sakawa was surrendered to the U.S. at Maizuru in August of 1945, then used for repatriation duties until taken to Bikini where she was sunk by ABLE with an unknown fuel load and apparently no ordnance in an upright position.

USS Anderson DD-411

An American destroyer that received ten battle stars during World War II. She served as a carrier screen in the Coral Sea, Midway, the Solomons, Guadalcanal, and Tarawa. Always on the front lines, she was with the Lexington CV-2 and the Yorktown CV-5 aircraft carriers when they were sunk in battle by the Japanese. She was also with the USS Wasp and the USS Hornet when they were sunk in WWII. In 1943, in Wotje Atoll in the Marshall Islands, she got hit with a 155mm shell that killed the captain and five officers and wounded another 18 men. She carried 2929 barrels of fuel oil and 168 barrels of diesel oil and was at 95% of capacity of both fuel and ordnance when she was sunk by the Able blast and is now at rest on her side in Bikini’s lagoon.
The Critical Experiment Wrecks

USS Lamson DD-367
The American destroyer Lamson received five battle stars for service during World War II. She was used to search for Amelia Earhart in 1937 in the Marshall and Gilbert Islands. She was deployed from Pearl Harbor on December 7, 1941, in the unsuccessful search for the Japanese Task Force that bombed Pearl Harbor and later served throughout the Pacific until the end of the war. Her fuel capacity was 3,600 barrels, her diesel oil capacity was 110 barrels, and she was at 50% capacity for both fuels and ordnance when she was sunk by the Able Blast. Her hull provides a great example of the power of a nuclear explosion as it is horribly twisted and damaged.

USS Apogon
An American submarine with normal fuel capacity of 54,000 gallons, and an emergency load of 116,000 gallons. She made a total of eight war patrols sinking three Japanese vessel, with her first patrol was out of Pearl Harbor in November of 1943. She later patrolled from Majuro to Midway and was part of Operation Galvanic during the invasions of Tarawa and the Gilbert Islands. Working off Formosa, she ran in a wolf-pack known as the “Mickey Finns” that sunk 41,000 tons worth of Japanese vessels toward the end of the war. She received five battle stars and was sunk by the Baker blast. She now appears perfectly upright as if ready to drive away on the bottom of Bikini’s lagoon.

USS Pilotfish
An American submarine with normal fuel capacity of 54,000 gallons, she made five war patrols during WWII. Fuel and ammunition loads were 95% of capacity. She received five battle stars, patrolled the Northern Marianas, Bonin Islands, the East China Sea, and the southeast coast of Japan. She was featured in ABC’s World of Discovery Emmy nominated production about Bikini Atoll, “Forbidden Paradise.” She is on her side and half-buried in the sand sunk by the Baker blast.

USS Carlisle
A merchant craft named after a county in Kentucky, she had a fuel capacity of 9,695 barrels of fuel oil and 375 barrels of diesel oil. Her main voyages include the west coast from Hawaii and Japan and shorter passages among South Pacific islands. She sits upright on the bottom and is guarded by a magnificent school of skip jacks; and there is almost always a shark sitting on this ship. The ABLE blast split her open so she makes for a sensational penetration dive. Fuel and ammunition loads during test ABLE were 95% of capacity.
I started diving in 2005 in an attempt to break away from the rat race and since then never looked back. My passion for technical diving has taken me to some of the best diving locations in the world, doing some fantastic expeditions. I have written articles for dive publications and training organizations, developed products with Fourth Element, Hollis, and Ocean Reef and regularly helped organizations developing training outlines. I also filmed documentaries and commercials along with hosting numerous TV and Film productions including National Geographic’s One Strange Rock, Dive Odyssey, and Monty Halls on Channel 5.

I was one of the Co-founders of Team Blue Immersion, one of the most renowned technical diving facilities in the world, which I operated with Jonas Samuelsson and Erik Brown from 2010-2016 teaching up to Advanced Trimix, CCR, Gas Blending, Full Face masks and support diving in the technical diving mecca of the world, Dahab. I was responsible for safety for dives on CCR, OC, and freediving up to 200m.

In terms of wrecks diving highlights, my latest discovery was a four year two-part project where, in 2011 and 2013 Team Blue Immersion and I discovered the wreck USCGC Alexander Hamilton at 95m, 20 miles off the coast of Reykjavik. We initially conducted a deep exploration dive and subsequently, after communicating with the US Coast Guard and the families of the fallen men, attached a memorial plaque on the ship for the families of the fallen soldiers.

Since selling my business, I have been fortunate to travel the world on expeditions with world-renowned divers exploring caves, mines, and wrecks. After a year in Truk Lagoon and becoming absolutely addicted to wrecks, I subsequently started doing CCR charters to Truk under the name The Dirty Dozen. The Critical Experiment is a brainchild of my love for the best wreck destinations in the world, and there are more to follow.

I hope you found this FAQ sheet useful, if you have any other questions or comments, please contact me on info@thedirtydozen.org or catch me on Facebook Messenger.